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A WEEKLY REVIEW OF MEDICINE

EDITED BY

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352,500 yen;[1] during the second outbreak Tokyo city, although her patients numbered only fifteen, spent 220,000 yen; i. e., 14,600 yen for each victim. The figures only show how expensive an outbreak of plague is, to say nothing of the dreadful effects upon human life. From the above mentioned facts, it may easily be supposed how great a burden the present epidemic which is raging in Kobe and Osaka with unparalleled vigor will bring upon the financial resources of the country. The city of Kobe spent 310,000 yen and Osaka spent 470,000 yen for preventive measures; and is clear from the present condition that we shall have to spend a far greater amount to keep the plague at bay.

These are the direct burdens imposed upon the finances of the country, but this is not all; for the indirect detrimental effects should be also considered. The loss is inestimable, because it is such a wide and far reaching one, affecting both domestic and foreign traffic, that it cannot be compared with any other kind of epidemics, even without considering its direct damages upon a limited community. Plague is indeed the most fearful enemy of mankind.

From our studies of epidemics in Japan we can see that there are two ways in which it might be introduced. The one is by contagion from plague patients imported and the other by contact with the disease germ mingled in the freight brought in from some infected regions. Preventive measures depend upon these ways. If the way be by plague patients discovery is made easier, and the preventives or quarantine, as the case may be, can be applied promptly so that the ravage can be confined within at least a small radius. On the other hand, if the disease germ is going to be propagated through the medium of the rat tribe, prevention becomes more difficult; for at the same time that the discovery of the infected rats is made human beings are already the victims. Moreover, at the moment that man receives contagion from rats the ravage of epidemic as a rule reaches a high mark, so that the outbreak soon assumes a character difficult to control, and the ravage spread far and wide, affecting both men and animals. Such a case may be illustrated by the first outbreak and by the present epidemic, in which Osaka and Kobe are the chief sufferers. The ravages at Chiba and Kagawa may be taken as an example of a case in which the source of the epidemic was a human patient. In this outbreak we were able to have the ravage confined within a small locality by promptly applying the preventives, that is to say, before the rat tribe was attacked by the germ. We can see thus the same preventive measures giving different results in different cases.

In every case of epidemic it is difficult to ascertain the exact circumstances under which plague is introduced. This is especially so when the medium of propagation is something other than a human patient, notably rats. So far the plague epidemics in Japan has in every case been first discovered in localities communicating directly with foreign countries and has then spread to internal regions. Moreover, the first case in a locality that has subsequently become the source of the epidemic has been invariably associated with freight imported from infected regions. The first epidemic broke out from a steamer that entered the port of Kobe, bringing in raw cotton and Chinese rice from Bombay and Hong-Kong. The second epidemic may be traced to a vessel that entered the port of Yokohama with a freight consisting of raw cotton. The present epidemic prevalent in Osaka and Kobe may be traced to a vessel in Kobe harbor, on which the raw cotton was imported from Bombay to the Cotton Spinning Company in Kobe. These show almost identical origins for the fatal pestilence.

As a rule, the plague germ on entering these trade ports does not directly attack men; it first infects the rat tribe, and by the time human victims have been discovered the disease has assumed a well advanced form. This fact has been seen in several occasions. The present epidemic in Osaka is a case in point. It was preceded by the discovery of infected rats in February, and during May of the same year human victims began to appear, thus showing how deep rooted is the source of infection.

With respect to the season it has become evident that a winter epidemic is generally of a chronic character and rages for a long period, spreading over a large area. The severity of the disease is also shown by an epidemic of this nature. To this class belong the first and the present epidemics in Osaka and Kobe, and the epidemic which occurred in Tokio and Yokohama. A summer epidemic is usually acute in character and spreads as a rule by contagion. It is severe, but is of short duration, and is limited to a small area. To this class belong the epidemics in Chiba and Kagawa last year, and that in Hamamatsu in 1900. It is noticeable that during a winter epidemic a large number of rats are found infected, whilst in a summer epidemic infected rats are rarely if ever found.

Preventive Measures.—It has been shown that plague epidemics in Japan have their origin in the regions of the Indian Peninsula, South China, and Formosa. The first and most urgent step in the way of preventives is therefore to put the vessels coming in from these regions in quarantine. Hence, quarantine stations have been erected at Yokohama, Kobe, Nagasaki, Moji, and other principal trade ports, and quarantine measures enforced as strictly as possible. Plague infected vessels are forbidden all communication with the land, and are to apply the rat killing measures and other sanitary methods. For killing rats aboard a vessel, specially constructed rat destroying boats, similar to those used in the port of Hamburg, Germany, are to be despatched. These boats are provided at Yokohama, Kobe, and Moji, and are now in use.

To the bureau of public health under the Department of the Interior belongs a special office for adopting and executing measures against infectious diseases. Its officials are composed of physicians and surgeons, their assistants and quarantine commissioners. Each municipality or prefecture has also instituted a board of health,

[1] A yen is equal to about one dollar.

consisting of one physician and several assistants with a number of inspectors. This organization is placed under the direct control of the police department. They take charge of all the matters relating to infectious diseases. The principal prefectures and districts are provided with

FIG. 1.—Disinfection of the infected houses, showing how to inclose the area with a zinc wall.

isolating hospitals and laboratories to receive patients, and to take necessary preventive measures. In cases of plague outbreak the prefectural governments increase the number of officials so as to meet the occasion. When an outbreak is of unusual vigor an imperial ordinance is issued by which is ordered the organization of a special board for preventives against plague, consisting of commissioners, inspectors, clerks, and watchmen. Several councillors are also to be appointed whose function it is to submit advice on the matters in question. On account of the present outbreak Osaka municipality has in commission 311 officials and several councillors.

In Japan all affairs relating to health and sanitary measures, particularly to the preventive measures against infectious diseases, belong to local administration; but the execution has to be carried out with the aid of the police. The expenses required for the purpose are borne by the people of the locality with the aid of financial resources of the prefectural or municipal government. The central government, moreover, has promised to aid the local governments in case of an outbreak of contagious diseases to an amount not exceeding one sixth of the total expense. In case of plague, however, the central government has spent and is spending an enormous amount far above the fixed rate.

The Institute for Infectious Diseases acts as councillor to the government for matters relating to health, and especially to the preventive and sanitary measures against infectious diseases. In time of plague epidemic the institute furnishes, through governmental appointment, those commissioners and officials who take charge of preventive and sanitary measures. It has a plague laboratory conducted by the most advanced scientific methods. Here are prepared post serum and vaccine for the use of the whole country. As a part of its work it gathers a number of physicians and surgeons from all parts of the country, and gives a course on bacteriology and epidemiology. Those who have already finished the course in the institute number at present 1,293, and may be found scattered throughout the country. At least, a part of them is now actually engaged in important work in hygiene and preventive affairs.

As these specially educated physicians and surgeons are located throughout the country, it is an easy matter to gather several hundreds of commissioners at once in a time of emergency. To fight the plague there is usually needed a large number of experienced physicians; and for this preparedness the country owes much to the institute.

Such is a brief account of the organ for the preventive work done in Japan. I must here express my sincere admiration at the way in which the United States is providing against infectious diseases by appointing medical officers to be stationed at the principal ports of the world. I believe that preventive measures against plague are the most urgent need of the age, but in order to be of permanent good the measures should not only include the temporary suspension of the intrusion enforced at one's own ports, but medical officers should be stationed at the infectious source, where departing vessels should be strictly examined. I have suggested that officials should be stationed at least in ports of India and South China, to which the plague outbreaks in Japan had been traced.

In fighting plague, quarantine on ports, however strict and complete, cannot be solely relied on, hence the general measures of providing against the infectious diseases throughout the country must be perfected. As plague cannot be considered among ordinary infectious diseases, the regulation bearing on the infectious diseases in Japan were found unavailable, and

FIG. 2.—Disinfecting the cotton.

the government had to remodel them so as to meet with the needs of the time. The principal features in the new regulations may be stated here:

1. Disinfection; discommunication; isolation; the preventive measures against infectious diseases to be enforced not only upon patients, whether dead or alive, their houses and furniture, but upon all suspicious cases.

2. For disinfection of plague all rats must be killed.

3. If infectious patients are found suffering from plague, the days of isolation should not be less than ten.

These regulations were based on the experience of several years. As to the disinfection it is necessary to make its area as extensive as possible, as the plague germ is very easily propagated. Again, bubonic plague often develops pulmonary or dermic plague, and the disease not unfrequently infects by direct contagion, especially in time of epidemic; discommunication and isolation, therefore, must be strictly enforced. A fixed isolating period of ten days was desired as the incubation period of the plague lasts from six to seven days. Killing all rats if possible was deemed necessary from the fact that the animal has the closest connection with plague. These principles were applied where the intrusion of the pestilence was suspected previous to the formulation of the new regulations.

FIG. 3.—Laboratory work.

In killing rats it is important to remember that traps and appliances should be set in all buildings, particularly those which contain cotton and grains in which the plague germ is most liable to be stored. I gave out a warning in this respect and made a suggestion a few years ago, as the result of which the municipal government of Tokyo issued an ordinance respecting building of warehouses. According to this ordinance all buildings must be constructed so as not to allow a place of abode for the rat tribe. Similar regulations have been adopted in other cities and prefectures, especially in places directly connected with foreign countries. Legal acts appear rather despotic; nevertheless, it must be regarded a necessity in view of the dreadful character of the disease that is propagated by rats. I believe that the application of such a rule should be permanent not only on warehouses, but on all dwellings, making them all "rat proof." then the danger of infection would be greatly lessened. Such a step is yet to be taken.

Sanitary Works.—The principal works realized from the preventive measures are: 1, Bacteriological examination; 2, searching for patients; 3, killing rats, disinfection, and application of sanitary methods; 4, disposal of patients and of infected articles. The work may be briefly described as follows:

The bacteriological laboratories in different districts and prefectures, which in ordinary times are used for examination of infectious diseases in general, have been specially provided with facilities for the study and examination of plague. and in the time of plague epidemic they may be used for this special purpose. In such places as Kobe, Osaka, Yokohama, and Tokyo, which are most frequently threatened with plague intrusion, the government has been encouraging the destruction of rats for several years past by buying from the people all rats killed or caught. This practice has a twofold purpose, one the preventive of an epidemic, and the other to ascertain if there be found any infected rats, as these usually precede an epidemic among men. Each of the rats bought by the government, immensely numerous in number, is examined bacteriologically. In the laboratory of the board rats from 3.000 to 4,000 in number are daily examined, even in ordinary times, and in time of an epidemic the number reaches an enormous figure. As the plague outbreaks in Japan are usually preceded by the infection of the rat tribe, the examination of rats may be regarded as a sort of reconnoitering work. The use of the reconnoissance may be illustrated by the fact of the infected rats having been discovered in Yokohama in 1902 before any human victim could be found, and the warning was given in time. Examining rats was even more necessary in time of an epidemic, for it was only by such processes that the conditions and manner of propagation of the plague could be actually known.

From the experiences of the past it may be suggested that in examining rats particular attention be paid to the submaxillary. and cervical glands, and spleen of the animal. Those organs in most cases show the evidences of infection if there be any. The inference drawn is that the rat tribe receives the plague germ through the mucous membranes of the mouth and throat. An important work during an epidemic prevalence is the bacteriological examination of the matters obtained from the patient or the dead, for the diagnosis of plague depends on both clinical and

FIG. 4.—Examination of rats.

bacteriological examination. In suspicious cases materials for examination are taken from the affected parts, such as glands or skin lesions, and the expectoration of the patients is frequently subjected to examination. In the dead, the heart blood, spleen juice, and the contents of the glands or lungs are to be examined. In connection with these materials, microscopical examination, germ culture, and animal experiments are carried on. Agglutination for the pest serum is also unavoidable. It is, of course, difficult by any of these methods to ensure the discovery of infection, but many cases are on record in which suspicious things, such as cotton filth and decayed grains, were really found infected with plague germ. Such a case was illustrated in Osaka in 1899 when cotton filth revealed plague germ under bacteriological examination.

Searching for the patients is also an important work of prevention, especially when intrusion of plague is suspected. Physicians are generally expected by law to report when an infectious disease is discovered, but such reports are in most cases unavailable, for they cannot be relied on regularly. During an epidemic period the number of plague cases brought to light by physicians' reports amounts to only one tenth of the whole patients actually existing. So far, the physicians in the localities where plague never was seen before have been ignorant of the disease and have permitted the epidemic to spread rapidly. This unfortunate fact was illustrated by the outbreak in Kagawa last year. As a means of promptly seeking out the patients in places which are frequently menaced with the intrusion, the physicians attached to the police are intrusted with the power of examining the dead from acute feveric diseases. That such examination should not be neglected has been shown by our experiences during epidemic periods, for it has given the same result as the reconnoitering work by the examination of rats. The following shows the finding of plague patients during the present epidemic in Osaka and Kobe last year:

	Osaka.	Kobe.
Physicians' reports	49	30
Inspection of dead	27	26
Inspection from house to house	34	33
Isolation	17	0
Miscellaneous	4	1
Totals	131	90

From the foregoing table it will readily be seen that if the dead had not been examined, twenty-seven cases in Osaka and twenty-six cases in Kobe which were found to be really infected with plague would have been regarded as cases of ordinary diseases, thus increasing the sources of the epidemic. It must be admitted that it is not an easy task, though a very necessary step, to inspect apparently healthy persons living in an infected locality or its vicinity. The districts where the epidemic is most liable to prevail are the places where ignorant people reside, and this fact hinders the progress of the health inspecting officials. Only by their devotion to duty and work could these physicians succeed in their efforts. Their admirable work was illustrated during the outbreak at Tokyo in 1903, where in every case, except the three early cases out of the total of thirteen plague patients, diagnosis of apparently healthy persons gave a warning hint, and the patients were promptly removed and isolated. In the present epidemic in Osaka and Kobe not a few dangerous cases were discovered by the inspection of persons, as the foregoing table shows. The task of finding plague cases by such methods, however, becomes difficult in proportion as the epidemic spreads further, and the patients are found scattered over a wide area.

Plague in a patient or a dead person has to be ascertained, as stated, by both clinical and bacteriological examinations, but application of such a test needs to be done as speedily as circumstances permit. The determination of a plague case was usually effected within forty-eight hours after the finding out of the suspicious patient or death. During the examinations the

FIG 5.—Examination of rats.

patient or the dead person is to be restricted as though a real plague case.

In localities where imported freight is stored, or laborers live, or of imperfect sanitary surroundings, rat killing measures are enforced even on ordinary days. In time of impending intrusion of plague rats killing measures are generally enforced. Two days at least previous to the application of sanitary system rat killing devices, traps, and poisons are provided for every dwelling and warehouses. In buildings that can be tightly enclosed, vapor of formaldehyde or sulphurous gas is set free. All such places as permit abode to rats are to be rebuilt, sewerages to be improved, and filth burnt. These constitute the rat killing sanitary measures. Occupants of the dwelling where plague patients are found, or where infected rats are frequently found, are to be removed and the whole building disinfected by the application of the rat killing sanitary measures. Around such buildings are constructed zinc walls, and in the neighboring sewers are set metal nets. If the infected place includes an extensive area it is divided into small sections, and a similar method is applied to each section. The first step in sanitary method is to disinfect the furniture, search for rats, and then disinfect the whole building. As disinfectants carbolic acid, sublimate, and lime water are used.

Articles of a suspicious nature are sometimes steamed, boiled, or burnt. The disinfected objects are then exposed to the sun.

In applying disinfection in some instances it it desirable to destroy the whole building by fire. I believe we should be justified in taking such extreme measures as a means of absolute disinfection, in case the infection has not yet spread to a wide area and for a building situated in such a position as to inconvenience the application of sanitary measures. Such a measure was not infrequently taken in Japan. Before setting fire to a building precautions are necessary to prevent rats from escaping to neighboring houses to which they might carry the germ. This is done by surrounding the house with zinc walls.

Difficulties of disinfection by absolute destruction of the whole house are in many cases unsurmountable. This is particularly so when plague patients and infected rats are found scattered over a large area. The present epidemic in Osaka and Kobe illustrates such a situation, as

FIG. 6.—Searching for rats in a warehouse.

in these cities the ravage is not confined in a small area, but scattered throughout the whole of the cities. Had extreme measures been applied in these cities the whole districts would have been burnt.

The zinc walls used in connection with the disinfection display a peculiar appearance. They serve to keep off the rats from infected places. The effectiveness of walling in a small area before epidemic becomes vigorous has been illustrated during the outbreak in Yokohama and Tokio. The height of the walls varies according to different circumstances, but usually it is of about three feet from the ground with a foot or two buried in the earth, so that rats can neither climb over such a wall nor go under it. The use of zinc for such a purpose is apparent, for it is not liable to rust like some other metals, and may be used repeatedly. These zinc walls were built in every epidemic period, but the largest of them were those built in 1903 in Tokyo. These walls inclosed an area of about three quarter square mile, with partitions dividing it into several sections. Besides, every place where infected rats were found was inclosed with a wall. The total length of the zinc walls measured 204,148 feet, or about four miles.

The discovery of a plague suspected patient is to be promptly followed by the proper measures to prevent further spread. Inspecting physicians hurry to the patient's residence, and if the suspected person proves to be a real case, he is at once conveyed to a hospital for infectious diseases, or to an isolating hospital where proper treatment is given. Should the discovery be made in a dead body, the remains are first disinfected and then disposed of by cremation. Each member of the infected family, and suspected persons in the neighborhood, are sent to an isolating house. Even apparently healthy persons are subjected to daily examination during the days set for isolation. They are treated with all the possible means of disinfection and prevention, including the inoculation of the pest serum, which gives passive immunity. Those who are in less danger are inoculated with the pest vaccine.

The pest serum and vaccine have been used in every epidemic, those who were treated with the remedies numbering tens of thousand. We have been unable to obtain the exact statistics during the epidemic periods in the main Japanese islands as to the value of these remedies, and the question remains yet to be settled definitely as to the susceptibility to the infectious influence of those who have received the administration.

In the outbreak in Tainan, Formosa, which occurred in 1901, the conditions enabled us to obtain a valuable set of statistics, and the enormous number of persons who were vaccinated gave hints as to the value of the vaccine. Of 10,876 inoculated persons in Tainan only seven were attacked by plague; while out of about 40,000 persons who failed to receive the treatment more than five hundred were infected with the disease. From such facts it is not difficult to believe in the favorable results of the vaccination, although we are not yet in a position to assert its value conclusively.

Those plague commissioners and officials who at the call of their duty have to come in contact with the dangerous patients have received the inoculation of the serum. During every epidemic officials have been inoculated with the small quantity of the serum (sixteen to twenty c.c.) and none of them has yet been infected. During the present epidemic in Osaka and Kobe prophylactic serum inoculation was applied to the persons who were members of an infected house. The results of the prophylaxis are as follows:

TABLE SHOWING THE NUMBER OF PATIENTS.

	Osaka.	Kobe.	Total.
Not inoculated:			
Total	829	4,477	5,306
Infected	16	15	31
Inoculated:			
Total	137	157	294
Infected	..	1	1

The one case which was infected after the inoculation was found to be a member of a family, one member of which had been suffering with pest pneumonia, and the patient had been infected previously to the inoculation, eruption being only delayed by the inoculation of the serum, and we are glad to add here that she is now on a way to recovery, though the case was one of the pest pneumonia.

In such instances the value of the serum inoculation as prophylaxis has apparently been proved.

For treatment of plague patients two methods may be recommended, the one requiring operation or extirpation of bubos, and the other the inoculation of the serum. Efficiency of the treatment depends on the stage of plague developed; when performed at an early stage a favorable turn may be expected, but in the later stage,

FIG. 7.—Warehouses inclosed by a zinc wall.

especially when the patient develops septicæmia, the treatment becomes futile. Hence it is important for physicians to diagnosticate patients at the earliest stage possible. The good result to be obtained from the serum treatment admits of no dispute. During the first outbreak in Osaka Yersin's serum was used for inoculation. but owing to the scarcity of the supply results fell short of expectations. Since 1900 our institute commenced the preparation of the serum to meet the constant demand. For the patients actually suffering from the plague a comparatively large quantity (200 to 240 c.c.) of the serum ought to be used. Although we are not in a position to ascribe to the pest serum such absolute effectiveness as the diphtheria serum has, we have no doubts as to the value of the former remedy. The following fact illustrates most closely the value:

A series of experiments was conducted in an isolating hospital in Tainan, Formosa, with a view of comparing the results of serum inoculation with those of extirpation of bubos and systematic treatment. Of the fifty-six patients operated on, thirty-five (62.5 per cent.) died, while out of the same number of patients treated with the serum death rate was 34 per cent. From these experiments it is seen that the power of the serum reduced the death rate considerably.

That the most effective way to save the patients is to resort to both serum inoculation and extirpation of bubos at as early a stage as possible has been demonstrated by the experiences so far obtained during the epidemics in Japan.

Rats as Propagators of Plague.—The fact that the rat is closely connected with the plague outbreak at all times and places has been evidenced and admits of no dispute. The epidemics in Japan have been invariably traced to this animal. Obviously rats have a high susceptibility to plague; their habits, too, brings them constantly in contact with filth which conveys the plague germ; and they feed upon one another. These facts must favor to spread the plague. The discovery of human victims of pestilence is almost invariably preceded by the discovery of the plague infected rats. Hence, the killing of rats must be resorted to as the first and most important step in the prevention of the epidemic. In the first epidemic in Osaka and Kobe the ravage was gradually stopped by urgent efforts directed at the destruction of rats; and that in Tokyo and Yokohama was confined to a small area by the strict enforcement of rat killing measures. The number of rats killed in Tokyo since 1900 up to date amounts to the enormous figure of 4,820,000, that is to say, an average of 800,000 a year. In other words, if these dead rats were laid side by side they would fill the length of seventy-five miles. The price paid by the local government for these rats, which are bought from the people, as aforesaid, amounts to 160,000 yen, that is, in Tokyo city alone.

The rat tribe, however, increases at an enormous rate. In a month after pregnancy more than five young ones are, as a rule, born from a single pair. Each young rat reaches puberty and pregnates at the age of three months. They thus multiply by geometrical progression; and if rats be destroyed by artificial means the destruction only lessens the struggle for existence, and the rate for multiplication redoubles. In Tokyo more than 4,800,000 rats have been killed, yet we can hardly notice any considerable decrease in the numbers of the animal.

For killing rats in Japan, such poison as arsenic and phosphorus, together with traps, are chiefly used. As the Daniz's bacillus, which may

FIG. 8.—Disinfecting pouches of rice by exposure to sunlight.

be effectively used for killing field mice, has been found futile for house rats, we do not use it now.

As to the disposal of rats for plague prevention some one has offered the following suggestions: The rats most prevalent in human habitations belong to the species of *Mus rattus*, which unfortunately is most liable to be attacked by plague. There are others, however, belonging to the species *Mus decumanus*, which has a comparatively great power of resistance against

plague. The latter species is a great enemy of the former, hence by letting *Mus decumanus* increase its number the plague conveying rats could be greatly extinct. Such a suggestion appears to be impracticable, for from my actual observations it is evident that so far as the epidemic in Japan is concerned the kind of rats has had very little to do with propagating plague. The result of zoological researches, moreover, tends to confirm the fact that, although there are found these two species of rats distinctly marked, the rat most prevalent in Japan is a mixed race between the two, which is also susceptible to plague. Such facts rather contradict the assumption that the two species are natural enemies to each other. The suggestion, therefore, can hardly be made the basis of plague preventive measures.

The best way to treat rats in connection with plague preventives is not to permit them to remain or to expel them from human habitations. For this purpose I suggested that all buildings be rebuilt according to a proper plan. This particularly applies to the Japanese house, which is in most cases built of wood, as such buildings are liable to give quarter to rats. I understand that San Francisco is planning a reconstruction of its Chinese town. I most highly approve of such a step in view of the situation of that port, which is constantly threatened with an intrusion of plague. In several tropical countries, too, the cause of the recent fortunate decline of plague epidemic may, I believe, be attributed chiefly to the rebuilding of the cities since they came into possession of a civilized nation. In Japan such insular territory as Formosa, which has been invaded by the plague, is now being attended to by the sanitary officials, and the buildings in the central part of Taihoku city have been reconstructed so as to keep the rat tribe out. As a consequence the ravages of the pestilence are now practically confined to the villages or groups of unsanitary habitations belonging to the natives, who live with the rat tribe, and permit the animal to flourish.

FIG. 9.—Zinc wall.

The following table demonstrates the fact that during a plague epidemic the number of infected rats found runs parallel with that of the patients discovered:

	Osaka.		Kobe.	
	Patients.	Infected rats.	Patients.	Infected rats.
May	1	0	0	2
June	0	0	0	0
July	0	0	0	0
August	0	0	2	3
September	0	5	8	1
October	6	39	4	17
November	45	119	36	151
December	82	634	40	405

The number of rats examined last year in Osaka amounted to 1,195,116. Of these nineteen infected rats were found previous to May, making the total of 816 infected rats. In Kobe 553,616 rats were examined, of which the number of infected rats found were 579 as in the table. From these it may be inferred that the frequency of infection bears a direct proportion to the number of infected rats found, and that the extent of the epidemic may be approximately known by the extent of the localities where infected rats are found.

Our attention is particularly directed to the fact that the fiercest ravages in every epidemic are found in winter rather than in summer. This may be due to the resistance offered by the plague germ to cold and dryness—nevertheless it appears to be a point needing consideration. A particularly interesting fact is that both in Osaka and Kobe the number of infected rats found during the last two months of 1905 was a considerable one as compared with the number of plague patients. Also the statistics up to the end of January, this year, have this remarkable feature: that there were 481 infected rats against six patients in Kobe, and 430 infected rats against sixteen patients in Osaka.

On the occasion of the present epidemic I had an opportunity to make close observations on the prevalent conditions, and discovered an interesting fact concerning the habit of the rodent. Rats generally live on the ceiling below the roof, but in winter they change their abode. Their winter abodes are in the ground just below the floor. The ground is dug one foot or two deep; and the openings on the surface give us a hint as to where the rat killing sanitary measures should be applied. When such openings are dug out and examined, rats in considerable numbers are invariably found. It appears that the rodent, like some lower animals, adopts a subterrestrial life in winter. And as their habit is gregarious and far away from human beings, if a number of dwellers in common are exposed to an infectious disease, a great number must fall victims of the contagion, while the occasions of infection for human beings are relatively much fewer. Again, as it is a habit of rodent that the weaker are constantly menaced and frightened by the stronger, those that have been weakened by the plague have to be constantly on the watch against pursuers, and as the weakened rats have no strength to climb fences or mount to any considerable height, they are obliged to wander about the surface of the ground. This gives the cause of the large number of infected rats as compared with human patients during a winter epidemic.

It is apparent that the rat killing measures must of necessity involve application of biological knowledge bearing on the rodent. Our knowledge in this respect is yet to be perfected.

The rat killing methods of to-day consists of poison and traps. Such methods have only a temporary effect, and cannot be taken as a means of permanently rooting out the evil. As is well known, the destruction of rabbits in Australia had a permanent effect, and we have much to learn from the method involved. It was based on the fact that the rabbits are polygamous animals, and that if therefore as many females as possible be destroyed by artificial means, there will, therefore, be a struggle among males for the possession of females. The result of such a practice cannot of course be expected in a brief period, nevertheless it is of a permanent character. I suggest that something of this nature be planned for the destruction of the rat tribe.

Conclusion.—In conclusion I should like to suggest here what I consider as an ideal plan for fighting plague. I believe that the fatal pestilence, however obstinate in its ravages and terrible in its effects, can be fought and vanquished by the persistent efforts of man. I also believe that where human endeavors backed by money are determinedly directed against any object, nothing can remain unyielding. But the efforts, however laborious, and the money, however vast, can be of no value unless they be accomplished by wisdom—I mean the application of the scientific knowledge. The danger of intrusion of plague through open ports must increase in proportion as international commerce progresses and maritime enterprise advances. Again, where man fixes his abode the rat tribe accompanies him to share it; and the unwelcome creature becomes the cause of the dreadful evil. In ports where vessels from infected regions frequent, an epidemic of pestilence may not be difficult to fight out. But if it should be that ravage after ravage is going to be spread through fresh cause of importation, the task becomes rather cumbrous. involving the expenditure of vast amounts of money and tedious efforts. In regions like India and South China plague appears to be deeply rooted, prevailing almost incessantly for several years, and producing each year more than 200,000 patients. It is apparent that we cannot avoid the danger of intrusion of the pestilence at any moment so long as we do not cease intercourse with these regions. To be content with merely placing quarantine on the incoming vessels from these places, or enforcing rat killing sanitary measures in the open ports, seems to me a very poor means. Why not extend them to the source of the danger and destroy the cause of the evil permanently? Plague is not only objectionable to the people of one locality, but it is an enemy of mankind. All the civilized nations have to fight this common enemy. I believe that there ought to be an international conference to discuss a plan, collect money, and organize an international army to fight and vanquish this disease from the surface of the earth. The expedition should be sent to the regions of India and South China. The expense needed for such an enterprise would be only a small part of what the civilized nations are spending for their armies and navies; or the money spent in every country would suffice for the preventives of the pestilence.

THE OPERATIVE TREATMENT OF INFANTILE PARALYSIS, WITH ESPECIAL REFERENCE TO NEUROPLASTY.*

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No type of deformity, when the paralysis is of wide distribution, calls for more of our sympathy and of our best endeavors in its treatment than cases of anterior poliomyelitis.

In very many instances, with the exception only of the more common monoplegias, one sees a splendidly developed child otherwise healthy with a shriveled pair of paraphlegic lower extremities.

In a recent series of 149 cases observed at the clinic at the Hospital for Crippled and Deformed Children, forty-six, or very nearly one third, had paraplegia, and this, of course, means, with our present therapeutical knowledge, a life long dependence on more or less bracing to permit, at best, of labored and halting locomotion. Are we doing enough operative treatment in these cases, and are we, as a rule, working in the right direction, striking at the root of the evil, and repairing the cause of the condition?

The majority of orthopædic surgeons would probably answer that the cases referred to them are deformed and require surgical treatment before suitable braces can be applied.

This does not answer the question, as to the paralysis, but only as to correcting the deformity. All of us recognize that much paralytic deformity is unnecessary, and could have been prevented by early massage, the stretching of the unopposed muscles, and use of proper appliances to maintain the proper anatomical alignment of limb and trunk.

Further, we orthopædic surgeons are all agreed that nothing stimulates growth, power, and development of both bone and sinew, more than physiological functional use, and yet we meet those, in the profession, too, who claim that braces produce only atrophy, and it is much better to let the child get along as best it can without them in vicious positions. This many do, with resulting distorted members, showing the most extreme grade of atrophy seen, which we by operative measures are expected to obtain satisfactory results for.

Before speaking of operative procedures I wish, therefore, to go on record as advocating the early use of braces and in fact the use of braces in all cases in which the lost balance of power or the effect of gravity may lead to distortion, with or without surgical intervention.

The operative procedures of which we avail ourselves in infantile paralysis may be divided into: Tenotomy, myotomy, tendon transplantation, muscle transplantation, arthrodesis, astragalectomy, osteotomy, and nerve anastomosis or grafting.

Of the first two named nothing further need be said, as the procedures have been of such common performance since 1831 in the days of Del-

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pech and Stromeyer, and orthopædists daily now employ them the world over in correcting deformities by severing the over active muscle; this over activity due to a paretic condition in its antagonist or antagonistic group is explained by Seligmüller's theories. These operations are of distinct benefit in that they restore the normal alignment in the members, but require as a rule some mechanical device to prevent recontracture.

Tendon transplantation or transference first popularized by Nicoladoni abroad, and in this country by Goldthwait, gave us hope that the attachment of the distal tendon of a weakened muscle to one still alive and functionally active would help restore support and use to the paralysed tendon, but only in rare instances have these cases yielded results, which enabled the patient to do without artificial support. Dane's statistics of fifty cases from the Children's Hospital, Boston, were discouraging.

By means of the new method of Lange, as it is called, in contradistinction to the older method of Nicoladoni, one sutures the tendon to the periosteum, or actually passes the tendon through a bony canal and sutures its stump then to the periosteum or from the bony canal reduplicates it on and sutures it to itself, seems to have maintained the desired muscular tension much better and accomplished the aim we have in view more satisfactorily, in the writer's hands and as reported by Hoffa, Augustus Wilson, Dane, Le Breton, and others. Lange's method of elongating short tendons by means of silk sutures (preferably white), and giving these a periosteral attachment, has also yielded good results, according to Spitzy and others.

Muscle transplantations, which Hoffa employed here, especially in converting the pronator radii teres into a supinator by transference to the external from the internal humeral condyle, the sartorius into a pure extensor of the leg by suture into the quadriceps, and a portion of the trapezius into a paralyzed deltoid gave good results also. Tubby transplanted the pectoralis major into the serratus magnus satisfactorily.

Arthrodesis has many champions, including Galloway, Whitman, Dane, and Gibney, and all who have tried this procedure in comparison with astragalectomy feel that a somewhat stronger foot is obtained. As Le Breton has pointed out, this operation should not be done on children under ten, as the bones are too cartilogenous to yield good results and prevent a return of motion. Osteotomy is employed only when malpositions can be corrected by no other means.

Many are agreed that functional use and especially weight bearing should be most cautiously employed, after all of these procedures, when by means of massage, electricity, baking, passive and active motions, and the like, the member has been prepared and the muscles strengthened to bear the strain. Six months is a much better limit, and will yield much better results than the usual six weeks' interval given after the operation.

Neoroplasty has much to recommend it as striking directly at the correction of the cause of the paralysis, and especially from the very successful cures following experimental and traumatic division of nerves with primary or secondary suture, if the analogy holds good, considering anterior poliomyelitis in the relation of a pathological section of a nerve or nerves. As Hoffa put it, "If this operation fails we still have tendon grafting to fall back upon."

Cruikshank, in 1795, was apparently the first to show that a severed nerve could grow together, for in his experiments on dogs he found that if he cut both vagi death invariably followed, and if he cut one vagus and allowed three weeks to intervene before he cut the second one, the animal lived, which proved that the nerve first cut had reunited.

Flourens, in 1825, cut the nervus brachialis longus superior (corresponding to the musculospiral and radial in mammalia) and nervus brachialis longus inferior (corresponding to the median and ulnar) in a fowl, crossed, and sutured them. After some months the bird regained the use of its wing, and more than that, stimulation of the central end of the upper trunk caused movements of the lower side of the wing, and vice versa.

Philipeau and Vulpian, Bidder and Rosenthal, seemed to have proved that a sensory and motor nerve can unite and have return of function carrying both centripetal and centrifugal impulses, but Waller, in opposition to such a theory, first showed conclusively that the peripheral end of a nerve degenerated always when section was made from the central end; not only the myeline degenerated, but the axis cylinder and sheath of Schwann as well. Others had held that by immediate or primary suture this degeneration at times did not occur, and still others that the axis cylinder remained unchanged in all cases, basing their impression upon the speedy return of sensation or motion, and not upon histological examination of the whole peripheral stump, nor upon careful physiological examinations with stimulation at various heights of the nerve. This was especially so in cases of injury to the median or ulnar nerve in which surgeons considered immediate repair or peripheral regeneration had speedily taken place, when one of the collateral nerves and not the injured one carried the sensation or produced the motion.

Arloing and Tripier have shown that it is necessary to cut all four of the collateral branches in the digits of the dog before sensibility is entirely destroyed, hence the possibility of error in detecting sensation when one to three branches are cut.

The most thorough and elaborate piece of experimental work upon neuroplasty that has come under the writer's observation was that of Howell, who set at rest many erroneous views held as to nerve degeneration and regeneration from physiological, histological, and surgical points of view. A brief résumé of his work may not be out of place here.

Howell performed his experiments at the University of Michigan on twenty-five dogs and one rabbit, usually using two legs to work upon; the ulnar nerve being chosen and for cross suture the median and ulnar. The animal was anæsthetized with ether and morphine narcosis and under strict asepsis, the nerves was exposed,

lifted by a suture and either cut with sharp scissors, crushed with a tight single ligature of catgut, or coagulated by a small silver or glass cannula, through which flowed hot water at 80° C., until stimulation of the nerve above gave no contraction in the muscle below. In these three ways the connection between the central and peripheral end was broken. In suturing the cut ends together Howell used carbolized catgut or catgut in juniper oil passing two sutures through the epineurium one on each side, wounding the nerve as little as possible. The skin wound was sutured with catgut or linen thread.

Results of Howell's Physiological Experiments.—1. The skin wound healed primarily in nearly all cases, but in no instance was there primary union in the nerves, as in every case the peripheral end degenerated completely throughout its length.

2. Irritability in the peripheral stump was lost about the fourth day on an average, after the continuity of the nerve was broken, depending rather upon individual differences than the age of the dog.

3. Return of irritability never appeared before the twenty-first day after suture, but was weaker at that time than in those crushed by the ligature, as the coaptation was better in the latter than by suture, and on the other hand, coagulation by heat produced a dead area of an eighth of an inch through which the fibres had to unite, and return of irritability in these cases was delayed, and did not appear until the thirty-fifth day approximately.

4. Irritability appeared first near the nerve around the wound and extended very slowly centrifugally. This irritability was of a low degree at first and increased *pari passu,* as the histological experiments showed the regeneration of the nerve approached more nearly the normal.

5. Sensory function in regeneration appeared before motor function. This will be explained also from his histological findings under that heading.

6. Mechanical irritation was shown to excite irritability in the peripheral nerve at a lower level, below the point of suture, from the third to the seventh week of regeneration than electrical stimuli would. The methods of mechanical stimulation used were cutting or crushing with a ligature. Histological investigation showed that at these points the nerve in regenerating had reached only the embryonic stage, which begins first at the point of suture and extends to the periphery.

7. Nerves regain in regenerating conductivity to central impulses, such as reflexes, before irritability, when in the embryonic stage, before the reformation of either axis cylinders or myeline sheaths occurs.

8. The return of function, which began in the third week, was usually complete by the eleventh week and the progress was rapid from the fifth or sixth week, but slow up to that time.

9. Theoretically short fibres from the point of suture would degenerate centrifugally sooner than longer fibres, but this seems dependent upon the degree of perfection in coaptation, and it is irregular.

10. Anastomosis between a central end of one nerve and the peripheral end of another nerve gave a successful result, but the time consumed in regeneration was apparently longer.

Results of Howell's Histological Experiments.—Time will not permit of detailing the painstaking weighting in physiological extension, methods of teasing, sectioning, and staining, nerves for microscopical study, but suffice it to say, he examined in all cases the central stump above and the peripheral nerve at several points below the suture and was able thereby to note the regular method of centrifugal regeneration. His conclusions, however, are:

1. After complete severance of connection with the nerve centres the peripheral end of a nerve suffers degeneration throughout its entire length; this begins on the fourth day, histologically at the same time physiological loss of function is apparent.

2. The degenerative changes and subsequent regeneration take place as follows: (a) Segmentation of the myeline and axis at the intersegmental lines. (b) Proliferation and migration of the internodal nuclei. (c) Secondary fragmentation and absorption of the myeline (and contained débris of the axis) most active in the neighborhood of the nuclei. (d) Increase of protoplasm round the nuclei, forming finally a continuous band of protoplasm, lying in the old sheath (about the fourteenth day after suture and when the trophic stimulus is apparently obtained from central connection). (e) Formation of a new sheath on the periphery of this band, thus making "an embryonic fibre." (f) Union of "the embryonic fibres" of the peripheral end with those similarly formed in the central end, the union taking place in the intervening cicatricial tissue. (g) Formation of myeline in the peripheral end as isolated drops and usually seen first near the nuclei. These afterwards unite to form a continuous tube. The formation of the myeline proceeds centrifugally starting from the wound. (h) The outgrowth of new axes occurs from the old axes of the intact fibres of the central end, the outgrowth following quickly upon the development of the myeline. (i) In the central end, especially when connection with the periphery is not made, several new fibres may form within the sheath of an old one to take the place of the portion degenerated. Each of these may develop myeline and receive a branch from the axis cylinder above.

In reviewing the literature of eighty-four cases, reported by surgeons, thirty-five cured, thirty-four improved, and fifteen failures, those in which primary suture with recovery of sensation and motion in an incredibly short time was claimed, Howell shows that in many instances their conclusions were erroneous, owing to the fact that the sensation was obtained too early and was due to embryonal fibres or to collateral nerves, and in the case of motion the power came from the nerve above the point of section, but concludes that:

"1. The prognosis of cases of primary nerve suture is very favorable; in all probability function will be restored either completely or partially.

"2. The prognosis is more favorable the younger the patient.

"3. Some form of animal suture is to be preferred and the majority of surgeons employ the direct method of nerve suturing.

"4. The clinical as well as the physiological evidence is against the possibility of immediate union."

In eighty cases of secondary suture with thirty-one cures, forty-one improved and nine failures, Howell comments on "how few cases are followed up for a sufficient time for positive information, and much data is lacking in regard to motion, but improvement is almost certain and complete success may be expected."

The case of Jessop cited was particularly interesting in which nine years after division of the ulnar, suture was done with silk in a nineteen year old girl, and after fifteen days return of sensation was noted except at the tips of fingers. After nine months her hand became quite useful and sensation the same. Of five cases of injury and secondary suture of nerves of the lower extremity four were of the sciatic and one was of the popliteal. Of the cases of suture of the sciatic, one was "successful," sensation and motion being reported as normal at the end of two years; two were improved. In one an old ulcer (trophic) healed promptly after suture. One was a failure. In the popliteal case, sensation returned in a few months, and motion in three years. Howell explains the longer time required for

motion to return by the necessary reformation and regeneration of the nerve plates in the muscles.

These studies would certainly lead us to hope for similar successes in the attachment of peripherally paralyzed nerves to centrally living ones in infantile paralysis, although we must bear distinctly in mind that often the adjacent nerve, from which we hope to obtain central connection, is also impaired in function by the disease.

Spitzy's work, while not so thorough or explicit as Howell's, is along the same line, but with infantile paralysis more in mind. Spitzy also emphasizes the fact that a small nerve with central connection may neurotize a large peripheral stump. Spitzy seems to favor the indirect anastomosis for fear of injuring fibres of an intact trunk, while from Howell's experiments and the surgical literature reported by him and the more recent cases, including Sick's and Sänger's, Faure's and Furet's, Manasse's, Kennedy's and Cushing's, the best results were obtained by direct implantations of axis cylinder to axis cylinder, if we may so express it, and not by putting the peripherally dead nerve into a slit in the living central nerve. Thus, if we can select a living nerve of less value in which we can sacrifice the peripheral end, and anastomose our paralyzed nerve end to end into it, our result should be more likely to be what we desire. Next to this if we can vertically split a living nerve, cut transversally a central stump on it, and to this attach our peripheral nerve end to end our results should also be good, but by this of course a portion of the distribution of the living nerve would be practically sacrificed, at least for a time, until new axis cylinders grew into the severed formerly living, but then degenerating portion of the peripheral nerve.

These methods seem to the writer to have a much firmer physiological and histological working basis, than the insertion of a dead peripheral nerve in a vertical slit in a living one.

The question of when to attempt a regeneration in infantile paralysis is important, as we have all seen cases clear up or practically recover within a year after the attack, owing to certain of the anterior multipolar cells in the region of the myelitis being "put out of business" by the œdema incident to the inflammation. If we are to assume that recovery occurs in certain cases by the outgrowth, if we may so express it, of new nerves from the cord, such recovery must consume years, as Howell has shown us that recovery after suture requires a much longer time to neurotize a long degenerated peripheral nerve than a short one. It would seem therefore advisable, soon after the beginning of the second year with no improvement, to attempt neuroplasty into a nearby nerve. Young's argument that if the reaction of degeneration were present he would not recommend the operation, cannot hold. For if the reaction of degeneration were not present, we would be unwise to consider the operation, as the nerve would be likely to recover spontaneously.

The reported cases of nerve anastomosis for infantile paralysis are few in number.

Peckham was the first to do neuroplasty in this country, so far as the writer knows for the relief of anterior poliomyelitis. In both of his cases the paralysis was of the peroneal group. Branches from the internal popliteal were inserted into the external popliteal. Improvement was noted two or three months after operation and in one year the improvement was still more marked.

Young reported a case of three years' standing of right paralytic valgus with inability to flex and adduct the foot. He inserted the anterior tibial nerve into a slit in the musculocutaneous nerve on December 4, 1902, and on December 17th he states there was slight return of power in the anterior tibial muscle, after thirteen days. Howell, it will be noted here, found irritability on the twenty-first day on an average (embryonic stage), and that return of irritability to the sensory fibres (twenty-one to thirty-five days) is in advance of that to the motor fibres.

In June, 1904, two years and a half after Young's operation, Dr. Spiller examined his case and found all the muscles of the anterior tibial region gave a good response to a slowly interrupted Faradic current. The response of the anterior tibial while fainter than the others could be detected by the hand.

The writer has at this time, but two cases which he wishes to report, sufficient time having elapsed to note improvement, his remaining cases being reserved for a subsequent paper.

CASE I.—E. F. G., aged five years, admitted to the Hospital for Crippled Children on February 11, 1903.

Family History: Brother died a few days after birth of cerebrospinal meningitis, otherwise negative.

Previous History: Excellent health up to two and one half years of age; walked and talked at thirteen months, but had three convulsions at one year of age (teething). Bottle fed on cow's milk, Mellin's food, condensed milk. Had none of the diseases of childhood.

Present Illness: It began when the child was two and one half years, she then had a supposed attack of rheumatic fever, diagnosticated also as spinal meningitis. She had a fall from the porch, striking the back of her head; two days after (July 31, 1900), she had a high fever and broke out with heat (very hot weather at the time), being sick twenty-one days. The head was retracted, marked paræsthesia. On the day after the fever ceased she could not stand nor walk, nor has she since. Arms and neck partially paretic. Some pain in knees, and the back had to be supported. Neck and arms soon recovered (after two weeks), but the back has remained weak, so that she easily loses balance, but can sit up unsupported. Bowels paralysed at first and had to be emptied by enemata. No loss of control of sphincters.

Physical examination, made on February 11, 1903: Paralytic talipes equinovarus, equinus element most marked, except when standing. Legs of equal length, but left thigh and leg show greater atrophy than the right. Child is unable to walk, crawls around the floor with fingers much flexed and uses ball of hands as pads. Callous on knees. Reflexes are abolished in both legs, and there is no response to faradic stimulation on the anterior and lateral aspect of the left leg, and weak on the right; she can flex the toes in both feet.

Operation, performed on November 9, 1904: I incised down upon the external politeal nerve of the left leg, severed it at the bifurcation of the sciatic, and sutured it with intestinal silk longitudinally in a slit in

the internal popliteal at the centre of the popliteal space. The skin wound was closed by a subcuticular continuous silver wire suture.

A previous operation I had done in February, 1903, of tendon transplantation in both legs running the tendon of the peroneus longus through and suturing to the anterior tibial muscle. Tenotomy of both achilles tendons.

December 20, 1904 (forty-one days). The child seems conscious of more power in left foot and increased sensation and warmth.

February 8, 1905, she can dorsally flex toes to a slight extent (ninety-two days). July 2, 1905. Patient discharged, still wearing double paralytic braces, but has a distinct gain in power in the left leg and response to faradism in the peronei.

Case II.—B. K., age twelve years, admitted to the Hospital for Crippled Children on August 12, 1905.

Family History: Father has chronic articular rheumatism. Otherwise negative. History obtained from a sister of charity, who knows little about her.

Previous History: Delicate as baby. Negative otherwise.

Present Illness: Began ten years ago with high fever and vomiting. Fever continued three to four days. Then it was noticed that left leg was limp and useless. Patient has improved to some extent, but has limped badly since. She has frequent spells of indisposition, and suffers with pain in ankle and knees in damp cold weather.

Physical examination, on August 12, 1905: Frail, delicate child, very pale and anæmic looking. General physical examination negative, except left talipes equinovarus, and paralysis of the peronei, anterior tibial, and extensor groups of muscles, which have no voluntary power, nor irritability to electric stimili (slowly interrupted faradic). Deformity is of second degree, and can be partially corrected manually. There is no power of abducting nor dorsally flexing foot, nor of extending toes. Reflexes are abolished.

Operation performed on September 2, 1905. Tenotomy of tendo achillis, plantar fascia, abductor pollicis, and tibialis anticus (through lateral puncture). Then incision made over biceps tendon and external popliteal nerve exposed, divided, and transplanted centrally into a portion of the internal popliteal, end to end.

October 28, 1905: General condition excellent. Child has gained in weight and has good color; marked improvement in local conditions, can wiggle toes slightly (fifty-six days). December 31, 1905: General condition, splendid. Patient is greatly improved by stay in the mountains, still wearing plaster cast on left foot. She can slightly abduct and dorsally flex foot and extend toes (120 days). Sluggish response to slowly interrupted faradic current. Measured for brace and discharged to return to dispensary for inspection and treatment.

In conclusion. I think we can say: That neuroplasty for infantile paralysis, does yield after three months some positive results, provided we get good coaptation, without tension or hæmorrhage, in suturing end to end if we can judge by Peckham's, Young's, and my cases, and if the analogy to secondary suture for nerve traumatism holds good.

That these results progressively improve after a year or more has elapsed following the operation has been shown.

That wider experience, improvement in methods, the choice of case, and power giving nerve should further improve the results.

That earlier operation and its more frequent employment in the milder monoplegiac should give an approach to cures. Jessup's successful secondary suture after nine years of paralysis shows us, however, that even at this late date regeneration is possible.

That more careful notes, examinations as to irritability and conductivity made at periodic, daily, monthly, and trimonthly intervals in a large number of cases would do much to thrash out this question for therapeutical statistics.

That while this paper does not claim perfect cure for nerve anastomosis, still the improvement gained is an argument that it is worthy of investigation. The procedure can do no harm, if conservatively done.

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GONOCOCCIC INFECTION IN WOMEN.*

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That the gonococcic infection of women is one of the most, if not the most important question before the medical profession of our country and the world to-day must be admitted by all physicians who have intelligently grasped the situation, as it has been presented to us, very largely, by committees appointed to investigate and report upon its consequences, by New York medical, sociological, moral and legal societies.

No attempt will therefore be made in this presence to prove by long arguments, much statistics, or frequent quotations from distinguished authors, the facts which well informed physicians everywhere

* Read before the Section in Obstetrics and Gynæcology of the New York Academy of Medicine.

are compelled to admit, in the fifteen minutes allotted to me to that phase of the question which I have been invited to discuss. One cannot resist the temptation, however, to recall to your attention, very briefly, some of the reasons why this subject ought to engage the thoughtful attention of all good men, and also of good women, notwithstanding the strange silence of the sanitary, public health, and hygienic societies, upon the prevalence, destructiveness and demoralizing effects of this wide spread infection. Gonococci infection is more general throughout the world than any other infection, except measles, with which we have to deal. Not less than ninety per cent. of the men in the larger cities of the world are said to have, or have had gonorrhœa.

This infection is the cause of at least fifty per cent. of the female and much of the male sterility which we are practically unable to cure. It causes from twenty to fifty per cent. of the blindness of children whose eyes are infected chiefly during delivery. Before the adoption of the Crede method of immediate treatment the proportion was still larger. Gonorrhœa is as potent a cause of abortion as syphilis, and should an infected woman succeed, as many do, in giving birth to one child, the uterus after parturition is in such a receptive state that an ascending infection from a previously infected cervix, especially when associated with septic germs, streptococcus or staphelococcus, may speedily so cripple the uterus and its annexa as to destroy forever that woman's conceptional capacity.

The germ of Neisser then becomes one of the most potent, though unintentional causes of race suicide, on account of its direct mortality from pelvic infections, the causing of many abortions, and also, in destroying the conceptional capacity of so many women, and the impregnating capacity of so many men. The Committee of Seven of the American Medical Association brought to light much valuable information on this subject in response to its circular letter of inquiry to the leading gynæcologists of the world in regard to the effect of gonococcic infection upon the female pelvic organs in cases coming under their care. The answers came back thick and fast that more than one half of their abdominal sections were required on account of this cause, while some, notably Dr. Price and Dr. Humiston, declared that over ninety per cent. of their abdominal operations were for the relief of women suffering from gonococcic infections of the uterus, tubes, and ovaries. Mann, of Buffalo, as well as several textbooks, assign this cause for nearly all pus tube operations, and not a few authors recommend panhysterectomy in all cases where gonorrhœal pus tubes require removal. Writers now maintain that an enormously large number of married women are being infected by their husbands, some, and let us hope most of whom supposed themselves cured before marriage. One of the points which is crying out very loudly at this present moment for settlement is, when can we say a man who we know has had gonorrhea, is so thoroughly cured that we are willing to assume the responsibility of giving him our professional opinion, that it is perfectly safe for him to marry. Some say six months after the disappearance of all symptoms, others say as many years, and still others, followers of Noeggerath, say that chronic gonorrhœa in the deeper portions of the urethra, may never be cured, "that once infected always infected," and that the excesses and excitements of the newly married state may revive into virulence germs which had been latent for years.

According to Wertheim, latent and quiescent gonoccoci to which a man's urethra had become acclimated, may be dislodged soon after marriage, and his wife infected by these malicious, rejuvenated germs, and she, in turn, can give her husband a recurrent attack of his own original disease. Before the discovery of Neisser these infections and reinfections were the cause of not a few divorces, and an occasional suicide.

This subject is important again on account of the numerous invalids, both of high, as well as low degree, produced by such a latent or chronic gonococcic infection of their pelvic organs as have not led up to mutilating or sacrificial operations, but are never the less causing these sufferers to pass most of their time upon the sofa or in bed, unable to perform their social or domestic duties, and remaining perpetual and uncured invalids the balance of their unprofitable lives.

The consensus of opinion is that two thirds of all the cases of infection of men come from public, and the remaining third from clandestine prostitutes. It is estimated that there are more than half a million resident public prostitutes in our country to-day, and an equal, if not greater number of the clandestine variety exist also; thus offering a million opportunities for our young men to acquire this disease any day in the year. The age at which most infections occur is from eighteen to twenty-five. Between these ages will be found most of the female prostitutes as well. The average life of a public prostitute is about five years. 40,000 of these women die annually, and thirty per cent. of this number lose their lives every year as the direct or indirect result of gonococcic infection. It is now believed by many writers that gonorrhœal infection which is so destructive to the ciliated epithelium of the Falloppian tubes, is one of the most frequent causes of ectopic pregnancy, with all that implies.

Is there any disease, or group of diseases, against which such grave charges can be brought, and about which so little is being done to arrest its truly horrible ravages?

A great battle in which a thousand soldiers are killed or wounded excites the sympathies of the civilized world, an epidemic of cholera or yellow fever fills the newspapers with hysterical editorials which every one reads. The wreck of an ocean liner, or a mine explosion strikes horror to the entire reading public. The crusade against the great white plague has now many participants who give liberally of their time and money to prevent the annual harvest of death amounting to more than 100,000 victims, but where are the philanthropists, sanitarians and legislators who are listening to our warnings of greater social perils concerning the great black plague which are causing a greater demoralization and depopulation of our country than all these other causes combined.

The Committee of Seven in their report to the American Medical Association after referring to the public awakening on the deadly effects of tuberculosis and alcoholism, proceed saying—only against the third curse of humanity—venereal dis-

eases, there is a lack of action, a sin of omission, almost as bad as the sin of commission of sexual profligacy. The legislator does not legislate, the registrator (of the boards of health) does not register it, the hospital does not house it. As Bulkley puts it: "Ignored through ignorance, neglected through negligence of duty; so, ostracised and outclassed, venereal diseases through ignorance, false shame, concealment, prejudice, carry on their slaughter unhampered, devastating coming generations, and ruining the present one."

By the treatment of the gonococcic infection of women—I presume, is meant the infection, principally of their pelvic organs. The general infections such as gonorrhœal rheumatism, infections of the joints and serous membranes, meninges of the brain and spinal cord, etc., being alike in both sexes, would naturally not be included in this symposium discussion to-night.

Since the discovery of Neisser in 1879 nothing has been considered gonorrhœa, which was not caused by the gonococcus, and everything has been recognized as gonorrhœl, in itself, in which the germ has been found. The gonococcus has pushed its way into so many different parts of the body, that gonorrhœa is already being spoken of, by some writers more as a constitutional, than as a local disease.

Through gonorrhœa is chiefly a mucous membrane disease, and travels along and infects mucous membrane lined channels and cavities as a rule, it does, under favorable conditions penetrate the deeper tissues, and is carried by the blood stream and lymphatics to distant parts of the body. How else would we find the gonococcus in the pus of a superative synovitis of the knee joint, or in periscrotal and ischiorectal abscess?

As the chief danger to the woman lies in the ascending gonococcic infection, which is liable to involve the tubes, ovaries, and peritonæum through the uterus, or the bladder, ureter and kidney through the urethra, every consideration demands the most thorough, energetic, and curative treatment of the acute attack, before the vaginal or cervical disease could spread upwards.

Our only certainty of complete arrest of the infection, and thus preventing the involvement of the endometrium, tubes, and ovaries, lies in the utter and complete destruction of all the gonococci below the internal os. If any are left alive in the folds or rugi of the vagina or cervical canal, they will be able to reinfect those mucous membranes for a very indefinite length of time. Unlike the infection in the male, where the germs linger for some time in the anterior portion of the urethra, unless pushed deeper down by unwise treatment, the woman's primary infection is in, or about the cervix uteri, conveyed there with the ejaculation of the seminal fluid, and from that point infection may extend both upwards and downwards.

We should bring our consciences as well as our medical knowledge to bear on the treatment of these cases, and never pronounce a woman cured, as long as the microscope can show her capable of extending her infection to her pelvic organs, or of communicating the disease to any one else.

Much of the subsequent physical suffering, social and domestic unhappiness, as well as scandal, has arisen from ignorance or neglect of the well defined history, and powers for evil, of the gonococcus.

We should treat every gonorrhœal woman with the possibility always present in our minds, that she may become one of the eighty per cent. of deaths from female pelvic disease, which the Committee of Seven declare are due to gonococcic infection.

The arrest of the discharge, and the disappearance of gross symptoms in either sex, are not sufficient evidence of cure, as was formerly supposed, to enable us to give an honest or correct professional opinion, that all danger of further infection is passed. The more we know of the latent powers for evil of the gonococcus, the more we should strive by the most thorough and long continued treatment, or observation, of our patients to prevent this diabolical germ from hiding itself away in any of the folds or crypts of the vaginal or cervical mucous membranes, cervical or vulva glands, and there hibernating, as it were, ready to spring into a renewed virulence, under favorable circumstances, for its redevelopment or rehabilitation.

Pregnancy may occur through an infected vagina and cervix, the general evidence of this infection may disappear during gestation, no reinfection may occur during the pregnancy, still, the fact of the newly born child developing gonorrhœal ophthalmia and the mother gonorrhœal pus tubes, compels us to believe, that latent gonococci have hibernated for nine months in the region of the cervical mucous membrane, were developed into virulent activity during the parturient process, and got in their destructive work, both upon the conjunctiva of the child during labor and the endometrium of the mother, during the puerperium. Not only do the eyes become infected, ending in thousands of cases of blindness annually, but in breech deliveries, we have many cases of gonorrhœal vulvovaginitis of children to treat. This latter condition becomes a sad chapter by itself, not by any means always tracing its origin to infection during parturition, but in subsequent infections from a variety of sources.

The exclusive medical treatment of the gonococcic infection of the women consists in the use of such remedies and such management of the patient, as will attempt the cure of all the infection below the internal os, and thus prevent any ascending involvement of the endometrium, tubes, ovaries, and peritonæum, bladder or kidneys.

We actually find few cases of gonorrhœal vaginitis to treat. The vaginal mucous membrane being protected partly by its own germicidal secretions and its peculiar anatomical formation.

The internal os acts somewhat as a bar to the passage of vaginal and cervical germs into the cavity of the uterus, even more, but somewhat on the same principle as infection of the urethra, frequently does not extend to the bladder. In both instances unwise treatment during the acute stage, more often results in carrying cervical and urethral germs upwards into and infecting the uterus and bladder.

For the purposes of cure and the prevention of an ascending infection, a woman with gonorrhœa really ought to be put to bed, at perfect rest, her bowels frequently opened with saline purgatives, her diet being chiefly milk, with other bland and non stimu-

lating food. The chief points to be regarded during the first week of an acute infection would be rest in bed, milk and bland diet, perfect cleanliness, and to drink large quantities of water.

Upon the subsidence of the acute symptoms the mucous membrane of the cervical canal with its germs could be destroyed with silver nitrate, carbolic acid, the actual cautery, formalin or the sharp curette followed by a strong solution of the mercuric bichloride. The vaginal portion of the cervix should be painted over with one of these strong germicides, the vagina if not infected, or even if it were, should be thoroughly irrigated with a strong solution of potassium permanganate, or ichthyol and glycerin, and then packed with iodoform gauze. This or a similar treatment should be continued and frequently repeated as long as the microscope could demonstrate gonoccoci in the secretions or discharges. More than usual attention should be given to the vaginal injections to insure the contact of the medicated fluids, with all the vaginal folds. Nothing but its occasional complete dilatation, in which the canal is filled, and the fluid prevented for a while from escaping by occlusion of the vulval opening, will accomplish this. The use of silver nitrate or Churchill's tincture of iodine, may be required to destroy vaginal germs, following up their use by copious and frequently repeated vaginal astringent and antiseptic douches.

Urethral gonorrhœal infection should be treated gently but frequently. Copious urination induced for the washing away of as many gonococci as possible, and by gentle instillations of some germicide. The glands of Skene and the ducts leading to them are famous places for latent hibernating gonococci, and nothing but their complete destruction will prevent recurrent attacks of the original disease. The same is true even in a larger degree, of the vulvovaginal glands, and their ducts. If germicidal instillations are not curative, these ducts may have to be slit open and curetted by the surgeon, and the glands dissected out, or otherwise destroyed.

Recurring abscesses of the Bartholini glands are usually of gonorrhœal origin, and their discharging pus explains recrudescences which, until understood in recent times, were supposed to have been caused by fresh infections from male consorts.

In closing the following is quoted from a paper read by the writer before the Washington Obstetrical and Gynæcological Society in 1904: "These cases should no longer be left to the inefficient treatment of drug clerks, medical students, and irresponsible persons. General hospitals should no longer refuse to admit venereal diseases, and skilled physicians, recognizing the great importance of this question, should no longer regard it as beneath their dignity to attend them."

The majority of patients who are among the poorer classes, are not infrequently compelled, on account of the almost prohibitive charges of reputable physicians, to consult cheap, unskilled persons, and the advertising quacks. One of the consequences of this unwise attitude of the skilled physicians is that the unfortunate victims of gonorrhœa are only half cured, and are permitted to go about, thinking themselves entirely cured, because of the disappearance of their gross symptoms, and are consequently left in a condition favorable to the further contamination of themselves or of innocent persons of opposite sex.

According to Dr. Joseph Price there are more and better reasons for locking a man up in jail while he has gonorrhœa, than there are to incarcerate a common murderer. In one case there is only one victim, and that victim is dead, in the other case there may be a dozen or more innocent women infected and doomed possibly to unsexing surgical operations, to lose their lives, or to untold suffering and sorrow as long as they shall abide.

926 FARRAGUT SQUARE.

A UNIQUE CASE OF AUTOMATIC OR UNINTENTIONAL SUICIDE IN AN EPILEPTIC.

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The case in question is out of the ordinary, for the reason that suicide was committed while the person was in an automatic or unconscious state following an epileptic seizure.

CASE.—K. H. F., male, was admitted to the Craig Colony for Epileptics when twenty-one years of age. His attacks alternated between grand and petit mal, and were both nocturnal and diurnal. He had been an epileptic nine years when admitted to the colony. There was nothing unusual in the patient or in the type of his disease, except that after petit mal seizures he was invariably automatic for some minutes.

On the morning of February 23, 1906, he arose apparently in a natural condition and prepared for breakfast as usual. A nurse saw him at the time. Fifteen minutes later, when the patient had not appeared in the dining room, the nurse returned to the patient's room and found him dead. He was on the opposite side of the room from that on which the nurse had left him fifteen minutes previously. He was lying on the floor on his left side, with his head under the edge of the bed. There was a slight bruise on his forehead. His mouth and hands were deeply stained with black ink, and an ink bottle of about two ounces capacity lay on a bed near him, with the cork out and less than half an ounce of ink in the bottle. The ink was of the kind used by architects on mechanical drawings. Its odor indicated the presence of phenol and aniline oil. It also contained nitrobenzol. The patient used it in his work in the Sloyd school at the colony.

It was the impression at first that the patient had committed suicide by purposely drinking the ink; but further investigation led us to firmly believe that he drank the ink while in an automatic amnesic state following a petit mal seizure. His father came to the colony a week later and told us that on a number of occasions the boy had attempted to drink various improper things while in such a state following seizures. The following is quoted from a letter to me by the father:

"One time Karl wanted to drink blueing. My wife was washing and when she came in from the woodshed, Karl was standing on the sink with a bottle of blueing in his hand just about to drink it when my wife grabbed his hand and prevented him from doing so. It was not easy for her to remove the bottle, for while he was like that (as I have found myself) he always held what he had in his hand with much strength. He was dazed from three to five minutes, and when he came to himself and was told what he had done, he laughed and said, 'Is that so?' On another occasion he went to a shelf, from a table where he was sitting, opened a glass door, took a glass out, went to the sink and tried to get water from the tap.

I saw him and went to him. He then threw all the water out of the glass, and put the empty glass to his lips and made as though he were drinking. Two or three minutes later when he came to himself and I told him what he had done, he laughed. At times when eating his dinner he would take whatever he could get in his hands and make as though he were drinking something from a glass. It seems to me that he always wants to drink water when he gets his light attacks. We have noticed this on many occasions. I am quite sure that on the morning he died, and he was waiting in his room for breakfast, feeling that he was going to have an attack, he wanted a drink, and the bottle of ink being the only thing at hand, he drank that. I have never seen a sign in him that showed that he was depressed or melancholy in any way."

The last statement of the father agrees entirely with observations made at the colony over a long period. He was always good natured and cheerful, and never expressed within the hearing of anyone the slightest determination to do himself harm.

Many epileptics in the colony at Sonyea remain in automatic amnesic states anywhere from a few seconds up to two or three days, and even weeks after seizures of various types. During that time they are capable of performing acts of various degrees of complexity, with which they were familiar, but they are absolutely unconscious of what they are about, and it is my belief that while in this state they can do nothing new.

When some are in this state and are spoken to quite loudly, they will answer briefly, but they will have absolutely no knowledge of the conversation afterwards. I have tested this in many cases.

The coroner's autopsy in the case here reported showed the œsophagus and stomach deep black in color, shriveled and corrugated.

THE EARLY SYMPTOMS OF TUBERCULOSIS AND HOW THEY MAY BE DEVELOPED WHEN THE APPLICANT ATTEMPTS TO CONCEAL THEM.*

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The presentation of the subject in the manner in which it has been given to me is much more difficult than I had anticipated, for, although the symptoms of tuberculosis are legion, those questions which may be asked of an insurance applicant are comparatively few, and even with these I am so hedged in by the restrictions that I hardly know how to proceed.

I wish information upon the question under consideration as much as any one else—for from such a view point I find practically nothing in the books—and my knowledge must be obtained from listening to the experience of others. I shall crave pardon, therefore, for what I fear will prove a fruitless paper, and shall request that after the close of my remarks there will be frank speech from every member present.

I have asked several physicians interested in tuberculosis work for points in this little discussion, and have met from each practically the same response: "What! if you cannot take up physical signs, and the patient refuses to answer questions, what have you got to write about?" Although such a proposition confronts the medical examiner daily.

Greene, in his admirable little work on *Insurance Examination*, states that "The average insurance applicant is an unwilling witness—the physician therefore is forced to rely almost wholly upon physical signs." And yet, as regards the physical examination itself, how few applicants would allow that thorough time taking investigation which is so necessary if the truth would be determined. Or, indeed, how many of the companies demand or ever permit, practically, a comprehensive examination. The examining physician is criticised if an incipient tuberculosis case is passed as a "good risk"—and still he frequently cannot do all that his judgment considers necessary. It is the old adage:

"You shall and you shan't,
You will and you won't,
You'll be damned if you do,
You'll be damned if you don't."

I shall not make any attempt to consider the early symptoms *per se* of tuberculosis, as I take it for granted that the members present have studied the disease sufficiently well to be thoroughly conversant upon such matters, but shall rather confine myself to the question: How may the knowledge of such symptoms be ascertained from the applicant without exciting his suspicions. Or, if he is anxious to conceal his personal history, how best may it be obtained?

In this there is opportunity for the personality of every examiner to make itself felt, for in my opinion each and every applicant is a character study different quite from anyone preceding.

Broadly speaking, I separate applicants suffering with pulmonary disease into the following classes: 1, Those knowing that they are suffering from tuberculosis; 2, those suspecting that they are suffering; 3, those coached as regards answering questions; 4, those uncoached. I shall eliminate under these restrictions: 1, Those knowingly suffering and honest; and, 2, those unknowingly suffering and honest. I often consider that the instructed individual is easier to contend with than the uninstructed, for owing to his real ignorance, the positive and assumed nature of his negative answers to all questions lay him open at once to suspicion and subsequent questioning and discovery.

As regards the symptoms of tuberculosis it is almost needless to remind you that they are to be divided for your questioning into two classes: The local and the constitutional, and as Cornet states: "In the usual forms of pulmonary infection there is as a rule either one focus or isolated foci. Not before these have broken down, when the bacilli have distributed themselves further and further into the surrounding territory, and have established fresh foci, do the first clinical symptoms become manifest." And, again, quoting freely: "With the breaking down of the

* Read at a meeting of the Philadelphia Medical Examiners' Association, March 6, 1906.

tubercle there is a diffusion of soluble proteins (toxines), which are carried into the lymph stream, invade the blood, and reaching the organs produce effects which at first scarcely noticed are intensified by time."

The application of this to our work is ready when it is remembered that broadly speaking, the lymphatic activity is more rapid in the young and the toxines are spread and absorbed in a more acute manner than in the aged. Our questioning, therefore, will be in the line of more direct symptoms in those of fewer years than in that class of subjects advanced in life.

With these various symptoms I shall adopt the order as found in Cornet's work and without entering into much consideration of the symptoms themselves, consider rather how the history of any such may be obtained.

First I would caution you, however, not to excite the suspicion of the would be policyholder, for ofttimes, like the great trout of the pool, he becomes frightened at a shadow and sulks in the depths whence not the most tempting of bait may lure him.

Frequently in those cases where I by some intuition suspect, I refer in no way to tuberculosis, even in the family record, until during the physical examination some finding may bring to my mind a proper question and I can press the history home.

The Cough.—As is so well known, the cough is one of the most constant conditions of this disease, and may in those cases commencing insidiously precede expectoration by many months. It is a sign known to the laity as being associated with tuberculosis as the expression "hacking cough" is almost a bye word.

It is of course a reflex phenomenon due to the irritation of foreign bodies, or to abnormal secretion; and in the incipiency of tuberculosis is usually caused by an attempt of the structures to rid themselves of secretion at those most sensitive points about the interarytenoid spaces or the bifurcation of the trachea. On account of the small amount of material exuded the effort at expulsion is at first unproductive, and the term "dry cough" has been coined. It is therefore unwise for the examiner to directly suggest to the timid applicant any of these expressions, but rather lead up to the question. Allude to the fact that he has probably suffered at some time, or is now troubled with slight catarrh, catarrh of the nose and throat, so common with the American people, in our changeable climate. As Turban has observed: "One of our earliest manifestations of tuberculous trouble is not infrequently a slight catarrh, with hoarseness, often hardly noticed, or a tendency to cold in the head." Intimate in case of an affirmative answer that such trouble probably causes him to clear his throat in the morning, or later in the evening. A tickling sensation in the throat may exist, followed by slight attack of coughing, and the "raising" of a tiny bit of mucus.

Once, when an applicant stated that he used to sing a great deal, I asked him suddenly why he had stopped. A history of intermittent hoarseness was obtained, and the physical signs confirmed the discovery.

If the applicant is a lawyer, or one accustomed to public speaking, it might be well to ascertain if the voice grows unduly weak upon speaking any length of time, and if such symptoms be discovered, the effect of drafts, cold air, stimulants, etc.

In cases admitting hoarseness, discover if possible the occurrence of explosive cough whilst quiet, due to sudden irritation, or tickling, or inspiration. A question or two as to whether he ever wakes suddenly in the night on account of saliva falling back into the larynx, followed by a cough or two. Inquire if the applicant has a tendency to sleep on one side more than the other, and why. It will be remembered that in early phthisis the affected side may become congested in the dependent portions and bring on a slight cough which the applicant may or may not have noticed. The respiratory mucus membrane being abnormally sensitive, a sudden change from the cold to the heated atmosphere of a room, or vice versa, may induce a slight tendency to cough, or possibly an indrawn gasping. Again, the rapidity and depth of inspiration may promote irritation with the same result.

I am accustomed to request applicants of whom I am suspicious to take several long breaths, and to watch closely if there is any desire to stifle a respiratory effort, or slight "hack."

During the physical examination, if any adventitious sounds promote interest I frequently, with my stethoscope still on the chest, ask the applicant rather suddenly: "How long have you had this little cough," and by the tone of my voice indicating that there is no doubt whatsoever in my mind but that the cough exists. In this manner I have several times obtained a complete reversion of a personal history and an admission of slight trouble existing over several months.

Hæmoptysis.—The lay mind is so apt to assocate blood spitting with tuberculosis that in insurance work it is nigh impossible to extract a history of this symptom. It may, however, be attempted by an inquiry if the slight catarrh which the applicant has admitted had ever produced sufficient irritation and coughing to cause a tiny fleck of blood in the mucus. The small amount of blood asked about may deceive the person into admitting its presence, and making light of it in the hopes that the explanation will be sufficient and the symptoms overlooked. In women it has been noted that previous to the menstrual period the tendency to hæmoptysis is increased, and having this in mind, our question may be framed accordingly. If the admission of any blood has been elicited it is well cautiously to inquire if a slight cough existed for a day or two subsequently, such a record if positive to be followed up.

Dyspnœa.—With respect to dyspnœa, a symptom associated in the early stages of the disease with a rather rapid wasting due to the activity of toxine absorption, it may again be difficult to obtain record.

I am of the habit to attempt to divert the sus-

picions of our subject by a reference as to his personal habits of exercise. To find from him if he is accustomed to be in the open air as much as formerly, if he indulges in games requiring exertion, or if he is allowing his life to become more sedentary, and why. To bring the investigation by gradual advances to an admission, or denial of breathlessness beyond the ordinary, when taking any active effort. It is surprising how frequently in my tuberculosis work such a record is obtained, and how unconsciously a patient drifts along, from diminished exercise to less, until at last there comes on account of the increasing lassitude almost a repugnance to exertion.

Sometimes when questioning in this manner I have had a patient expand his chest and state that he never does get out of breath, and even in the very act I have observed a tendency to cough.

Pain.—In pain we have one of the symptoms most noticeable to the applicant, and so readily denied, a symptom frequently absent in the early stages of the disease, but in others present throughout the entire course.

It will be remembered how practically never does a tuberculous body come to necropsy with a pleura free from inflammatory points; adhesions of slight degree, etc.; and it is also known how a large majority of effusions within the pleuræ are tuberculous in origin. It can be seen, therefore, that any pain about the thorax is to be looked upon with suspicion.

At the points of most frequent early involvement, the apices and below the clavicles anteriorly and between the scapulæ posteriorly, is the pain commonly felt. Also frequently noticed in cases slightly more advanced at that area of great pulmonary excursus, the lateral basic aspect of the lungs. It is at these portions that adhesions or pleuritic roughness are most frequently found and their asssociation with pain evident.

The idea of neuralgia is not commonly attached by the laity with tuberculosis, and therefore I habitually ask the applicant during the pulmonary examination if he has ever had a neuralgia of the face or jaw, and then casually suggest that neuralgia or rheumatism are much the same, and also whether he has ever had either, of the muscles, and when, or of the arms, or limbs, or body? An applicant off his guard will often admit of pain of rheumatism or neuralgia of the thorax stating voluntarily that sometimes on deep inspirations a sharp stitch in the side may be felt, or, again, that after becoming cold a feeling of soreness is present in the side; "of no consequence at all," he may hurry to add. Enough, however, may be elicited to put one on one's guard and to cause one to make a more careful examination of the part.

It is well to remember, as Cornet remarks, that "Pain being an indication of superficial subpleural infiltration is a forerunner of other symptoms, and as such is of diagnostic value. Such pain is as a rule not severe."

Fever.—It is unfortunate that such a cardinal symptom of tuberculosis as fever is almost beyond the domain of the insurance examiner. A single temperature taken in the morning is of practically little value in early cases, and any fever observed by the applicant in the afternoon will be kept concealed. The coached person will present himself for examination in the morning and if, as is so rarely attempted, the temperature is taken, he will by surreptitious breathing through the mouth or other methods prevent a proper record.

Remembering the importance of a slight elevation in the afternoon, even to as little as 99.2° or 99.4°, or after fatigue and possibly, as is claimed by some, after the ingestion of food, the burden of our questions will bear upon finding out if there has been noticed any undue warmth. Combine this with inquiry about fatigue, if he or she has ever noticed a feeling of tire over an undue time. If ever, or recently, badly run down, or needing a tonic. Possibly at this period a slight warmth in the afternoon, with a tendency to dampness of the forehead.

Possibly again, an attack of so called malaria might have been felt, with vague afternoon chills accompanied by some loss of strength and a trifle of afternoon headache, with flushing of the face. This flushing, as is interesting to note, is sometimes unilateral in character upon the affected side, and may possibly be sympathetic in its origin due to pressure of some enlarged bronchial gland.

Sometimes but a slight warmth of the palms of the hands will be observed, or afternoon dryness of the lips, and a trifle of rapidity of respiration. Accompanying this there might have been noticed the slight increased rapidity of the heart action. We should guardedly endeavor to find out if at any period the heart was known to be accelerated, when, and covering what space of time; for as is known the acceleration of the heart is frequently out of proportion to the temperature. Also whether effort caused any undue impression upon the heart, and how long ago. Refer possibly to the last time the family physician was consulted medically, and if at this time any cardiac examination was made, for sometimes to conceal a lung examination an applicant will admit a trifle of heart "fluttering" and become confused and honest at subsequent questions.

Remember that heightened temperature and pulse mean toxine absorption consequent upon increase of the growth of microorganisms, whether tuberculous or mixed, and spread of local conditions.

Appearance.—In the appearance of those very early cases with which the examiner is liable to be confronted, there is nothing of pathognomonic significance beyond that caused by improper bodily nutrition and mild toxæmia.

The facies of typical advancing condition is too well known to need description, but I would call attention to several minor points which when observed are significant. The undue dryness of the skin, with sometimes faint, brownish discoloration, and prominence of the papilla. Sometimes I have noticed a greasy condition of the skin with a "streaky" condition of the papillæ in the region

below the clavicles, the "goose flesh" upon slight chilling, and a tendency to free perspiration in the axillæ whilst the applicant is undergoing the examination—all having significance. Roque and Detree have observed in a number of early cases a slight inequality of the pupils, appearing long before positive symptoms were noticed, and, as in the flushed cheek, due possibly to irration of the sympathetic by tuberculous bronchial glands.

It has been recorded by Thompson, Sticker, and others that a red line sometimes exists along the gum margin in early tuberculosis, and Turban states: "I have myself repeatedly found this symptom very early in closed tuberculosis, especially in children, but it is often entirely wanting particularly where attention is paid to the mouth." This may well be borne in mind, however, especially when dealing with the poorer class of insured, among those who are less careful about their toilet, and when the first signs of lassitude would increase their carelessness in personal matters.

Alimentation.—Early alteration of conditions in the alimentary tract, although not present in all cases, occur in the majority, and it would be well to dwell a moment upon any so called dyspeptic attacks, loss of appetite, or diminution of the desire for or repugnance to food. And in the course of our personal history as to previous disease or whilst conversing during the physical examination speak about any nausea, distention, or that commonly known trouble, "water brash."

With any discovery of altered nutrition comes readily the question as to loss of weight or as to whether the applicant has observed that the clothing has become loose, which in some cases is quite self evident. In the summer I anticipate such a remark by saying that it is to be expected that during that season one should "fall off a few pounds."

Finally, it must not be overlooked that the effect of the toxines is early manifested in the nervous system, and although there are no frank diagnostic signs, yet our sufferer is afflicted with an irritability of temper beyond the ordinary.

It is in order to abstract from him if possible an admission of disturbance of spirits at trifling matters occurring in the course of business or in the household, that there may possibly be sleeplessness, or mental depression, or undue emotional activity, or in women crying attacks.

Before closing I would call attention to the necessity of investigating the course of recovery from typhoid fever, malaria, influenza, and the like, for tardy convalescence means, as I have, alas, so often been forced to observe, infection with the bacillus tuberculosis.

Be not afraid of your suspicions, but follow them to the end by careful physical examination and know, as in those closing lines of Sophocle's great play:

> Whate'er of good or ill weak mortals know
> Must from their best of guides, experience, flow.

1423 SPRUCE STREET.

FEATURES OF UTERINE SEPSIS.*

BY SIMON MARX, M. D.,
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In discussing the subject of uterine sepsis we take into consideration both the gynæcological and the obstetrical aspect. We will deal with the latter first as the more complex problem of the two. This perplexity is only apparent, for if the condition will only be looked upon as a pure surgical sepsis with certain modifications the real difficulty as to treatment and diagnosis will be overcome. Liken the whole status as the surgeon does an infected wound, elicit your point of infective entrance, locate your foreign body in the wound if there be one present in the shape of retained placenta or membranes, remove them and you gain control of the further septic absorption. Let us go a little further and take the parallel with an infected limb. If after eliminating every possible source of uterine sepsis by the usual means, and the patient neither does not improve, but on the contrary grows worse, remove the organ, i. e., the uterus even as the general surgeon removes the limb under similar conditions, providing you are morally sure that the sole infecting nidus is the uterus and the uterus only. But this is seldom either possible or feasible. As to the features of the causation of a uterine puerperal sepsis we consider the primary cause always an external infection, and so long as this does not obtain, no matter how much placenta or membranes remain, a puerperal sepsis can hardly occur. Quite the contrary, be the uterovaginal canal as clean as Nature would wish it, an unclean hand or instrument introduced would be the most prolific source of a virulent infection.

In studying the features of a puerperal uterine septic infection we consider two general varieties arbitrarily arranged, namely, sapræmia with all its features and general sepsis with all its modifications. All sapræmias which are due to saprophytic decomposition give rise, unless checked early, to general septic infections. These are all due to an infection from without, and are furthered by the presence of retained products of conception be this placenta, membrane, or blood clot. Under more unusual conditions we may have the same condition arise from a decomposing or sloughing fibroid which unless great care be exercised, may be mistaken for and treated as a retained decomposing placenta. The later manifestations from a local standpoint may be a local disseminated phlebitis, a pyosalpinx, or an old fashioned pelvic cellulitis, or peritonitis with or without suppuration.

All septic processes are due to and arise from a lesion situated within the genital tract. A careful local examination done sufficiently early will in the largest number of cases reveal the infective area at some point of the canal in the form of a so called puerperal diphtheritic ulcer. This I say advisedly; and where they have been sought for, and found, and treated energetically that would be as a rule the end of the infection and the patient would generally become well.

* Read before Eastern Medical Society, March 9, 1906.

These lesions are characteristic and give the appearance of an unhealthy looking ulcer, such as is found in any septic wound; and in midwifery as in surgery there can be no septic infection without an infective nidus. These ulcers may be situated at any point of the uterovaginal tract from the perinæum to the fundus uteri. In the lower genital tract they are readily seen. Their presence in the uterus can be strongly suspected by their presence upon the cervix.

It is of the greatest importance to differentiate these ulcers giving rise to a sapræmia to that which arises from decomposition of retained products of conception. This from a therapeutical standpoint. For if the former be mistaken for the latter and the curette be used we are treating the case along surgical lines that are absolutely and positively dangerous. The curette in the presence of a sloughing exudate simply means opening up avenues for further infection. While, when done along strict lines of indications, we promptly remove the offending products of conception and thus end the source of further infection. Where we have disturbances of the puerperium and visual inspection reveals no evidence of infection, we look most naturally to the uterus as the offending organ.

A very valuable symptom denoting a sepsis of uterine origin which manifests itself early before there are local evidences are the presence of severe persisting after pains, especially when they occur in the person of a primipara. While in the multipara, when they are severe and lasting beyond the usual period of three or four days, the persistence of this symptom denotes the presence of a foreign body inside of the uterus, which unless removed by Nature or artificial means will almost invariably be followed by symptoms of a septic infection.

A uterus that is well contracted and in size corresponding to the time of the puerperal period cannot possibly contain any foreign body sufficient to cause a uterine sepsis. Do not misunderstand me, for I maintain that no recently delivered uterus is so absolutely empty but what the carping critic or enthusiastic consultant can find at all times some small product remaining which he in the profundity of thought can proudly exhibit as the cause of the temperature rise much to the mortification of the attendant and to the possible detriment of the patient. This can only happen to the occasional consultant; for the expert knows full well that with a sapræmia which goes with the decomposition of retained products we have always a condition of subinvolution as shown by the large, soft, relaxed, and painful organ which in most cases gives vent to a nasty mal odorous discharge. Unless I obtain evidence that the case from the very start is one clearly that of a sepsis with all the characteristic manifestations, it is my practice to view that case from the standpoint of the general medical consultant, for on more than one occasion have I discovered a pure medical complication, as a pneumonia which the attending physician had been attempting to cure by systematically washing out the uterus. No matter what presumptive evidence you have of a uterine sepsis unless positive, hunt your patient over as you would a case, not a puerperal one, and forget that even though a woman has been recently confined she can nevertheless have some foreign medical or surgical complication which is an epiphenomenon of the puerperal state. This will save you many a mortifying moment and make you a better and more unbiased observer. The general features of a septic infection are in no wise characteristic of the condition other than is evidenced by a surgical infection under ordinary conditions.

The fixed association in the minds of many physicians of the presence of a distinct chill as a *sine qua non* in the diagnosis of an infection is as erroneous as it is dangerous, many holding that without a chill a septic infection cannot arise. If the infection be insidious a chill may never arise. Then and then only if the absorption be rapid can one expect a chill, and the most desperate cases have been those of an infection of the lymphatic type where at no time was a chill to be noted; in fact, the depression was so profound that the temperature never arose to any appreciable degree at any time.

This calls up the subject of temperatures as an evidence of sepsis. It is no guide, for generally speaking the worse the case the lower the temperature, and personally I am always easier in mind when a patient presents high temperature with low pulse; by far this than a rapid pulse, and a low or even absent temperature. The pulse must ever be your guide and a rise of the pulse even in the absence of a fever must always make us highly suspicious, and guarded as to the outcome. High pulse and low temperature means a bad prognosis, low pulse and high temperature means a pure sapræmia and a good prognosis if treated early. An œdematous condition or pain on pressure over a recently sewed perinæum warrants the immediate opening of all sutures, for hidden areas in these localities are the most likely and the most dangerous sources of an infection. In the few cases where a diagnosis of a sepsis cannot be made we view the case with suspicion, but nevertheless look upon it as one of sepsis. These cases are rare, but are of importance because of this rarity.

Two factors may now be taken into consideration. The presence or absence of an increased leucocyte count is of little value to us, for the main reason that immediately after labor there is such a rapid fall of the leucocytes, amounting to almost a third, that we cannot lay too much stress upon this particular manifestation. This I have shown in another place from a study of this subject during pregnancy and after labor. To what extent the polynuclear count will bear upon the subject I am not prepared to say, but must leave this for discussion of the evening. The presence of streptococci and staphylococci in the blood is conclusive evidence when found; but how often in just the cases we expect to find them are they not present? For this reason, while when they are present, the diagnosis is assured, their absence does not prove that a severe sepsis may not be present.

Further, in the absence of evidence of an in-

fection the bacteriological examination of the uterine contents becomes of enormous value if it can be done by one expert in getting such tainted material. But because of this difficulty it becomes a measure eminently fitted for the expert only, and not for the man not versed in such matters. For such cultures are difficult to get uncontaminated by extraneous material. Thus these statements are based upon examinations of forty-seven cases after labor.

As to gynæcological uterine sepsis we recognize but two principal varieties, the infective and the traumatic. These are primarily distinct and separate entities, but later merge into the category of a sepsis pure and simple. Intrauterine office interference is an exceedingly prolific source of a septic infection, and the use of the average office sound is as dangerous an element as a provocation in gynæcology as is the family petrolatum pot in midwifery. The use of the uterine sound cannot be too strongly condemned as a general utility instrument. It has its limitations and is perfectly harmless in the hands of the conscientious and clean surgeon. But in any case it can be said that what the sound can discover, the sentient finger can also locate, so that this instrument is one of precision can truly be relegated to the past. Other unclean instrumentation and operations are also clear causes for sepsis which under other conditions would never arise. Their manifestations are as a rule not very acute, and show themselves later in the form of exudates and organic disease of the tubes and ovaries. But where the local sepsis is severe the symptoms are unmistakable, not alone by the general symptoms, but by those of either an acute inflammation of the uterins or annexal organs, or those of a general sepsis which differ in no wise from those of a general surgical sepsis.

In the traumatic variety we have a more interesting and dangerous group to deal with. Of greatest interest are the pelvic perforations, especially the uterine ones. The primary symptoms are nil, except the recognition on the part of the operator that the damage has been done. If this be the case and the operator has been clean no uterine washings given, the organ packed with gauze and the patient left alone, no great danger is to be anticipated; but if the opposite conditions obtain the symptoms of a violent inflammation and a general sepsis may soon intervene, especially to the traumatic sepsis following curettage for fibroid tumor of the uterus that I wish to call your attention. This is a prolific source of sepsis. So much do I fear this that under no condition do I ever countenance a curetting for the sole purpose of checking a hæmorrhage in or controlling the growth of a uterine fibroid. Under these conditions if the curette is used the capsule of the tumor is either destroyed or the tumor robbed of its source of nutrition and gangrene is bound to occur. The local and general sepsis which will inevitably arise from this calamity is, outside of local manifestations similar to a surgical sepsis. The local evidence is the putrid and bloody discharge from the uterus, the pain and tenderness over this organ, and the rapid occurrence of a local and general peritonitis, until active measures are taken to remove either the offending tumor or what is always better, the diseased uterus. As a corollary to these statements it would follow that because of the danger of a traumatic infection in these cases it would be better and safer if in a case of fibroid tumor of the uterus there be symptoms sufficiently severe to warrant any operative interference, that interference ought always be a deliberate hysterectomy.

Because of the time limitation of this paper it must naturally be rather sketchy and primitive, but my conclusions must be presented as follows:

That the features of a puerperal sepsis almost invariably with but few exceptions arise from some lesion in the genital tract, treat these and your sepsis will either be rapidly modified or cured.

Pulse rate is of greater importance than temperature rise. High fever with low pulse is of better prognostic importance than low temperature and high pulse. A well contracted uterus and sweet lochia preclude the possibility of uterine sepsis. Remember that the absence of a chill does not mean that a sepsis is not present, for in the low and malignant septic cases as in that of the lymphatic type a chill may never occur and yet the patient be doomed.

View your case primarily as a general medical one, unless the symptoms of a uterovaginal sepsis are so pronounced that there can be no possible doubt. The features of a uterine sepsis are in no wise different from a surgical sepsis and treatment instituted along the same, or at least similar lines, will give the same results. Careful search for the lesions will be of enormous benefit; indiscriminate and empirical treatment as is shown in the universal use of the curette will surely redown to the discredit of the physician and hasten the downward course of the disease.

947 Madison Avenue.

THE TREATMENT OF TABES IN THE PREATAXIC STAGE.

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The very nature of the disease process in locomotor ataxia renders its treatment limited. While it is true that very few cases, if any, recover, much may be accomplished by treatment in arresting progress and symptoms. Various specifics have been advocated from time to time, but all of them have proved fruitless. Silver nitrate has probably thrust itself to the fore most persistently, but of late years has been discarded with a consequent falling off in the number of cases of chronic argyria. The dose was one sixth grain three times daily, and was usually maintained until about 450 grains were taken when the discoloration appeared. If it is decided to use this remedy it should be administered for one month and then suspended for ten

days; or should be accompanied by arsenic. The latter "seems to do good," says Gowers, and should be pushed to saturation as suggested by him.

It is a notorious medical fact that the more intractable the disease the longer the list of drugs recommended and vouched for by various observers. This is true of tabes; but suffice it to say that, as a cure, all of them are failures. However, in a disease so steadily progressive and primary lesion of which is a neuronic degeneration, a temporary cessation is a result of which to be proud; although this sometimes occurs without treatment. A few cures have been reported, but a mistake in diagnosis may explain some of them and the relief of the syphilitic manifestations the others.

As far as antisyphilitic treatment is concerned, it is my opinion, it should be confined to those cases showing tabetic symptoms within two years of the primary lesion and accompanied by other manifestations of syphilis outside the nervous system. The treatment is the same as in other luetic conditions, and should be boldly exhibited. If possible, the mercury should be given by inunction and the iodide increased as rapidly as possible. In cases not plainly syphilitic the disease is beyond the reach of specific treatment and the mercury and the iodide may do much harm.

One of the most important factors in the care of the tabetic is rest. It is often a perplexing question as to how much rest is to be enjoined. In the earliest stages the quieter the patient keeps himself the better it will be for him. It is well not to alarm him by insisting too strongly upon absolute quiet, but he should be taught to lead a life of moderation while, continuing in a measure, his business and social duties. This prevents his dwelling too much upon his physical condition, and insures a mental quietude that will aid him in bearing his burden. Some have claimed good results to follow the rest treatment of Weir Mitchell.

I understand that in Germany electricity is still a popular remedy. Erb's directions for Galvanism are to place a moderate sized anode in the vicinity of the sympathetic in the neck, and a large kathode on the side of the vertebral column for four or five minutes, moving it at intervals from above downwards. When the Faradic brush is used it should be brushed over the skin of the back for a few minutes, using a strong current.

The tepid bath is grateful, is symptomatically useful, and can do no harm. Its temperature should be about eighty-five degrees Fahrenheit, accompanied by gentle rubbing. The various water cure establishments, if managed by competent persons, may be of service to the patient, and should be tried if only for the mental effect.

The use of plain nourishing food, long hours of refreshing sleep, amusements in moderation, should be advocated. If the occupation is confining, exhausting, or dangerous a change should be urged. Monotony, whether mental or physical, should be avoided.

The largest opportunity for the use of drugs in the treatment of locomotor ataxia is in the management of its special symptoms. For the relief of the lancinating pains, which is the most distressing of all the symptoms, nothing answers so well as morphine. Yet, this must be withheld as long as possible that the danger of a drug habit may be avoided. Many ataxics live several years, and to add the morphine habit to their other troubles is unjust. Moreover, if the pains are mitigated only in part, the patient learns to bear with them and can attend to his business without detriment therefrom. Other remedies that may be tried are the coal tar products, the salicylates, methylene blue, and the bromides. All of them at times will prove disappointing, yet they should be given a thorough trial before recourse is had to morphine.

For the laryngeal crises the local application of cocaine affords relief, while the bladder and rectal symptoms may be overcome by the use of suppositories containing iodoform, belladonna, and opium. The usual remedies for insomnia should be used if indicated.

Notwithstanding the unfavorable prognosis in this disease it is the duty of the physician to make every endeavor to relieve his patient, to encourage him in every way, and to keep him out of the hands of the quack. He should adopt the methods of the charlatan when necessary, not for his own good, but for the benefit of his patient.

FIRST AND ROBINSON STREETS.

CONGENITAL CYSTIC KIDNEY; RUPTURE OF A CYST; OPERATION; RECOVERY.

BY CHARLES E. PRIOR, M. D., AND FRITZ W. GAY, M. D., Malden, Mass.

The following case possesses several interesting and unusual features, which would seem to justify its being placed on record:

E. M., twenty-six years old, born in Massachusetts, was a cook in a night lunch car. His family history shows that his mother is alive and well; he has one brother, twenty-eight, perfectly healthy; one sister died in infancy; cause of death unknown. His father died of "kidney trouble" in 1888. An autopsy performed by Dr. A. J. Stevens, of Malden, showed two large cystic kidneys which together weighed nineteen pounds. The patient knows of no other of his relatives who died of "kidney trouble." He has himself always been well and strong, with the exception of a four weeks' attack of malaria, which he contracted in the Philippines, where he served for three years in the United States Army. He had diphtheria two years ago. He smokes occasionally, but never drinks.

He states that his present trouble began as an attack of "indigestion" after eating supper on February 28, 1905. He lay down for a couple of hours and on getting up, slipped and fell, striking his right hip. Immediately after this, about 10 p. m., the pain in his "stomach" became much more severe. He went to work, however, and kept at it till about 2 a. m., when he gave up and appeared at the writer's office. Walking restlessly about the room, vomiting occasionally and continually belching gas, he was apparently suffering intense pain, which he referred to the right half of his abdomen and to the right lumbar region.

Physical examination showed him fairly well developed and nourished; somewhat pale. Eyes normal; tongue dry, with a brown coating; temperature, 98°; pulses equal, regular, 88, of fair volume and high ten-

sion. Examination of chest showed nothing abnormal. The abdomen was slightly distended. There was dulness extending from the costal border nearly to the crest of the ileum on the right, but not movable, tympanitic elsewhere. Corresponding to the area of dulness a hard, firm, and extremely tender and hence very indefinite mass could be felt. There was marked spasm of the right rectus. The urine was passed freely, of normal color, and contained a very slight trace of albumin. The patient received a sugar coated pill containing strychnine sulph. gr. $^1/_{30}$, morphine sulph. gr. $^1/_8$, which gave him temporary relief.

Early the next morning he was taken to the Malden Hospital, where he was operated on at once by Dr. Prior. The count of the white blood corpuscles was 25,000. On opening the abdomen through a three inch vertical incision just to the right of right rectus and opposite the umbilicus, about a pint of bloody fluid escaped. On exploration the appendix was found apparently normal. Extending along the right side of the spinal column and occupying the site of the right kidney was a large irregular mass, lying behind the peritonæum. The wound was enlarged and with considerable difficulty the tumor was exposed. There was an extensive retroperitoneal hæmorrhage, and the coils of intestine in proximity to the tumor were covered with a hæmorrhagic exudate. The kidney on the left side was of normal size. With considerable difficulty the mass was dissected free, and the blood clots removed, the stump ligated, and the tumor removed. The cavity was sponged out, gauze packing inserted and the wound closed as much as practicable.

Examination of the mass showed that it was a large cystic kidney 22 by 12 by 11 centimetres, weighing 5.75 pounds. Near the upper extremity, one cyst had ruptured, and this was clearly the source of the hæmorrhage. Near the middle of the mass was apparently kidney tissue, which on microscopical examination proved to consist of tubules and glomeruli, with some increase in the amount of interstitial tissue. The fluid from one of the cysts was sterile.

The wound healed slowly and the patient remained in the hospital till April 24, 1905, when he was discharged well. During his stay in the hospital he passed from 800 to 1,600 c.c. of urine daily. The specific gravity was 1012; acid reaction, slight trace of albumen, a few hyaline and granular casts, and urea 2.5 per cent. He had a troublesome bronchitis for five or six weeks, which gradually cleared up.

Congenital cystic kidneys are usually bilateral, that they are hereditary is doubted by some. The great majority are found in infants. Those that are found in adults may present no symptoms. The urine may contain blood, it is usually like that of chronic interstitial nephritis. The treatment should be that of chronic nephritis. The statement of Osler that operative interference is never justifiable in these cases is not applicable to our case.

The special points of interest in this case are:

(1) The patient's father died of the same condition.

(2) The health of the patient had not been at all influenced by the presence of the cystic kidney.

(3) The rupture of a cyst and the rather extensive hæmorrhage resulting from a slight fall.

(4) The successful removal of the kidney tumor.

(5) The apparent good health of the patient one year after operation.

67 SALEM STREET.

Our Readers' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LI.—How do you treat prolapse of the umbilical cord? (Closed June 15, 1906.)

LII.—How do you treat hemicrania? (Answers due not later than July 16, 1906.)

LIII.—How do you treat burns? (Answers due not later than August 15, 1906.)

Whoever answers one of these questions in the manner most satisfactory to the editors and their advisors will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short; if practicable, no one answer to contain more than six hundred words.*

All persons will be entitled to compete under the regulations laid down by the postal authorities. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL.

The prize of $25 for the best essay submitted in answer to question L has been awarded to Professor Irving Fisher, of New Haven, Conn., whose article appears below.

PRIZE QUESTION NO. L.

THE BEST FORM OF SHACK OR TENT FOR TUBERCULOUS PERSONS.

BY IRVING FISHER, PH. D.,
New Haven, Conn.,
Professor of Political Economy in Yale University.

[After alluding briefly to the "up draught louvre tent" devised by himself a few years ago, Professor Fisher proceeds as follows:]

A New and Simpler Adjustable Tent.—This also is a square tent, but has the roof with a slighter slope (so as to admit of easy heating) and only a small opening in the centre through which, in summer, any slight accumulation of hot air under the roof may escape. This opening is provided with a rain umbrella which may be brought down snugly on the roof, if the tent is to be heated.

The tent roof is supported by four pillars at the four corners. On each side, between the two pillars, instead of a tent wall, are two sliding doors of canvas, each of which occupies only slightly more than half of the space and may be moved to any position within that space, like the ordinary sliding doors in front of pantry shelves. These eight doors on the four sides may be each arranged in any desired position, thus securing any degree of opening for ventilation or sunning. When the tent is open to its full capacity there will be only a little over half of the wall space occupied by the doors. This opening to the full capacity may be accomplished in several ways, as shown in the accompanying photographs. In one of them, four of the doors are thrust up against one post and the other four against the diagonally opposite post, leaving the other two diagonally opposite corners entirely

FIG. 1.—Professor Fisher's shack, closed.

FIG. 2.—Professor Fisher's shack, partially open.

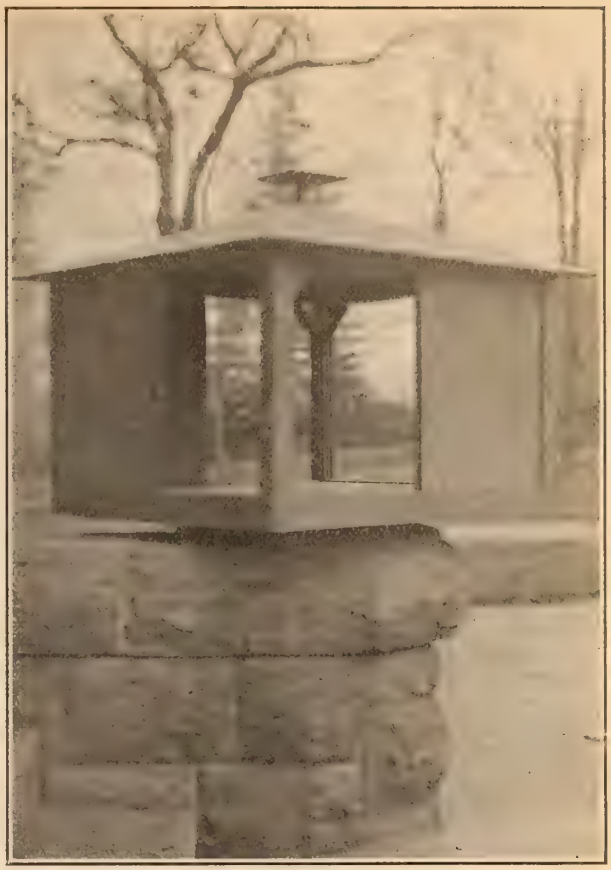


FIG. 3.—Professor Fisher's shack, open.

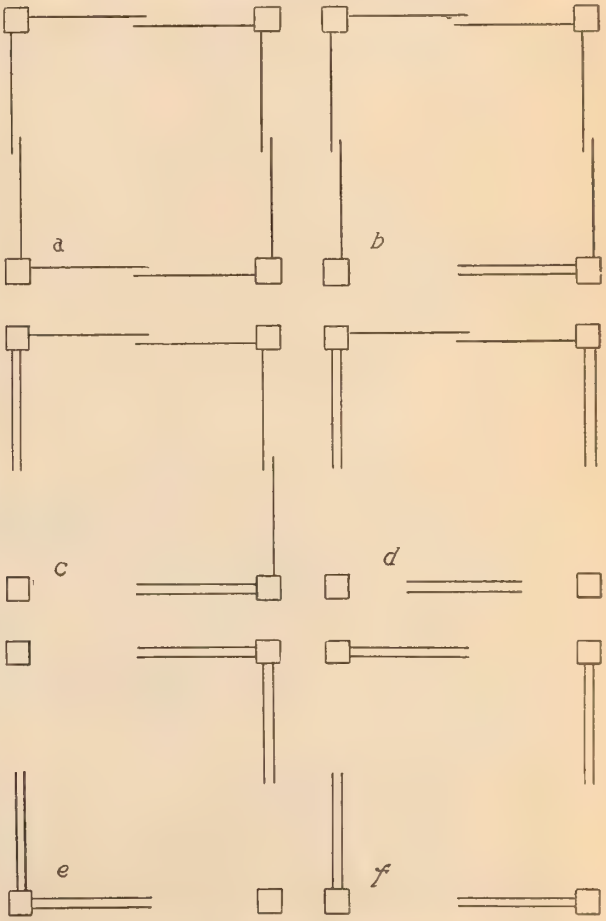


FIG. 4.—Ground plan of Professor Fisher's shack: a, closed; b, one eighth open; c, one quarter open; d, one third open, e and f, one half open.

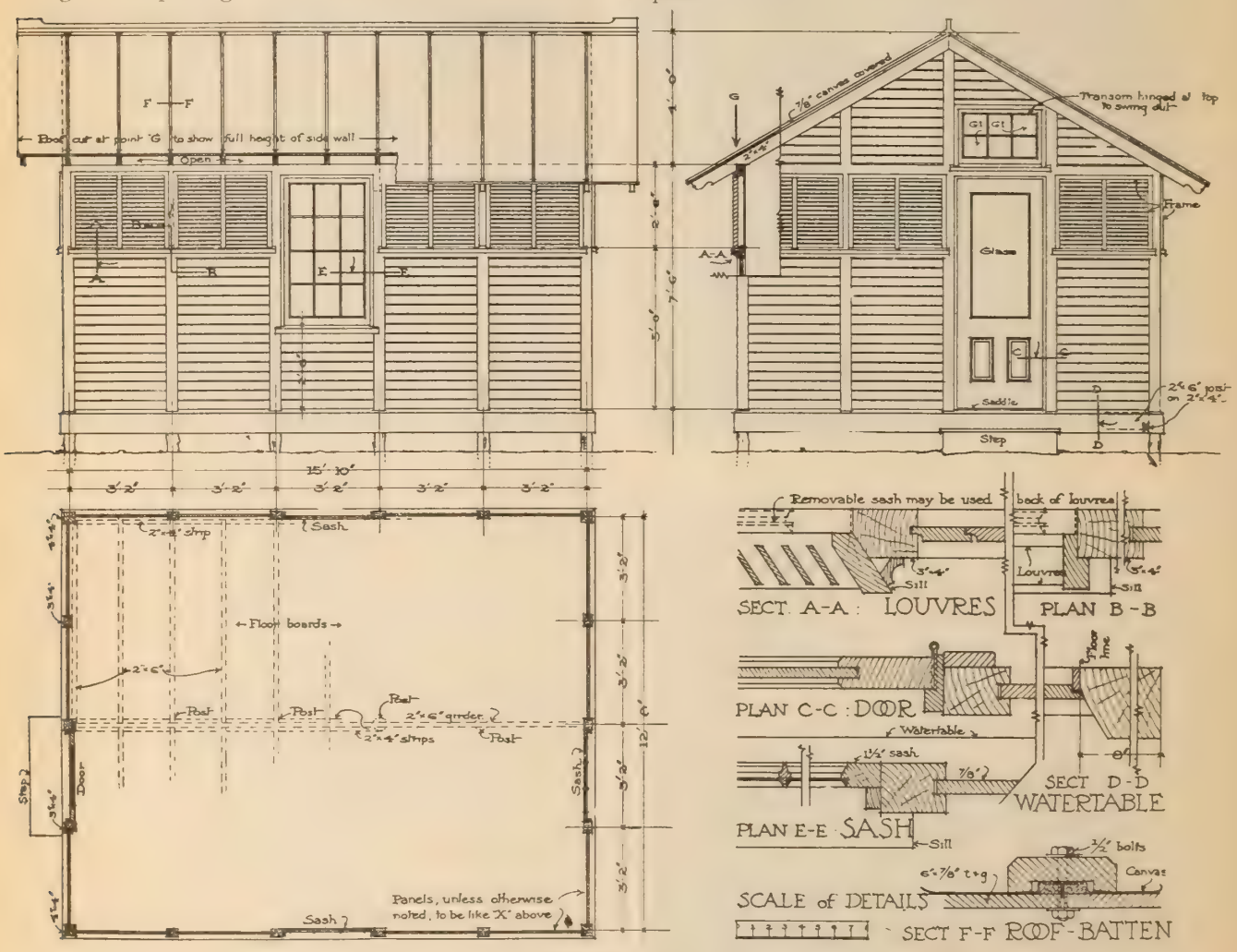
open. By a proper adjustment of the doors, perfect ventilation can always be secured, and at the same time protection from wind, from whatever quarter. The tent thus serves not only the purposes of an ordinary tent, but also those of the rotating kiosk. For a wardrobe, one of the inner doors is provided with hooks covered by a curtain. As the doors slide very easily, this movable wardrobe occasions no difficulty.

Inasmuch as there are no tent walls, and all eight doors are perfect duplicates, this is perhaps the simplest and cheapest in construction of all tents with a floor which have yet been constructed, as well, also, as capable of the greatest degree of opening for ventilation.

sides are boarded up for five feet from the floor, while above that to the eaves are louvres or openings like the slats in blinds. At the ends are tramsoms that may be opened or closed at will. If occupied in summer in a culiciferous region, the louvres may be protected on the inside by the customary nettings.

Primarily designed simply as a sleeping apartment, it may also be occupied in the day time; and if the weather should be cold the louvres may be closed by thin boarding on the inside to be removed at night.

The interior furnishings will of course be arranged according to the requirements of the occupant.



Dr. Piffard's shack.

Dr. Henry G. Piffard, of New York, writes:

The advantages of a freely ventilated sleeping apartment not only for patients suffering from early tuberculosis, but also for many others are so well recognized that nothing in advocacy thereof need here be said.

The object of the accompanying design was to secure the freest circulation of air consistent with due protection from the elements.

The dimensions are 12 feet 8 inches by 15 feet 10 inches and 7 feet 6 inches to the eaves, and may be so constructed that it can be readily taken apart and set up with little trouble in another locality. As will be seen from the design the

It will be readily seen that the design here shown will permit of modification in various ways. For instance, the louvres may be increased or diminished in number, thus giving more or less ventilation. Instead of a canvassed roof, shingles could be used, that if it was intended to locate it permanently on one spot. A covered porch in front, say at least six feet wide, would add greatly to the comfort, to say nothing of the appearance. In fact, this would be almost a necessity if the cabin were to be used in the day time, and could be used at night if one desired to be absolutely in the open air.

The cheapest construction that would be at all

suitable would perhaps be hemlock timbers and siding, both undressed. White pine siding would of course be preferable, but costs a little more. The flooring should be of white or yellow pine. The pine trees could also be of the same, dressed and varnished. The outside could be painted, or better perhaps tinted with some one of the shingle stains in common use. In fact, color scheme could be adopted that would bring it into harmony with surrounding structures.

The essential features of the design are ventilation and protection from the weather. If these are preserved the unessential details can be left to the taste or purse of the occupant.

I am indebted to the courtesy of Mr. H. J. Hardenbergh, who has kindly furnished the accompanying drawings.

Dr. Arthur L. Murray, of Washington, D. C., states:

In the open air treatment of tuberculosis the prevailing climatic conditions must necessarily, to a certain extent, govern the type of shack or tent to be occupied by the patient suffering from this disease.

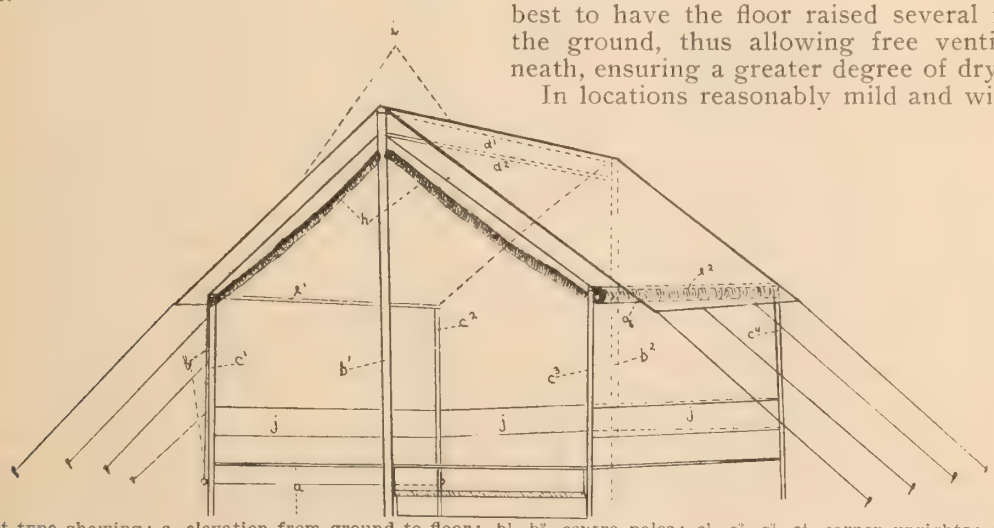


Fig. 1.—Tent type showing: a, elevation from ground to floor; b^1, b^2, centre poles; c^1, c^2, c^3, c^4, corner uprights; d^1, d^2, ridge poles; e^1, e^2, cross pieces from corner uprights; f, right wall lowered; g, left wall rolled up; h, front flaps rolled up; i, fly; j, boarded sides two feet high.

But regardless of what type of construction is to be used the selection of a suitable site is essential. The site should be located where the best drainage is afforded, the ground being as free as possible from soil water, yet where can be had the maximum amount of sun exposure with the least exposure to wind. For all forms it is best to have the floor raised several feet above the ground, thus allowing free ventilation beneath, ensuring a greater degree of dryness.

Fig. 3.—Tent shack in use at the Washington Asylum Hospital, showing lower part of wood and upper part of canvas.

In locations reasonably mild and with not too heavy a precipitation the tent type with a few modifications is very desirable. Thus, a tent about 8 by 10 for one person, or larger where occupied by more, built over a frame consisting

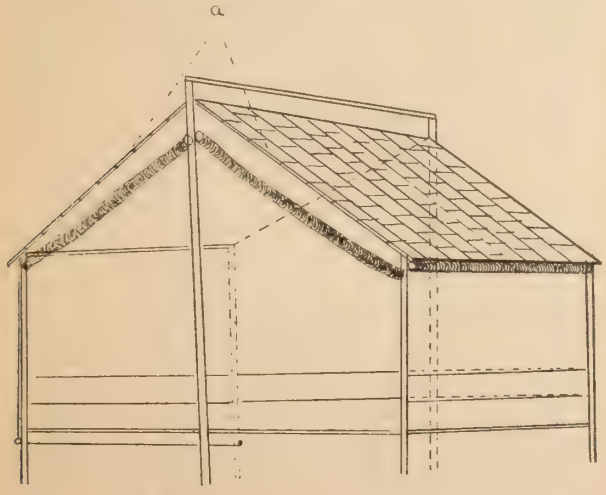


Fig. 2.—Tent shack, same as Fig. 1, except a, shingled roof.

Fig. 4.—Interior view of Fig. 3, showing part of one s de and end.

of two poles, one at front and one at rear, about nine feet high, and carrying across their tops two ridge poles, one four inches above the other. Next, four corner pieces seven feet high should be placed at the corners of the tent and connected by cross pieces from their tops on the sides and rear. The floor may now be placed inside, the six uprights about two feet from the ground. Two feet of boarding should be carried around the sides and back of the tent from the level of the floor up, which will not only guard against anything falling from the tent, but also give the canvas sides more stability in bad weather, yet permit good ventilation.

Canvas may now be stretched over the lower ridge pole and allowed to come down to the cross pieces from the corner uprights and fastened permanently, thence down the sides to a little below the level of the floor, thus giving side walls of about five feet. On to the lower end of the side wall canvas may be fastened a wooden roller, by which means in bad weather it may be hooked down or in fair may be rolled up and hooked to the cross pieces, thus permitting free access of air and sunlight into the tent.

The front and rear should be furnished with two overlapping flaps, each of which should be fastened along the roof permanently from the ridge pole to the cross pieces of the corner uprights, down which they may fasten by eyelets and hooks. By this arrangement the flaps may easily be rolled up along the sloping roof of the tent. Over the upper ridge pole may now be stretched the fly which should extent a little beyond the tent walls. A flight of several steps now completes this type.

For climates more rigorous and having a greater precipitation a combination of tent shack is better. This is obtained by constructing in the place of the canvas roof of the tent a permanent one of wood, preferably one of shingles, extending a slight distance beyond the side walls which with the flaps will be of canvas, as in the tent. In this type the upper ridge pole is retained, and a fly is used in the summer time to protect the wooden roof from the direct sun.

For institutions a form of tent shack erected by the Committee on the Prevention of Consumption of the Associated Charities at the Washington Asylum Hospital is a very excellent arrangement accommodating about eight patients each. They are about 15 by 25, with eight foot walls and fourteen foot centre, raised several feet above the ground with boarded sides running four feet up from the floor. The roof, the other four feet of side walls, and entire front and rear except the door, are of canvas. The canvas part of walls is arranged in frames made to swing out on hinges at the top, thus allowing free exposure to sun and air. The roof is of canvas stretched over a framework of wood.

With a shack of this form accommodating about eight persons, it is easy to group patients of about the same stage of the disease, which makes much more convenient the following out of the treatment and progress of the cases.

(*To be continued.*)

Therapeutical Notes.

Treatment of Impetigo Associated with Phthiriasis.—In the opinion of Berlin (*L'Echo médical du nord*, Lille, April 1, 1905), the former treatment of ptheiriatic impetigo by cutting the hair is entirely unnecessary. If the solution recommended by Sabourand be used, the parasites and eggs are destroyed in a day or two and the impetigo gets well of itself:

℞ Hydrargyri bichloridi, ...1 gramme;
Acidi acetici, ...4 grammes;
Alcoholis (90°), } .....āā 200 grammes.
Aquæ destillatæ, }

M. Thoroughly moisten the hair and scalp with this solution, apply a rubber tissue cap for two or three hours and then comb the hair with a fine tooth comb. If necessary the treatment can again be applied two or three days later.

Subcutaneous Injections of Alcohol for the Cure of Umbilical Hernia in Infants.—Ledmanowsky (*Czasopismo Lekarsie, Roussky Vratch*, 1906, No. 11) has had very good results with local injections of alcohol in the treatment of umbilical hernia in children. He treated in all nine cases, the ages varying from one month to eight years. His method is as follows: After having restored the contents of the sac to the abdominal cavity, he introduced the extremity of his left index finger into the umbilical opening, so as to avoid wounding the peritonæum, and then injects under the skin, surrounding the hernia, 1 c.c. of alcohol (60°). There is next applied a compress, consisting of a piece of money enveloped in gauze; outside of this is a layer of absorbent cotton, and this is kept in place by several turns of a roller bandage. This dressing is allowed to remain undisturbed for a week, and then another injection of alcohol is made and the dressing reapplied. The obliteration of the hernial canal is accomplished after three or four injections.—*Le Bulletin médical*, 1906, No. 29.

The Treatment of Obesity.—Van Noorden (*Journal de médecine*, May 13th) says that the most favorable results from treatment of obesity are obtained in persons, otherwise healthy, in whom the weight of the body is not more than fifteen to twenty kilogrammes above the average. In addition, however, to those who are healthy certain obese subjects suffer with troubles of the circulation, and possibly forms of neuralgia. As a general thing, the diet is at fault; the obese follow a badly balanced regimen. The duty of the physician, therefore, is to reorganize the schedule; he must aim to prevent the further deposit of fat and to promote the consumption of the fat already existing. Consequently, he should diminish the alimentary ration and increase the combustion. During the treatment by dieting, the patient must receive a quantity of albuminoids corresponding with the requirements of health (100 to 140 grammes a day), but the non-nitrogenized must be reduced, so as to have as small an amount as possible of calories in as large a bulk as possible. He, therefore, may have bread, potatoes, beans, peas, fruits, sufficient to keep him from starving. Some allowance must be exercised for individual tastes in arranging the schedule, as some patients prefer a diet rich in

fat and poor in carbohydrates, while others prefer the carbohydrates to the fats. The number of calories for a man of medium corpulence is 2,500, and 2,200 for a woman per diem. In the cure for reducing weight, three diets are recognized. The first comprises four fifths of the normal ration. It is only applicable to individuals capable of taking considerable muscular exercise, and who by this means may reduce their weight one and a half to two kilogrammes a month (three to four and a half pounds). The diet of the second degree carries three fifths of the calories necessary for a healthy person (1,500). This is suitable for patients who are feeble and who are unable to take a sufficient amount of physical exercise. The third form of diet represents only 1,000 to 1,500 calories. This should be carefully watched, and is more appropriate to sanatorium treatment. It produces rapid diminution and may go to one and a half to three kilogrammes. Rapid cures are only to be considered for people without energy who have already unsuccessfully tried other treatments. For all other patients, it is preferable to proceed by degrees; that is to say, during a period of four or six weeks to alternate the cure, with a much longer period, during which the aliment exactly balances, the income and outgo being the same. This method of treatment is especially indicated as suitable for children. In order to increase the combination of fat by muscular action, mountain climbing, with a pitch of ten per cent., is especially mentioned. This form of exercise is sufficient to double the energy given out during repose. It is also the method which is easiest of adoption. Recourse may also be had to opotherapy, or thyreoid extract which increases changes by fifteen to twenty per cent., but it is necessary to watch its effects very closely.

For Eczema of the Face in Children.—Pautrier states that children subject to eruptions upon the face require persistent and patient treatment, with careful attention to hygiene. It is particularly important to keep the child from exposure to the action of the wind, the sun, or very cold air. If the water used for the face contains lime, he declares that it should not be used raw, but only applied after prolonged boiling. To this a little salt may be added, or sodium bicarbonate or borate. We may also add to the water for the toilet some coal tar saponified, or a few drops of benzoin tincture. In the great majority of cases, these hygienic measures will prove insufficient, and medical treatment must be employed. The following ointment may be applied before retiring at night:

℞ Sodii boratis, ...0.50 gramme;
Tr. benzoini comp.....gtt xv;
Zinci oxidi, ...2 grammes;
Petrolati mollis, ...18 grammes.
M.

If this is not effective, substitute a salicylic acid ointment (1 per cent.), or one of resorcin or calomel (from one to twenty per cent.), according to the susceptibility of the subject. The glycerole of tannin is recommended also, as formerly used by Vidal. In the morning these pomades are applied with piece of absorbent cotton after the skin has been washed with sterilized water, as already mentioned. Two or three times a day the following lotion is to be applied:

℞ Sodii boratis, ...5 to 10 grammes;
Glycerini, ...50 grammes;
Aquæ rosæ, ...500 grammes.
M.

In children suffering with streptococcal invasion the mucous surfaces should be cleaned, and especially the nasal mucosa, by daily, or twice daily, injections of solutions of saline infusion. For five minutes daily the infant may have inhalations of warm salt water in the atomizer.—*Reine mensuelle de maladies de l'enfance*, April, 1906.

The Value of Lime Salts in Tuberculosis.—At a recent meeting of the Société médicale des hôpitaux (*Le Bulletin médical*, March 31, 1906), Paul Ferrier claims that Nature cures tuberculosis by the same process that it builds up the skeleton and the teeth. The aim of treatment, therefore, is to calcify the tuberculous lesions. It is not sufficient, however, to administer lime salts, even the best, such as carbonate and the tribasic phosphate and aerated calcic mineral waters. It will be necessary, in addition, to proscribe the numerous causes which lead to the loss of lime and of phosphoric acid. These causes may be summed up in the words alimentary faults, beginning with the absorption of acids not saturated with lime. By the use of sodium chloride, for instance, he endeavors to increase the hydrochloric acid of the gastric juice. Patients who are not promptly benefited by the treatment by correcting the diet should receive in addition the calcium chloride. Hygienic measures also must not be abandoned. M. E. Sergent, having tried Ferrier's method in a large number of cases, reports that it gave excellent results. Improvement was noticed from the beginning. In order that tuberculous patients shall recover, it is necessary that they have a good stomach. This system leads us to combat gastrointestinal fermentation, thus opposing decalcification, and then proceeds to recalcify the organism. The results prove the correctness of this theory. The treatment of recalcification is not a guarantee of cure, but the fact is indisputable. that it greatly favors the cure of tuberculous lesions in patients who are curable, and who submit to the restrictions of this method. M. Rénon reported six cases (four men and two women), which had been under treatment for one month, and already showed considerable amelioration, especially due to the diminution of local congestion. He noted the interesting fact that in a limestone region (the village of Yonne) there had been, for the last ten years, lime burning furnaces in operation. During that period, among 200 employees of these furnaces, almost all alcoholics, he had not met with a single case of tuberculosis. Among the residents of the neighborhood the establishment of lime kilns appears to have brought about a diminution of tuberculosis. Even a phthisical subject who came ten years ago to live in this village found his condition improved, and he is at present in a very satisfactory condition, although the disease was well advanced when he came there.

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NEW YORK, SATURDAY, JULY 7, 1906.

THE MEAT INDUSTRY.

Whatever may have been the amount of exaggeration in the statements that have lately called popular attention to shortcomings in the conduct of the slaughtering and packing business in Chicago—and we believe it to havè been considerable—there is little room for doubt that the Congressional legislation that has resulted from it will prove satisfactory. The Secretary of Agriculture is reported to have said: "With this law in operation, it may be accepted as a fact that in healthfulness and purity the prepared or canned product will compare favorably with the fresh meat of the United States, which is and always has been the finest in the world. The new law is comprehensive, the means for its enforcement are ample, and its execution will be thorough. People at home and abroad may use our meats in confidence."

Of course all this can hardly be expected to put a stop to European prejudice against American food products. So long as the people of one European country are not perturbed by almost daily demonstrations of the rottenness of many of their own canned meat products or by the abuses abundantly shown to exist in their own small slaughter houses, and so long as another European nation views with equanimity its own practical monopoly of sausage poisoning, and so long as a third European community tolerates the plastering of its wines and the dilution of its cider with ditch water, while pointing the finger of scorn at American rascality, no amount of pains on our part will avail to obtain fair treatment of our products. Nevertheless, we do not believe that European prejudice will materially and in the long run impair our trade in articles of food, for our detractors are not above buying our goods and selling them as their own. Moreover, the common people in European countries are well enough satisfied that American food products are palatable and wholesome.

Our legislation must not be taken as a concession to foreigners; it is for our own benefit and for the sake of doing what is right. Our gratification, therefore, is founded on much the same considerations as those mentioned by the Secretary of Agriculture. Possibly there will be reason to regret that Congress did not enact that feature of the bill which called for the dating of canned products, and it is our conviction that the States and cities in which packing establishments are situated should themselves take a hand in inspection and in the work of seeing to it that condemned products are destroyed. It is gratifying to note that the packers themselves appear to welcome rather than resent the new legislation. If everybody concerned exerts himself to carry out the intent of the new law, the result is sure to be all that could reasonably be expected.

INTERSTATE RECIPROCITY IN LICENSING.

On June 20th a number of resolutions bearing more or less upon this subject were adopted by the Illinois State Board of Health. One of these resolutions was to the effect that the board would accept, in lieu of its ordinary examination, satisfactory evidence that an applicant for the State certificate was in the service of the United States at the time of making the application, in the capacity of a medical officer of the United States Army, the United States Navy, or the United States Public Health and Marine Hospital Service, and that in the service to which he was attached he had successfully passed an examination "at least equivalent to that exacted by the rules of the Illinois State Board of Health."

There are two points in this resolution that seem calculated to arrest attention. One of them is the apparent assumption that any man could be a medical officer in one of the services specified without having passed an examination which, even if not "at least equivalent" to that exacted by the Illinois board, must be held to be sufficiently rigid and comprehensive to meet the justifiable requirements of any State licensing body. The other point is that the applicant must be actually in the government service at the time of making his application. We should think that any man who had been a United States medical

officer, even if he had resigned from the service, might properly receive a State license in so far as its issue rested upon educational requirements.

The second resolution provides that applicants for the Illinois license who seek for it on the strength of having passed the examination of some other State board with which that of Illinois sustains reciprocal relations must present letters of recommendation with regard to their "moral, professional, and ethical" character. These letters must come from at least two members of the State board that issued the original license, each certifying that he has personally known the applicant for a year or more; or from a State, district, county, or city medical society of the State from which the applicant comes; or from at least two of the officers of such society, certifying that they have personally known the applicant for a year or more; or from two physicians of "national reputation" who, being residents of the applicant's State, shall certify that they have known him personally for a year or more, *and* from at least two reputable physicians of the county in which the applicant last resided. These additional requirements seem to us to be superfluous, and we think that in some instances they might work hardship. If one State board is to take another State board's certificate, let it do so without any ifs or ands or else give up the pretense of reciprocity.

In another resolution the Illinois board announced its withdrawal from the American Confederation of State Medical Examining and Licensing Boards, and gave notice that, after January 1, 1907, it would not reciprocate with any State board that exacted a supplemental examination of an applicant who had passed an examination before another board, or required that the applicant should have practised for a year in the State in which he was licensed, or demanded that the license issued to him should be dated a year previous. This rather complicated resolution hardly seems calculated to further the extension of interstate reciprocity, though it may have the effect of inducing some State boards to do away with vexatious requirements. The Illinois board probably has its own reasons for withdrawing from the national confederation, but it seems regrettable that the field of that organization should be thus narrowed.

INASPIRABLE PLEURITIC EFFUSION.

There have lately been under discussion in the Medical Society of the Paris Hospitals the questions of whether or not there are cases of pleurisy in which, though there is evidently an abundant effusion, none of the liquid, or next to none, can be withdrawn by aspiration, and that of what causes the impossibiilty of aspiration. At the meeting of May 25th, a report of which appears in the society's *Bulletins et mémoires* for May 31st, M. Henri Dufour, apropos of a previous communication by M. Hirtz, declared his belief that there were such cases, and he explained the impossibility of withdrawing any of the fluid, in spite of faultless manipulation and the use of perfect apparatus, by the existence of an utterly unyielding state of the structures surrounding the effusion.

The lung, he said, was probably bound down by organized exudate and inexpansible, the soft parts between the ribs were already drawn in as far as they could go, the mediastinum was incapable of further yielding, and the diaphragm could not ascend to a greater height without breaking loose from its attachments. In short, he likened the condition to that of a corked bottle filled with liquid. From the clinical point of view, he supported his contention by citing two cases that he had observed.

On the other hand, M. Bergé, while of course conceding the impossibility of aspirating the contents of a corked bottle, was very decidedly inclined to doubt if the physical conditions of the bottle were ever established in the human thorax, if the parts surrounding a pleuritic effusion were ever rendered so completely inmovable as to prevent entirely the withdrawal of some fluid. He admitted that there were instances in which aspiration was decidedly interfered with by an approach to such a state of rigidity, but believed there were none in which some fluid could not be removed with the aspirator. But the clinical observations of Hirtz and Dufour can hardly be ignored, and if they are not explicable on Dufour's supposition, it seems to be incumbent on those who deny its validity to bring forward another in its place.

ALBUMINURIA AND MENSTRUATION.

It not infrequently happens that albumin is found in urine voided during menstruation. This albuminuria is, however, transitory and disappears after the catamenial period ceases. This fact is certainly important from the clinical standpoint, because the urine of a woman taken during menstruation with all due precaution, in order to avoid any possible cause of error, will frequently be found to contain a little albumin, but it should be pointed out that there are two catagories of cases. In the first are included those instances in which the albuminuria arises in nor-

mal kidneys, while in the second the cases represent an albuminuria occurring in subjects whose renal structures have undergone pathological changes.

Now, facts seem to show that in a young and healthy woman, whose kidneys appear normal, whose ovarian function is quite up to the physiological standard, a transitory albuminuria may exist, due to a simple increase in some constant element of the urine. This albuminuria is merely physiological in character and probably never becomes pathological.

In the second catagory of cases, where a renal lesion has existed for some time, renal congestion produced by the catamenial molimen momentarily increases retention in the glandular filter and causes the lesions of sclerosis to progress rapidly. Should the case be one of latent nephritis, to a certain extent compensated, chronic menstrual congestion of the genital system requires increased functional activity of the diseased gland, and thus may interfere with proper therapeutic measures. Generally, however, one is dealing with chronic interstitial or parenchymatous nephritis undergoing evolution, and then at the menstrual period an acute attack becomes established, with an increase of all the symptoms. The hyperæmia accelerates the development of the renal lesions and transforms the chronic incomplete renal retention into an acute renal retention.

To sum up, it may be said that, besides certain albuminurias which can very properly be termed physiological and offer no indications for treatment, there are two other varieties which may be termed catamenial, namely, albuminuria occurring in women with irregular menstruation, which in all probability is due to the action of the toxines elaborated by an abnormal ovary, and, secondly, the albuminuria arising in women with regular menstrual functions, but who have an involutive renal affection, no matter how slight it may be. The pathogenesis of albuminuria in these cases lies in a renal reflex congestion of ovarian origin, arising in an already pathologically changed organ.

The diagnosis of the two varieties of albuminuria is important for the reason that the prognosis is quite different from that of the so called physiological albuminuria. In both toxic and congestive albuminuria the final outcome may be chronic interstitial nephritis. Consequently the prognostic significance of these chronic albuminuric outbursts is serious, while in subjects with healthy kidneys the menstrual influence has been considered as of no immediate importance, but it is, nevertheless, sufficiently serious for the practitioner to apply judicious treatment in order to attenuate, or cause to disappear, the disorders that it produces or accentuates.

THE CURABILITY OF LEPROSY.

Unna, of Hamburg, like many other conspicuous dermatologists, is of the opinion that there is a possibility of curing leprosy. In his report, read before the International Medical Congress at Lisbon (*Monatshefte für praktische Dermatologie*, June 15th), he states that he has been successful in attacking cutaneous leprosy, not macular or anæsthetic leprosy, and gives his experience, gained from treating sixty lepers during a period of twenty-two years. His sufferers were private patients, more or less well to do, all leading a useful life and wishing most emphatically to be cured so that they could again take up their several occupations. This fact is important, Unna thinks, in contrast to what is observed in the patients of leper hospitals, for example, in Norway, who are very poor people, coming from the worst kind of surroundings, shunned by their neighbors, and finding in the hospital an asylum with all possible comforts—cleanliness, sympathy, and freedom from the cares of poverty and the daily fight against hardships.

Leprosy is not an easily curable disease for which there exists an absolute specific, like mercury for syphilis. But, as there are certain cases of tertiary syphilis which do not respond to mercury and iodine alone, but to a combination of these specifics with external treatment with sulphur, so also is it in leprosy. The bacilli of leprosy cause a torpid and weakly action of the derma and nerves, which organs are not able to expel the intruders. The bacilli, furthermore, fill out all lymphatic fissures of the organs, thus suspending metabolism and making it difficult for remedies to have any beneficial influence. This is shown by the fact that subcutaneous leprosy is more easily treated than that of the cutis. But the greatest impediment is the internal formation of solid fat in the body of the bacillus, while it surrounds itself with a glœa, consisting of dead bacilli, also containing solid fat. Unna has succeeded in demonstrating by means of his Victoria blue sofranin method the dark blue living bacillus surrounded by the yellow matter of dead bacilli.

THE THERAPEUTICS OF CUTANEOUS LEPROSY.

In the same article Unna gives a complete description of his mode of treating cutaneous leprosy, followed by a schedule of daily routine

and dermatological and internal treatment, together with a collection of twenty-one prescriptions. The treatment is external and internal. Externally, Unna advises hot baths of natural waters containing sulphur and sodium or potassium, but especially his so called ink bath (*Dintenbad*), containing ferrous sulphate and tannic acid; the washing with carbolic acid or green soap; massage and pressure upon the skin; the use of pyrogallol and resorcin, chrysarobin, and ichthyol; and later the use of Paquelin's cautery. Internally, the author uses ichthyol, camphor, salicylic acid, and chaulmugra oil, which he calls the specific *par excellence* for cutaneous leprosy. This oil can be given in keratin coated pills of gynocardia soap, in which form the patients will not suffer from any unpleasant disturbances of the stomach. The hypodermic injections of gynocardia oil, introduced by Tourtulis Bey, are often objected to by the patients, as they are painful and have as sequelæ inflammation of the subcutaneous tissue. A third form of administering gynocardia oil is by enemata of the oil in milk, advocated by Hallopeau.

SUGAR AND VINEGAR IN THE TREATMENT OF HICCOUGH.

We find it recorded in the *Semaine médicale* for May 9th that Dr. J. Argellier has succeeded in cutting short the most stubborn attacks of hiccough by administering a pinch of sugar moistened with vinegar, even in cases that had resisted such energetic measures as faradization of the phrenic nerve. Our contemporary remarks that one would naturally think that it was really suggestion that operated to stop the trouble, and it is hard to resist the conviction that such was the fact, though in a severe case specifically mentioned it is stated that the patient was not informed of what was to be done. Perhaps she did not need to be told that the sugar and vinegar were given to her for the purpose of stopping her hiccough.

POPULAR PROCLAMATIONS OF "CURES."

The most absurdly extravagant pretensions of the promoters of remedies for deadly diseases, including those that are absolutely worthless, are apt to be accepted by the laity. Much disappointment and some actual harm are the results. It is not uncommon for the pretensions in question to be bolstered up by the alleged testimony of well known physicians and medical institutions. A recent case in point is one in which the secretary of the Illinois State Board of Health, Dr. James A. Egan, has justly felt called upon to repudiate statements attributed to his board by the promoters of a consumption cure. Even if a therapeutic preparation has some real virtue, its value is prone to be excessively overestimated by the public and its use without professional supervision attempted. Then, too, the vogue of a practically abandoned remedy is sometimes found lingering; within a week we have been asked by a lay correspondent for information as to where Koch's tuberculin could be obtained.

THE MOTE AND THE BEAM.

In connection with the interest manifested by the English in the shortcomings of the American meat industry, it is noteworthy that a London sanitary inspector, Mr. Foot, declares that the inspection system applied to the slaughtering business in England is a mere sham. He says: "There is nothing new in connection with the recent disclosures, except perhaps to make us wonder why we have gone to Chicago for our sensation."

"SPERMOLOROPEXY."

This is the name bestowed by Dr. N. Alevisatos, of Athens (*Semaine médicale*, May 16th), upon an operative procedure devised by him for fixing the spermatic cord in cases of retention of the testicle within the inguinal canal. The word appears to be derived from σπέρμα semen, λῶρον a thong, and πηγνύναι to fix, and, as it is the work of a modern Greek, we presume it will prove satisfactory to Dr. Achilles Rose. Dr. Alevisatos opens the inguinal canal as in an operation for the radical cure of hernia, frees the spermatic cord and testicle from adhesions, brings the testicle down into the scrotum, and anchors the cord to the periosteum of the pubic bone by means of a silk suture. He has done the operation successfully in two cases. The patients were eight and eleven years old, respectively.

Obituary.

ROBERT CRAIK, M. D., LL. D.,

OF MONTREAL.

The death of the venerable Dr. Craik, formerly dean of the Medical Faculty of McGill University, removes a conspicuous and honored figure in the Canadian medical profession. He was seventy-seven years old at the time of his death and had followed the practice of medicine since 1854. Dr. Craik's life was one of great usefulness, and he was profoundly respected.

News Items.

NEW YORK CITY AND STATE.

The Medical Society of the County of Cortland, N. Y.—The programme for a meeting held at Cortland on Friday, June 29th, included the following papers: Hæmorrhagic Diseases of the New Born, Dr. F. S. Jennings; Hæmoptysis, Dr. F. D. Reese; Hæmatemesis, Dr. H. S. Braman, of Homer; Hæmaturia, Dr. S. J. Sornberger.

The Samaritan Hospital of Troy, N. Y.—The following named physicians have been appointed members of the hospital staff: Dr. George L. Meredith, Dr. George P. Paul, and Dr. L. B. Schneider. Upon the request of the staff Dr. E. D. Ferguson becomes the chief of staff of the hospital.

Change of Address.—Dr. L. A. Whitney, during the past several years resident physician and surgeon and assistant superintendent of the New York State Hospital for Crippled and Deformed Children, at West Haverstraw, N. Y., announces his resignation from that institution and location in Rochester, N. Y., for the special practice of orthopædic surgery, after July 1, 1906.

The Seaside Hospital for Tuberculous Children.—The conditional gift of $125,000 by Mr. John D. Rockefeller for a seaside hospital for children suffering from tuberculous affections has been validated by the raising of a like amount by the Association for Improving the Condition of the Poor. The hospital will be erected as soon as the city furnishes the necessary land.

The Jamestown (N. Y.) Medical Society held its annual meeting on June 28th, when the following officers were elected for the ensuing year: President, Dr. J. W. Nilson; vice-president, Dr. H. A. Eastman; secretary and treasurer, Dr. W. D. Wellman; trustee, Dr. M. N. Bemus. Dr. Morris, the retiring president, was presented with a handsome century clock by the twenty members present at this meeting as a token of their esteem for him.

The Medical Society of the County of Ontario, N. Y.—A quarterly meeting of this society will be held at Geneva, on Tuesday, July 10th. The following programme has been arranged for the meeting: The Quinine and Iron Treatment for Pneumonia, Dr. C. F. Nieder; Complications Arising After Intra Cranial Operation, but Improvement Without Further Interference, Dr. George F. Cott, Buffalo; Pelvic Disease with Mental Disturbances, Dr. A. L. Beahan; Tumors of the Thyreoid Gland from a Surgical Standpoint, Dr. M. B. Tinker.

The Brooklyn Central Dispensary, 29 Third avenue, has created a department of gastrointestinal diseases which will be under the supervision and direction of Dr. Mark I. Knapp, of New York. Clinical lectures on gastrointestinal cases will be held by Dr. Knapp every Wednesday afternoon at three o'clock instead of on Thursday, as heretofore. To these clinics and demonstrations all physicians are welcome. Cases may be brought for diagnosis also by outsiders. Regular postgraduate courses in gastrointestinal diseases will be given at the Dispensary by Dr. Knapp commencing in the fall of this year.

A Rare Gift to the New York Botanical Garden.—The garden has recently received from E. Merck & Co., of Darmstadt and New York, a collection of plant constituents which consists of alkaloids, glucosides, amaroids, sugars, starches, plant acids, coloring principles, fats, waxes, and some rare aromatic principles. The number of exhibits is between 400 and 500, comprising not only the most powerful poisons, the most active medicinal principles, and other things for which uses are now known, but many things extracted from plants only experimentally, for scientific purposes, for which it is hoped uses may be developed in the future.

The Vassar Hospital, Poughkeepsie, N. Y.—The trustees of this hospital have replaced the old staff, at the head of which was Dr. Guy C. Bayley, who retired on June 30th. He is succeeded by Dr. Henry Greenwood Bugbee, who has served in St. Luke's Hospital, New York, in charge of the pathological department, and as house surgeon. His assistant is Dr. Ellen Gardner Littell, who has also served in the pathological department and as house physician at St. Luke's. Miss Blanche Eldon becomes head nurse. The revolution in the staff was made, it is understood, because of the criticism that the hospital, rich as it is, was getting behind the times.

A Sanitarium for Consumptives at Yonkers.—A tract of land comprising 110 acres has been purchased by Mr. A. S. Cochran, of Yonkers, who purposes to erect a sanitarium for the treatment of tuberculosis. When completed the sanitarium will be turned over to the city with an endowment sufficient to pay all expenses for the first five years. The project has been approved by the city authorities and permission given for the erection of the building, which will have twenty-five beds, and provision will be made for the treatment of many other cases in tents. The treatment will be free to the patients. Incipient cases will be given the preference, especially where the patients are still able to attend to their work. It is expected that the opening will take place late in the autumn.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending June 30, 1906:

	June 30.		June 23.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	39	14	33	2
Smallpox	3	..	4	..
Varicella	59	..	110	..
Measles	440	12	611	20
Scarlet fever	110	9	160	4
Whooping cough	39	4	35	4
Diphtheria	242	30	288	16
Tuberculosis pulmonalis	362	180	396	177
Cerebrospinal meningitis	29	16	8	9
Totals	1,323	265	1,645	232

PHILADELPHIA AND THE MIDDLE STATES.

Repapering Without Scraping.—It has been proposed by the city government of Camden, N. J., to prohibit any repapering without previously scraping the walls, because they may harbor infectious material.

Dr. White's Condition.—Advices from the West assure us that Dr. J. William White is doing well, and that his convalescence is rapidly advancing. He is very grateful for all the expressions of sympathy which he has received.

Heat Cases.—Because of the excessive heat and humidity of the past week all hospitals have made preparations for the care of all heat cases. Special arrangements have been made to take care of the patients out of doors.

New Hospital in Chestnut Hill.—Plans have been drawn for the erection of a new hospital at the corner of Graver's Lane and Twenty-eighth Street. It will be fitted up with the most approved appliances and contain thirty private rooms.

Chief Residentship at the Philadelphia Hospital—Because of the failure of all of the applicants to pass the required civil service examination for the position of chief resident at Blockley, another examination will be held in the autumn which will be made less exacting.

Summer Announcement.—Last week's issue of the *Weekly Roster* announced that the scientific societies would discontinue until October with the exception of the Medico-legal Society, which has a meeting scheduled for July. The *Roster* itself will resume with the beginning of the meetings.

Smallpox in Chester, Pa.—Within an incredibly short time after the discovery of a virulent case of variola in a court, a large staff of physicians was sent to vaccinate the inhabitants of the court. Much difficulty was experienced. Because of the smallpox scare in Chester two years ago the mayor may ask that all citizens be vaccinated.

Fire Apparatus at the Jewish Hospital.—Howard A. Loeb has made the Jewish Hospital a present of a complete and highly effectual fire fighting plant. The pump will have the capacity of 200 gallons a minute and a separate building has been erected for its accommodation. A fire brigade will be formed, whose members will comprise only *attachés* of the hospital.

Bequests.—By the will of Mrs. Nixon-Nirdlinger the Jewish Seaside Home, the Jewish Foster Home, the New York Hospital for Crippled Children, and St. Anthony's Poor each receive $500. The will of Joseph Sinnott makes many bequests to charitable organizations, perhaps the most notable of which is a fund of $10,000 left in trust to the hospital of the University of Pennsylvania to endow a room for the use of men who have been or are newspaper men or

journalists. The bequest is in the memory of the testator's deceased son, Joseph E. Sinnott.

Meat Inspection.—As a result of the inspection of the slaughter houses and stores where meat and poultry are sold, numbering in all 2,985, thirty-seven of the slaughter houses and wholesale meat establishments have received notice to close their quarters immediately and permanently. Many of the others have also received notices requiring them to place their establishments in a sanitary condition within a specified time or they too will be obliged to cease business in the present buildings. Only five of the 134 slaughter houses and wholesale houses have been found in a condition to satisfy the sanitary inspectors. There is already some improvement in the management of these places.

The Health of Philadelphia.—During the week ending June 23rd the following cases of transmissible diseases were reported to the bureau of health:

	Cases.	Deaths.
Malarial fever	2	2
Typhoid fever	130	18
Scarlet fever	22	1
Chickenpox	22	0
Diphtheria	67	8
Cerebrospinal meningitis	3	0
Measles	82	2
Whooping cough	62	4
Tuberculosis of the lungs	124	59
Pneumonia	23	23
Erysipelas	5	0
Puerperal fever	2	4
German measles	5	0
Trachoma	1	0
Mumps	8	0
Cancer	26	30

The following deaths from other transmissible diseases were reported: Dysentery, 2; tuberculosis other than tuberculosis of the lungs, 7; diarrhœa and enteritis under 2 years of age, 41. The total deaths numbered 429, in an estimated population of 1,469,126, corresponding to an annual death rate of 15.21 in 1,000 of population. The infant mortality was 115, under 1 year of age 95, between 1 and 2 years of age 20. There were 35 stillbirths, 21 males and 14 females. The temperature was rather high, humidity above normal and 3.17 inches of rain fell.

BOSTON AND NEW ENGLAND.

Personal.—After a continuous service of thirty-seven years as secretary of the New Hampshire Medical Society, Dr. Granville P. Conn has resigned. His place has been filled by the election of Dr. D. E. Sullivan, of Concord.

The Approaches to the New Harvard Medical School.—An anonymous graduate has made the offer to the city of Boston of contributing $60,000 toward building the street leading from the fenway to Longwood avenue, as an approach to the medical school, and the city has accordingly agreed to construct the street. The new street is to be a boulevard one hundred feet wide with a driveway of forty feet, and parks twenty feet wide on each side and walks ten feet wide on either side.

The Oxford County (Me.) Medical Association.—This association held its annual meeting and *Ladies' Night* at South Poland, on Monday, June 25th. Officers were elected for the ensuing year as follows: President, Dr. Eugene M. McCarty, of Rumford Falls; vice-presidents, Dr. J. G. Littlefield, of South Paris, and Dr. F. E. Wheeler, of West Paris; secretary and treasurer, Dr. H. L. Bartlett, of Norway; executive committee, Dr. B. F. Bradbury, of Norway; Dr. H. R. Farris, of Oxford, and Dr. F. P. Wheet, of Rumford Falls. The annual oration was by Frank H. Haskell, Esq., of Portland, his subject being Legal Medicine.

The Mortality of Boston.—The total number of deaths reported to the board of health for the week ending June 30th was 173, against 181 the corresponding week last year, showing a decrease of 8 deaths, and making the death rate for the week 15.16. Of this number 86 were males and 87 were females; 169 were white and 4 colored; 93 were born in the United States, 75 in foreign countries, and 5 unknown; 31 were of American parentage, 124 of foreign parentage, and 18 unknown. The number of cases and deaths from infectious diseases reported this week is as follows: Diphtheria, 49 cases and 1 death; scarlatina, 30 cases and 2 deaths; typhoid fever, 12 cases and 1 death; measles, 32 cases and 0 deaths; tuberculosis, 37 cases and 18 deaths. The deaths from pneumonia were 9, whooping cough 2, heart disease 33, bronchitis 1, and marasmus 5. There were 15 deaths from violent causes. The number of children who died under one year of age was 28; the number under five years of age, 38. The number of persons who died over sixty years of age was 37. The deaths in public institutions were 72.

The Harvard Medical Alumni Association.—At a meeting held at Boston on June 26th, the following named officers were elected to serve for three years: President, Alfred Worcester, M. D., 1883, of Waltham, Mass.; vice-presidents, Frederick W. Borden, M. D., 1868, of Ottawa, Ontario; Richard C. Cabot, M. D., 1892, of Boston, Mass.; Edward F. Cushing, M. D., 1888, of Cleveland, Ohio; John M. T. Finney, M. D., 1889, of Baltimore, Md.; Isadore N. Bloom, M. D., 1881, of Louisville, Ky.; Thomas F. Harrington, M. D., 1888, of Lowell, Mass.; Josiah N. Hall, M. D., 1882, of Denver, Col.; Erasmus D. Leavitt, M. D., 1870, of Butte City, Mont.; George B. Shattuck, M. D., 1869, of Boston, Mass.; Edmund H. Stevens, M. D., 1867, of Cambridge, Mass.; secretary, David Cheever, M. D., 1901, of Boston, Mass.; treasurer, William H. Prescott, M. D., 1888, of Boston, Mass. For councillors to serve to the end of June, 1910: George Emerson Brewer, A. B., 1881 (Hamilton), M. D., 1885, of New York city; surgical interne, Boston City Hospital; professor of clinical surgery, College of Physicians and Surgeons of New York; surgeon to Roosevelt Hospital; attending surgeon to City Hospital; Charles Follen Folsom, A. B., 1862, A. M., M. D., 1870, of Boston, Mass., late visiting physician to Boston City Hospital; overseer of Harvard College, 1891-1903; Frank Burr Mallory, A. B., 1886, A. M., M. D., 1890, of Boston, Mass., associate professor of pathology, Harvard Medical School; first assistant visiting pathologist, Boston City Hospital; pathologist to Children's Hospital. A resolution was proposed and adopted to spread upon the records of the association, and send a copy to the family of the deceased, an expression of appreciation of the work accomplished by the late Dr. James R. Chadwick, founder of the association, and one of its most ardent active members.

BALTIMORE AND THE SOUTH.

The Tazewell County (Va.) Medical Society held its annual meeting at Tazewell on Thursday, June 28th. The following officers were elected for the ensuing year: President, Dr. Isaac Pierce; first vice-president, Dr. George M. Walker; second vice-president, Dr. L. J. Stump; secretary, Dr. C. T. St. Clair; treasurer, Dr. W. I. Painter.

The Pottawatomie County (Ks.) Medical Society.—At a meeting held at St. Marys on Wednesday, June 20th, the programme consisted of the following papers: The Use of the Microscope in General Practice, Dr. Benjamin Brunner; discussed by Dr. Simonton and Dr. McManis; The Study of the Skin in Disease, Dr. W. M. Reitzel; discussed by Dr. Brunner, Dr. Wilholt, Dr. Cave, and Dr. McManis; Constipation, Dr. O. R. Searl; discussed by Dr. Wilhoit, Dr. Gundry, Dr. Reitzel, Dr. Simonton, Dr. Cave, and Dr. Conlan; Cancer, Dr. J. W. Wilhoit; discussed by Dr. Simonton, Dr. Reitzel, Dr. Cave, and Dr. Brunner; Care of the Expectant Mother During Pregnancy and Confinement, Dr. P. T. Conlan; discussed by Dr. Cave and Dr. Gundry.

CHICAGO AND THE WEST.

The Dubuque County (Iowa) Medical Society held a meeting at Dubuque on Tuesday, June 26th. The programme arranged for the meeting included the following titles: Removing Foreign Bodies from the Œsophagus, Trachea and Bronchi, by Dr. E. R. Lewis, of Dubuque; The Question of Skin Grafting Suggested by Remote Effects in Cavity Repair, by Dr. H. B. Young, of Burlington; Report of a Case of Pernicious Anæmia, with Postmortem Findings, by Dr. M. J. Kenefick, of Algona; The So Called Anæmias, by Dr. Christian Johnsson, of Clinton; Battle Between Bacteria and the Body, by Dr. George Minges, of Dubuque. An orthopædic clinic at Finlay Hospital was conducted by Dr. John Ridlon, of Chicago.

The Minnesota State Medical Association.—At the annual meeting, held at Minneapolis on June 20-22, 1906, the election of officers resulted as follows: President, Dr. H. A. Tomlinson, of St. Peter; vice-presidents, Dr. E. Y. Chilton, of Howard Lake; Dr. F. W. Penhall, of Morton, and Dr. P. C. Pilon, of New Paynesville; treasurer, Dr. R. J. Hill, of Minneapolis; secretary, Dr. Thomas McDavitt, of St. Paul; representative for the council for three years for the first district, Dr. E. A. Hensel, of Alexandria; repre-

sentative for three years from the fourth district, Dr. E. A. Knight; alternate delegate to the American Medical Association for two years, Dr. J. J. Ecklund, of Duluth. Duluth was selected as the place of the next meeting, the third Tuesday in August, 1907.

The North Idaho District Medical Society held its quarterly meeting at Cœur d'Alene, on Tuesday, June 19, 1906. The programme consisted of a surgical clinic conducted by Dr. C. P. Thomas, at St. Luke's Hospital, and the following papers: Some of the Many Uses of Normal Salt Solution, by Dr. A. A. Matthews; Special Diseases of the Stomach, by Dr. E. R. Northrup; Technique in Abdominal Operations, by Dr. A. R. Cunningham; Importance of Early Diagnosis in Nervous Diseases, by Dr. J. R. Neely. The president of the society is Dr. J. N. Ally, of Lapwai, Idaho, and Dr. J. M. Lyle, of Peck, Idaho, is the secretary.

The State Medical Society of Wisconsin.—At the annual meeting, held at Milwaukee June 27-29, 1906, the election of officers resulted as follows: President, Dr. L. H. Pelton, Waupaca; first vice-president, Dr. A. J. Burgess, Milwaukee; second vice-president, Dr. W. E. Graund, Superior; third vice-president, Dr. W. F. Pinkerton, Prairie du Chien; secretary, Dr. Charles S. Sheldon, Madison; treasurer, Dr. S. S. Hall, Ripon. The council, with one member from each district, was chosen as follows: First district, Dr. H. B. Sears, Beaver Dam; second, Dr. G. Winderscheim, Kenosha; third, Dr. F. T. Nye, Beloit; fourth, Dr. C. A. Armstrong, Boscobel; fifth, Dr. J. V. Mears, Fond du Lac; sixth, Dr. J. S. Walbridge, Berlin; seventh, Dr. W. T. Searles, Sparta; eighth, Dr. T. J. Redelings, Marinette; ninth, Dr. D. L. Sauerhering, Wausau; tenth, Dr. E. L. Boothby, Hammond; eleventh, Dr. J. M. Dodd, Ashland, and twelfth, Dr. A. T. Holbrook, Milwaukee. The council elected Dr. Boothby as chainman and Dr. Holbrook, secretary. The new programme committee consists of Dr. W. E. Brown, Superior; Dr. A. W. Gray, Milwaukee, and Dr. C. S. Sheldon, Madison.

Medical Education in California.—An important step in medical education in California has been taken by the University of California in transferring from San Francisco to Berkeley all instruction in the first two years of the College of Medicine. Students desiring admission to the medical department of the university must have completed certain studies in physics, chemistry, zoology, German, and French, which ordinarily require two years of residence at a university or college of good standing. The first two years of the strictly professional work is devoted to anatomy, physiology, and pathology. It is believed by the university that training in these disciplines may best be received at the seat of the university, where the opportunities of laboratories and libraries in allied subjects are immediately available, and where a thoroughly scientific atmosphere prevails.

These departments of anatomy, physiology, and pathology, with their very complete and thoroughly modern equipment, will be removed to Berkeley during the present summer. Instruction in these departments is given by men who devote their whole time to instruction and research, not engaging in practice. As heretofore, the work of the last two years of the medical course—the clinical years—will be carried on in San Francisco, in the affiliated college buildings overlooking Golden Gate park, the Golden Gate, and the ocean. The removal of the other departments to Berkeley will make available increased room in the medical building for clinical purposes. The dispensary, heretofore situated in what is now the burned district of San Francisco, will now be established in the medical building. Dr. Jacques Loeb professor of physiology; Dr. Joseph M. Flint, professor of anatomy; and Dr. Alonzo E. Taylor, professor of pathology, are the heads of the three departments affected by the change.

Statement of Mortality in Chicago for the Week Ending June 23, 1906, compared with the preceding week and with the corresponding week of 1905. Death rates computed on United States Census Bureau's figures of midyear population—2,049 185 for 1906, 1,990,750 for 1905:

	June 23, 1906.	June 16, 1906.	June 24, 1905.
Total deaths, all causes	423	436	439
Annual death rate in 1,000	10.76	11.09	11.49
Sexes—			
Males	238	262	262
Females	185	174	177
Ages—			
Under 1 year of age	60	79	67
Between 1 and 5 years of age	33	51	42
Between 5 and 20 years of age	36	47	43
Between 20 and 60 years of age	214	192	202
Over 60 years of age	80	67	85
Important causes of death—			
Apoplexy	6	6	12
Bright's disease	36	28	36
Bronchitis	6	9	12
Consumption	54	60	52
Cancer	23	18	21
Convulsions	1	6	7
Diphtheria	5	9	3
Heart diseases	41	28	36
Influenza	1	0	0
Insolation	1	2	1
Intestinal diseases, acute	20	33	25
Measles	2	5	2
Nervous diseases	19	22	24
Pneumonia	57	50	40
Scarlet fever	11	15	2
Smallpox	0	0	3
Suicide	6	4	8
Typhoid fever	4	11	5
Violence (other than suicide)	32	34	38
Whooping cough	3	4	7
All other causes	95	92	105

GENERAL.

The American Roentgen Ray Society will hold its seventh annual meeting at Niagara Falls, N. Y., on August 29, 30, and 31, 1906. The programme includes the names of the best known x ray workers. The officers of the society are: President, Dr. Henry Hulst, Grand Rapids, Mich.; secretary, Dr. George C. Johnston, Pittsburgh, Pa.; treasurer, Dr. Leavitt E. Custer, Dayton, Ohio; vice-presidents, Dr. Russell H. Boggs, Pittsburgh, Pa.; Dr. Clarence E. Skinner, New Haven, Conn.; Dr. Ennion G. Williams, Richmond, Va.; Dr. Eugene W. Caldwell, New York, N. Y. Full information regarding the meeting and application blanks for membership may be obtained by addressing the secretary, Dr. George C. Johnston, 611 Fulton Building, Pittsburgh, Pa.

American International Congress on Tuberculosis.—The officers of this congress announce its next session for November 14, 15 and 16, 1906, at the city of New York. The published call is as follows: Office of the President, Austin, Texas, February, 1906. The executive officers of the American Congress on Tuberculosis, with the approval of its governing council announce that the body will hold a congress in the city of New York, commencing the 14th day of November, 1906, to be held three days. All the officers, members, and delegates are invited to attend, and to contribute papers to be read at the congress, and to send the title of papers to the secretary as early as possible. This congress will be open to members of all the professions, legislators, statesmen, the intelligent laity, and the reverend clergy. An enrolling fee of $3 is solicited, to defray the expenses of a bulletin, which should be sent forthwith to the treasurer. All the governments in the western hemisphere are invited to send delegates to this congress and to cooperate in its labors. The public press, lay and medical, are hereby invited to give publicity to this announcement. F. E. Daniel, M. D., Austin, Texas, president; Matthew M. Smith, M. D., Austin, Texas, secretary; Clark Bell, Esq., LL. D., 39 Broadway, New York, treasurer.

Appointments to the Medical Corps of the Army.—The *Army and Navy Journal*, for June 23, 1906, says that the examinations of the graduates of the Medical School in Washington for commissions as sassistant surgeons in the army were completed this week and finally approved by the Surgeon General of the Army. Eleven of the thirteen graduates of the school qualified both professionally and physically and will be commissioned. They are, in the order of merit and in the order in which they will be commissioned, as follows: Albert G. Love, of Tennessee; Harold Wellington Jones, Omar Walker Pingston, and Charles E. Freeman, of Missouri; Mathew A. Reasoner, of Illinois; Henry J. Nichols and Ferdinand Schmitter, of New York; Louis H. Hanson, of Wisconsin; Lucius L. Hopwood, of Iowa; Howard A. Reed, of Pennsylvania; Henry D. McIntyre, of Vermont. Two of these new assistant surgeons will be assigned to duty in Alaska, two on board transports plying between San Francisco and Manila, and the remainder will immediately be ordered to the Philippine Islands for duty. There are still eighteen vacancies in the grade of assistant surgeon in the Medical Department of the Army. If the retiring board before which Major William L. Kneedler, surgeon, has been ordered for examination finds him physically disqualified for active service, another vacancy will be caused by the promotion to the grade of major of Captain and Assistant Surgeon E. L. Munson.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL

June 28, 1906.

1. The Nature and Progress of Malignant Disease. Oration in Surgery at the Fifty-seventh Annual Session of the American Medical Association, Held at Boston, June 5-8, 1906, By JOSEPH D. BRYANT.
2. What Effective Measures are there for the Prevention of the Spread of Syphilis and the Increase of Prostitution? By CHARLES GREENE CUMSTON.
3. Consideration and Treatment of the Accidents of Surgical Anæsthesia, with Special Reference to Prevalent Drug Treatment. By B. H. CASWELL.

2. What Effective Measures Are There for the Prevention of the Spread of Syphilis and the Increase of Prostitution?—Cumston cites Michel Lévy, who said many years ago: "The extirpation of this leprosy of our time that is called syphilis is not above the power of governments. The sequestration and leproseries put an end to the old scourge, leprosy; the plague has been the object of an extensive and expensive prophylactic control; every nation had made sacrifices to do away with the germ of smallpox, yet syphilis has caused more harm than all these diseases put together." Cumston then says that one of the most important means at our disposal for reducing the increase and spread of syphilis certainly resides in hospitalization, not only as a prophylaxis, but also as treatment, it should be made obligatory. He concludes his article in saying that to deal rationally with the spread of syphilis and prostitution, we should take into consideration the control of existing morals and opinions, teach the youth of our country the evils accruing from venereal diseases, and the erection of proper hospitals for those already afflicted, and who may become dangerous to society from this fact.

3. Consideration and Treatment of the Accidents of Surgical Anæsthesia, with Special Reference to Prevalent Drug Treatment.—Caswell considers the physiology of the vascular system and the influence of anæsthetics upon it. The general anæsthetics considered are ether and chloroform. The drug generally used in anæsthesia accidents are strychnine, the three nitrites, nitroglycerin, amyl nitrite, and sodium nitrite, digitalis (digitalin), adrenalin, atropine, hyoscyamine, hyoscine, caffeine, and alcohol. The main causes of death under anæsthesia are shock, collapse, shock with collapse, asphyxia, from mechanical obstruction or otherwise, the status lymphaticus. Of these shock is far the most important emergency which we have to deal with. In shock the most important feature is the lowered blood pressure and the best method of raising it is to produce intense vasoconstrictor impulses, while in collapse, stimulation of the vasomotor centre will produce a response. The best treatment in shock and collapse is prophylaxis, while of drug there is hardly one of any use except adrenalin. In mechanically caused asphyxia the foreign body (tongue, etc.) should be removed. Of the status lymphaticus little is known, excepting that it affects the lymph glands and channels in some manner.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

June 30, 1906.

1. The Legal Responsibility of the Physician for the Unborn Child. Chairman's Address in the Section on Obstetrics and Diseases of Women, at the Fifty-seventh Annual Session of the American Medical Association, Boston, 1906, By C. S. BACON.
2. Dendritic Keratitis of Malarial Origin, By E. C. ELLETT.
3. Retrobulbar Optic Neuritis Following Childbirth. By CHARLES J. KIPP.
4. Medical Phases of Dental Disorders, By SAMUEL A. HOPKINS.
5. Report of Two Cases of Infantile Scurvy, By ALICE M. STEEVES.
6. Relation of Physicians to the So Called Ethical Proprietary Medicines, By G. B. KUYKENDALL.

1. The Legal Responsibility of the Physician for the Unborn Child.—Bacon reviews the legal responsibility of the physician for the child in utero, the legal status of the fœtus, the laws of various countries and states referring to the status of the unborn child, the legal justifiability of fœticide, indications for operation, and concludes by saying that he has been disappointed in finding less material than was expected. It shows that the legal responsibilities of the physician are comparatively simple; no physician need be in doubt in any case. If he believes that the preservation of the life of the mother requires the sacrifice of the child he may operate without fear. It is always better, however, to fortify his opinion by consultation with a reputable colleague. The law does not recognize that the life of the child in utero is of equal value with that of the mother. In deciding on his moral responsibilities, however, the physician may have much greater difficulty; many operations would be legally safe which would be undoubtedly wrong. It is difficult to deny to the human fœtus the innate right of every human being, the equal right to life. On the protection of this moral law the child in utero must chiefly rely for its preservation. The moral responsibilities of the physician for the child in utero are greater than his legal responsibilities. The only ground on which the physician can stand when he decides to destroy the fœtus is a kind of implied authorization by the state, which agrees to uphold the right of the mother to self preservation when her life is endangered by that of the fœtus.

3. Retrobulbar Optic Neuritis Following Childbirth.—Kipp reports a case of recurrent retrobulbar optic neuritis of one eye following childbirth, and ending in atrophy of the optic nerve, with whitening of part of the eyelashes and eyebrow of the same side, the eye becoming totally blind. The author thinks it most probable that the pregnancy caused a disturbance of the vascular supply, a congestion at or near the apex of the orbit, and that this produced pressure on the optic nerve and its sheaths, and also on the branches of the ophthalmic branch of the fifth nerve. The case seems to be the only one in which the whitening of the eyebrows and lashes has been observed in connection with retrobulbar optic neuritis; only a part of the lashes and of the hair of the brow were affected, namely, those in line with the course of the supraorbital nerve. The author reports a second case of retrobulbar optic neuritis of one eye, following childbirth, with recovery of vision.

5. Report of Two Cases of Infantile Scurvy.—Steeves concludes from her experience that infantile scurvy is not rare in orphan asylums and similar institutions. On examining the mouths of 180 girls at the Lancaster Industrial School she found twenty per cent. with thickened spongy gums, purulent and mucoid saliva, and with the mucous membrane of the nose, mouth, and throat inflamed. These patients invariably complained of rheumatic pains, and while the condition was not strictly scorbutic, it seemed to suggest a field for investigation. Infantile scurvy is not infrequently complicated with acute pulmonary diseases, and in such cases there is a rise in temperature, accompanied by respiratory and cardiac disturbances; it is also frequently a complication of rickets. When not complicated the prognosis is favorable. The treatment consists of regulation of diet. Milk, beef juice, fruit juice (preferably orange and lemon), and tonics must be given as the case demands. Plenty of fresh air, water, and cleanliness are essential.

MEDICAL RECORD.

June 30, 1906.

1. The Science and Art of Fitting Glasses, By A. EDWARD DAVIS.
2. What Has Surgery Left to Medicine in the Treatment of Peritonitis in Adults and Children? By HENRY W. BERG.
3. The Examination of the Spinal Fluid in Dementia Paralytica, By PAUL B. BROOKS.
4. Precise Definitions for Many Diseases, By JAMES FARQUHARSON LEYS.

1. The Science and Art of Fitting Glasses.—Davis gives a historical sketch of the progress made in the last hundred years in the science and art of fitting glasses. He next considers the two different methods usually employed at present in fitting glasses: Objective, the use of the ophthalmoscope, of the ophthalmometer, and of the retinoscope; and the subjective by means of test letters and types, astigmatic charts and letters, with the assistance of trial lenses and prims, kinescopy, and tests based on Schreiner's experiment. Of the adjustment of glasses the author says that all the good work of a carefully conducted examination may be brought to naught by having the glasses poorly or improperly adjusted on the patient's face. The prime considerations in the adjustment of glasses are: First, that the lenses should be properly centred in front of the eyes, the centre of the glasses corresponding with the visual line (the centre of the pupils will do), if the glasses are to be worn for distance; or with the centres of the glasses slightly to the nasal side of the centre of the pupil (one to two millimetres) if for reading or near work. A compromise between these two positions should be made if the glasses are to be worn all the time; second, the plane or face of the glass should be perpendicular to the visual line. In distance glasses the face of the glass should be perpendicular, while in reading glasses it should be tilted forward from the perpendicular from five to ten, or even fifteen, degrees; third, the nearness of the glass to the eye must be considered. Glasses should be worn as close to the eye as possible, not to touch the eyelashes. A wider field of vision is obtained in this way. The diameter of the glass should be large enough so that the patient does not see through the edge of the glasses. Spectacles are usually to be preferred to nose glasses, if the patient can be induced to wear them.

3. The Examination of the Spinal Fluid in Dementia Paralytica.—Brooks notes that, while it does not seem to him, judging from his own observation and from a review of the literature, that it is yet possible to make a positive diagnosis of dementia paralytica from the cytological examination of the spinal fluid, as a few writers have asserted, he feels that it bids fair to become a valuable aid to diagnosis in some doubtful cases of this condition. Aside from its value in paresis, it is not infrequently of service in other conditions. In the case of meningeal syphilis which he cites, associated with meningitis, the character of the cells in the spinal fluid (an increase both of lymphocytes and polynuclear leucocytes), established a diagnosis which had been undetermined for weeks, previous to admission. Proper medication, administered on the strength of this examination, resulted in early and complete recovery, whereas, before this time, the patient had been failing gradually, but surely. His experience has led him to believe that with reasonable asepsis the withdrawal of not more than 5 c.c. of fluid, which is all that is necessary in any case, and the detention of the patient in bed for three or four days, the operation is attended with no danger. In 38 punctures the author has had no mishap, and apparently the operation has been without ill effect of any kind. By taking the necessary precautions it may also be made nearly, if not quite, painless.

BRITISH MEDICAL JOURNAL.

June 16, 1906.

1. Remarks on Certain Injuries Commonly Associated with Displacement of the Head of the Humerus, By R. JONES.
2. A Clinical Lecture on Torticollis or Wryneck, By A. H. TUBBY.
3. Wound of Thoracic Duct: Ligature: Recovery, By A. FULLERTON.
4. The Ætiology and Treatment of Oblique Inguinal Hernia, By R. W. MURRAY.
5. Some Comparison of Phthisical with Nontuberculous Males, Chiefly in Respect of Healthy Height Weight Ratio, and of Mouth Breathing, By W. C. RIVERS.
6. Two Cases of Amœbic Abscess of Liver Cured by Aspiration and Injection of Quinine Into the Cavity Without Drainage, By L. ROGERS and R. P. WILSON.
7. A Case of Pneumococcic Arthritis, By S. RAW.

2. Torticollis.—Tubby divides cases of torticollis or wryneck into two chief varieties: (1) True: (a) fixed, or congenital form; (b) reflex, spasmodic, and acute forms. (2) False. The fixed or congenital form is primarily due to a change in the sternomastoid muscle, and then to secondary contraction in the trapezius and other muscles of the neck and deep fascia. The shape of the cervical spine is also distinctly altered. As a rule the affection is on the right side, the head is inclined to the right shoulder, and the face is rotated to the left. It occurs more frequently in males than in females, and is common in children who have been born by breech presentation. With the after coming head the pull upon the sternomastoid is productive of the deformity. It is also quite common in children with congenital syphilis, there being a gummatous deposit in the muscle. In some cases there is a distinct lump in the neck, due to a hæmatoma, which has a great deal to do with the affection. The pathological changes are distinct and definite, consisting of fibroid change, the muscular fibre being replaced by dense cicatricial tissue. There is usually quite marked facial asymmetry, due to pressure on the carotid vessels and a consequently smaller supply of blood on the affected side. The only condition easily mistaken for fixed torticollis is that which sometimes arises in spinal caries. In infants with a history of syphilis, antisyphilitic treatment should be instituted. In older children the only efficient method of treatment is by operation. Subcutaneous tenotomy of the muscle is dangerous or noneffective. The author employs an anterior oblique incision along the anterior border of the sternomastoid for about two inches. Then not only must the sternomastoid be divided, but also the processes of the deep cervical fascia which are also contracted. The head must be put up in the over corrected position and kept there for two or three weeks, after which suitable exercises should be practiced. Reflex torticollis is undoubtedly due to irritation affecting the spinal accessory nerve. The usual causes are enlarged glands from carious teeth or other irritation. It disappears when the cause of the spasm is removed. Spasmodic torticollis is due to some form of cerebral lesion, probably due to sclerotic changes in the vessels. The sternomastoid is the muscle primarily affected, but the spasm spreads quickly to other muscles, the trapezius being often thus secondarily involved. Acute torticollis is nothing but an ordinary stiff neck—an acute rheumatism of the neck setting up a certain amount of temporary myositis. In a few cases it does not respond to treatment and develops into the spasmodic form. The false form of torticollis is associated with spinal caries, and follows cicatrices of burns and wounds in the neck.

4. Oblique Inguinal Hernia.—Murray states that all the evidence we possess is in favor of the view that the main factor in the causation of oblique inguinal hernia at all periods of life is the presence of a pre-

formed sac, a patent funicular process, and whether the bowel will or will not enter this funicular process depends primarily upon the size of the opening at the internal abdominal ring, and, secondarily, upon the strength of the muscles guarding it. As a general rule the only satisfactory way of treating a hernia is by means of an operation, and other things being equal, the earlier in life the operation is performed the better. The essential point in the operation is to so completely obliterate the sac as to render the peritoneal surface at this level free from any dimpling or depression. In order to ensure this the inguinal canal must be opened up and a ligature applied to the sac at the level of the internal abdominal ring. The divided aponeurosis of the external oblique should be subsequently united by overlapping, for the inguinal canal is thus narrowed, lengthened, and its original obliquity restored.

5. **Physique and Tuberculosis.**—Rivers advances the following reasons in favor of the view that an hereditary causal relation to pulmonary tuberculosis may be predicated of mouth breathing and deficient physique: 1. That both conditions prevailed to a much greater extent among consumptive males, quite independently of their disease, than among a comparable series of nontuberculous men. 2. That whereas some causes of mouth breathing, as also physical build, are known to be hereditary, a family history of phthisis is much more often given by those who are mouth breathers or of deficient physique—whether they be healthy or phthisical—than by others. 3. That the physique incidence of mouth breathing in phthisical subjects probably differs from that in the nontuberculous. 4. That consumptives of a naturally good height weight ratio fall ill, on an average, at a later age than do others.

THE LANCET.

June 16, 1906.

1. Some Stray Thoughts Upon Tuberculosis (*Bolingbroke Lecture*), By E. Owen.
2. Aphasia (*Lecture III*), By B. Bramwell.
3. On the Occurrence of Metrorrhagia After the Menopause in Cases of Ovarian Tumors, By A. H. V. Lewers.
4. On the Vacuolated Mononuclear Cells in the Blood of the Guinea Pig (Preliminary Communication), By J. C. G. Ledingham.
5. A Case of Complete Removal of a Multilocular Cystic Tumor of the Pancreas; Colocolic Anastomosis Sixteen Days Later; Recovery, By J. D. Malcolm.
6. Hernia of the Vermiform Appendix, Probably Infantile, and Perforated by a Pin While in the Scrotum, By J. A. C. Macewen.
7. Femoral Hernia, Herniated Appendix, and Suppurative Appendicitis Due to a Pin, By L. C. S. Broughton and J. T. Hewetson.
8. Diverticulum of the Bladder; Prostatic Obstruction; Operation, By H. A. Lediard.
9. A Case of Intranasal Chancre Simulating Diphtheria, By J. D. Rolleston.
10. Examination of the Fæces, By R. Baumstark.
11. An Analysis of the Results Obtained at the Sidlaw Sanatorium During the Two Years Ending April 30, 1905. By R. C. Macfie.
12. A Case of Cerebral Tumor: Operation: Recovery, By H. Smith and C. C. Elliott.
13. On the Specific Nature of the Spirochæta of the African Tick Fever, By A. Breiul.

1. **Tuberculosis.**—Owen, in discussing various points in the history of the treatment of tuberculosis, dwells upon Wright's method of treatment by means of injections of tuberculin. The leucocytes of the body should destroy the tubercle bacilli, but this they are not always able to do. Wright holds that the injection of a vaccine into the patient's blood causes the pouring out into it of substances (opsonins) which enter into chemical combination with the bacilli rendering them susceptible to the attacks of the leucocytes. The vaccine is prepared by grinding tubercle bacilli to a fine powder, suspending it in dilute glycerin, and sterilizing the mixture by heat. The object is to bring about the destruction of the tubercle bacilli in the local nidus of infection by leading through that nidus a continuous stream of lymph rich in protective substances. It is probably in this way that the improvement is obtained in the case of tuberculosis of the peritonæum when the abdomen is opened and the stagnant lymph emptied out. If too large a dose of the vaccine is used the protective state of the blood is dangerously lowered—the so called "negative phase." This danger is exemplified in the fatal results which have occasionally followed the injection of Koch's old tuberculin. The writer thinks that Wright's method should be adopted only after the exercise of unusual precautions, and after the methodical examination of the patient's blood. The administration of tuberculin can never be a general method of treatment or one free from risk. What is wanted in the treatment of tuberculosis, whether the lesion be in joint, skin, or lung, is something which will enable the phagocytes, or other agents, to destroy the bacilli and enable sound fibrous tissue to replace the granulations. Probably there are other things than leucocytes which are concerned in the triumph of the tuberculous individual over the attack of the bacilli.

2. **Aphasia.**—Bramwell, in his third lecture on aphasia, discusses derangements of the auditory speech mechanism. The clinical characteristics of central (cortical or pictorial) auditory aphasia (word deafness), are as follows: 1. The patient is not deaf; he can hear ordinary sounds and interpret their meaning, the lower auditory centre and its connections being intact. 2. He is not necessarily "tone deaf." 3. He hears words as ordinary sounds without understanding their meaning; he is word deaf. 4. He is unable to repeat spoken language. 5. He cannot write to dictation. 6. Internal speech is more or less profoundly affected. 7. Objects presented to the sensorium through the other senses, such as the eye, do not raise up in the mind the auditory speech symbols which correspond to them. 8. There are also marked defects in spontaneous vocal (motor or emissive) speech, in reading, in reading aloud, and in spontaneous writing. Subcentral (subcortical or subpictorial) auditory aphasia or word deafness is a very rare form of word deafness. Its features are as follows: 1. Ordinary sounds can be heard and interpreted. 2. Tone deafness is usually though not necessarily present. 3. Words are heard as ordinary sounds, and are not understood. 4. Spoken language cannot be repeated. 5. The patient cannot write to dictation. 6. Internal speech is not interfered with; the patient can think in words; thought, intellect, and reasoning are not directly interfered with. 7. Objects presented to the other senses at once raise up in the mind the corresponding auditory speech symbols. 8. There are (provided the lesion is strictly limited to the auditory nerve apparatus below) no defects in spontaneous vocal (motor or emissive) speech, in understanding written speech, in reading aloud, nor in spontaneous writing.

10. **Examination of the Fæces.**—Baumstark states that it is impossible to form an opinion of the capabilities of the intestine by examination of the fæces with daily changing diet. A special diet must be adhered to which will (1) contain the necessary number of calories; (2) be digestible, taken readily, and agree well; (3) not show coarse macroscopic remnants in the fæces; (4) be easily obtained in any household. Schmidt's diet of milk or cacao, rusks, gruel, eggs, beef, and potatoes fulfils the conditions. In a few cases troubles may arise from diarrhœa or constipation. The systematic examination of the fresh fæces is: (1) Macroscopical; (2) microscopical; and (3) chemical. 1. The macroscopical examination establishes the con-

sistency, color, and smell. 2. The microscopical examination is chiefly useful to confirm the foregoing. 3. The chemical examination begins with a determination of the reaction; normally the fæces should be about neutral. The amount of fermentation is determined by incubation, and the presence of bile substances by the addition of concentrated aqueous sublimate solution which is turned red or green in the presence of bile. Slight variations in the amount of fat have no diagnostic meaning.

BERLINER KLINISCHE WOCHENSCHRIFT.

May 21, 1906.

1. Sterile Aseptic Catgut Ready for Use, By KAREWSKI.
2. Experiment in Balneotherapy, By F. HEINSHEIMER.
3. Answer to Dr. Bashford's Article. Some Remarks on the Methods of Experimental Investigation of Cancer, By P. EHRLICH and H. APOLANT.
4. The Influence of Domestication on the Origin of Diseases (*Concluded*), By D. v. HANSEMANN.
5. Antiamboceptoren (*Concluded*), By C. H. BROWNING and H. SACHS.
6. The Functional Treatment of Fractures, By C. DEUTSCHLÄNDER.
7. The Treatment of Ulcus Corneæ Serpens, By HELBRON.

1. Sterile Aseptic Catgut Ready for Use.—Karewski describes a method of sterilization of catgut in glass tubes at a temperature sufficiently high to kill any germs of anthrax or tetanus which might be present in the catgut, followed by lying in a solution of bichloride of mercury for twenty-four hours, then by washing with alcohol. The tubes containing the catgut are finally filled with absolute alcohol, sealed, and subjected to a temperature of 103° F. for an hour. The process resembles that employed by Van Horn and Sawtelle, of this city, but if the author obtained any of his ideas from such a source he has not mentioned it.

4. Influence of Domestication on the Origin of Diseases.—Von Hansemann considers that domestication exerts an influence which has changed the entire constitution of man, and similarly of animals, and has not only given birth to certain diseases, but has furnished the foundation of an entire series of sequelæ.

7. Treatment of Ulcus Corneæ Serpens.—Helbron urges the use of the pneumococcus serum not only in the treatment of serpiginous ulcers of the cornea, but as a means of prophylaxis when the cornea has been injured and there has been danger of a pneumococcus infection of the eye.

ZENTRALBLATT FUER CHIRURGIE.

June 9, 1906.

1. A New Method of Gastrostomy, By E. TAVEL.
2. The Technics of Intestinal Anastomosis, By WENDEL.

1. New Method of Gastrostomy.—Tavel says that the usual operations have the disadvantage of leaving the stomach in contact with the abdominal wall, which can but be injurious to the gastric function. The canal, too, is usually very narrow so that only soft articles of diet can pass through. After three successful experiments on dogs, he performed an operation in a case of œsophageal stricture as follows: A well vascularized intestinal loop with a long mesentery was chosen and a piece fifteen cm. in length near the jejunum was isolated. The distal end was separately marked by a forceps. The continuity of the resected gut was established by suture, and the isolated portion of gut was drawn through the opened mesocolon as in the operation of anterior retrocolic gastroenterostomy. The distal end of the isolated loop was then implanted in the anterior wall of the stomach, and the proximal end attached to the abdominal wall. The continuity of the new canal proved to be unimpaired. The operation has, according to the author, the sole disadvantage, that it lasts longer than the other methods .

ZENTRALBLATT FUER GYNAECOLOGIE.

June 9, 1906.

1. Lumbar Puncture in Eclampsia, By J. THIES.
2. Indications for the Induction of Abortion, By F. AHLFELD.
3. Vaginal Cæsarian Section in Incarcerated Retroflexion of the Uterus, By A. BENNECKE.
4. Helmital as a Prophylactic Against Postoperative Cystitis, By K. WITTHAUER.

1. Lumbar Puncture in Eclampsia.—Thies finds that the pressure in the spinal canal is always increased in cases of eclampsia, although in one case of epilepsy and eclampsia no such augmentation of pressure was noted. He resorted to lumbar puncture (Quincke) in fifteen cases of eclampsia, and saw a positive result only in a small number. The deep coma following a seizure is apparently shortened by the puncture, but the procedure has seemingly no definite influence upon the number of attacks.

2. Induction of Abortion.—Ahlfeld complains that a large number of patients are sent into the clinic for the induction of abortion by outside physicians who have made no effort to combat the condition for which they think abortion necessary. The indications usually are albuminuria, pyelitis, cardiac disease, frequent vomiting, etc. Very often these patients are enabled to go through to or near full term by rest in bed and suitable treatment.

3. Vaginal Cæsarean Section.—Bennecke adds another to Duehrssen's indications for the performance of this operation, in incarcerated retroflexion in the pregnant uterus. In the case in which he successfully performed it (at five months), the fœtus was apparently dead so that an abdominal Cæsarean section was not indicated. He chose the vaginal operation because he was not thus obliged to open the peritoneal cavity, because the wound was directly beneath and under the control of the eye, and because infection could be easily avoided. The operation was easy, of short duration, and entirely successful.

4. Helmital.—Witthauer has employed helmital in twenty-two cases, after various gynæcological operations including instances in which the bladder was freed from the uterus, anterior calporrhaphy, and vaginal fixation. Of these, three developed a light cystitis, and one a severe cystitis accompanying a postoperative cystitis. The results are fair, the author thinks, in helping to avoid the cystitis which so frequently follows repeated catheterization.

ROUSSKY VRATCH.

May 6, 1906.

1. Observations on the Effects of Scarlatinal Vaccine, By N. I. LANGOVOI.
2. The Symptoms of Thrombosis of the Mesenteric Artery, By TH. K. GEISSLER.
3. On Gastric Digestion in Diseases of the Biliary Tract (*Concluded*), By N. N. KIRIKOFF.
4. The Formation of Kreatinin by Bacteria (*To be continued*), By N. A. ANTONOVA.

1. Observations on Scarlatinal Vaccine.—Langovoi employed scarlatinal vaccine in one hundred and twenty children in the surgical division of a hospital in which these patients were under observation for several months. The purpose of the injections was to prevent the development of scarlet fever. Of the one hundred and twenty patients five had had the disease at an earlier age. Injections were not given to children under one year of age, nor to those having fever. Each patient received three injections, save in a few cases in which the vaccine was used but twice. Two varieties of vaccine were used. The first was prepared from a culture of the streptococcus on sugar broth, the second from a culture on plain broth. A week was allowed to elapse between each injection. The doses varied from 0.3 to 0.8 c.c. of the first variety and

from 0.5 to 2.0 c.c. of the second. In sixty-eight per cent. of the patients injected there was a reaction within from four to eight hours in the shape of a slight rise of temperature and a local tenderness and redness about the site of the injection. In sixteen per cent. no such reaction was obtained. The reaction was weaker or absent in those children who had had an attack of scarlatina previously. Finally, in about thirteen per cent. of the patients there was a scarlatina like eruption which at first was mistaken for scarlet fever proper. This eruption developed rapidly, spread all over the body, and was not accompanied by fever, malaise, or other symptoms of the disease. No desquamation was noted in any of these cases, nor did the neighboring children who had not shown this peculiar eruption catch it from those who did deveolp it. The author does not attempt to draw positive conclusions upon the evidence of his cases, but his belief is that the vaccine prevents the development of scarlet fever.

2. **Thrombosis of the Mesenteric Artery.**—Geissler made this diagnosis during life in a woman, aged sixty-eight, who had been suffering from attacks of cardiac asthma due to myocarditis and arteriosclerosis. A year before admission she had a transient hemiplegia. She contracted influenza, whereupon the heart action became very much disturbed, and there were signs of disturbed compensation, cyanosis, etc. These symptoms improved under appropriate treatment when suddenly the patient was seized with violent pains in the abdomen, nausea, vomiting, and frequent desire to defæcate. The temperature was slightly subnormal. The vomited matter was only stomach contents, but the fæces contained considerable amounts of blood. The pains and other symptoms improved under the use of hot applications, etc., but in the fifth day the patient suddenly felt a severe pain in one leg, which felt cooler than the opposite limb, and there was no pulse at the ankle. Five days later the same symptoms were noted in the other leg, followed by dry gangrene which could not be checked. Four days more found the patient with a right sided hemiplegia and aphasia, and in spite of stimulants and other appropriate treatment she died two days afterwards.

May 13, 1906.

1. Case of Multiple Calcified Nodules in the Subcutaneous Tissues and in the Skin, By S. M. Timascheff and Th. I. Romanoff.
2. Gastric Digestion in Diseases of the Biliary Tract (*Continued*), By N. N. Kirikoff.
3. Functional Lung Rest and the Coordination of Respiratory Movements in Pulmonary Tuberculosis (*To be continued*), By A. M. Rubell.

1. **Multiple Calcified Nodules in the Skin in a Child.**—Timascheff and Romanoff report the unusual case of a boy, aged eight years. At the age of three years small hard nodules were accidentally noted under the skin at the elbow joint. Previously the boy had been well, save that in his third year he had had a series of eruptions, maculoerythematous in character, general in distribution, occurring at intervals, and not accompanied by fever, but characterized by intense itching and profuse sweating. On one occasion the boy also suffered from pain in the elbows and knees, and had fever, chill, delirium. A month later he began to complain of stiffness in the joints. The number of subcutaneous nodules gradually increased. They appeared about the knees and at the anterior surfaces of the thighs and legs. They were painless, cartilaginous in consistence, and either imbedded in the skin or lay immediately beneath the skin, which was not altered. Some of the nodules gradually began to open, without any inflammatory reaction, the skin over them grew thin, and after a while a small aperture was noted through which flowed thick creamy drops of a scanty fluid. The lesion healed slowly with a scar, without any ulceration of the edges of skin. When the boy reached the age of seven some of the growths were of the size of a walnut, and were occasionally painful on pressure. At this time the child was treated for (hereditary) syphilis, although no syphilitic history was discoverable. He improved under this treatment. At the age of eight the nodules were numerous and widely scattered, especially grouped, however, in the neighborhood of the joints, where they often were adherent to the tendon sheaths. This consistence varied from doughy to bony. Bacteriological examination of several nodules proved negative, and animals injected with some of the semifluid contents remained well. Chemically the nodules proved made up almost exclusively of calcium phosphate, with traces of proteid matter. Histological examination of the growths showed that they consisted of a connective tissue stroma, a mass of calcareous deposits, and some granulation tissue. The authors were at a loss as to the true character of the nodules. In searching through literature, however, the two Russian observers found an almost identical case reported by Profichet. This author regarded his case as an example of a peculiar disease, and cited eight other cases from literature, which he classed in the same category. The present authors believe that the process begins in the subcutaneous tissue by a thickening of the arterial walls, followed by a degeneration, and a calcification of masses of fat globules and connective tissue which surround these particular arteries. Around the fat and connective tissue thus altered, which act as a foreign body, giant cells and granulation tissue form a network in which new vessels arise.

RIFORMA MEDICA.

June 2, 1906.

1. Contribution to the Surgery of the Gallbladder and the Cystic Duct. By Mario Segre.
2. Contribution to the Study of Staphylococcus Infection (*Continued*), By Umberto Baccarani.
3. Melanosarcoma of the Liver Following Melanosarcoma of the Chorioid. By Ferdinando Fazio.

1. **Occlusion of the Cystic Duct.**—Segre set himself the task of determining experimentally the manner in which occlusion of the cystic duct produces the various changes in the gallbladder which are seen at autopsy or upon the operating table. Ordinarily the blocking of this duct is the cause of a distended gallbladder with thinned out walls, containing a considerable amount of a serous fluid which is present there in virtue of the absorption of bile, etc., through the walls of the gallbladder. In a case of cancer of the pylorus in a man, aged twenty-seven, whose body came to the autopsy table at Modena, Segre found thickened and infiltrated walls and a small amount of whitish fluid in the gallbladder, although the cystic duct was occluded. Segre produced partial or complete occlusion of the cystic duct in rabbits, and observed the results. He found that there is a gradual transformation of the walls of the gallbladder into connective tissue, when the cystic duct is occluded completely, but that this proliferation of connective tissue does not take place when there is but partial occlusion of the duct. An important point made by the author is that in a simple stenosis, when the communication between the gallbladder and the intestine remains pervious, and when there is no current of bile down towards the intestine through the cystic duct, that there is much more likelihood of a biliary infection from the intestine, and we know what a prominent rôle this infection plays in the causation of cholecystitis. Incomplete occlusion of the cystic duct favors a biliary stasis which in turn favors the development of calculi. Cholecystectomy is the operation from which the most complete success can be expected in cases of obstructed cystic duct, and the more

conservative measures cannot be relied upon for a cure.

3. **Metastatic Melanosarcoma of the Liver.**—Fazio describes a case of melanosarcoma in a woman, aged twenty-nine years, who had undergone enucleation of an eyeball for a similar growth in the eye three years before. He comments upon the interval between the original lesion and the metastasis as rather prolonged. The case was noteworthy through the size of the growth, which filled almost the entire abdomen, thus rendering diagnosis as to the source of the growth difficult. The tumor weighed 9.4 kilogrammes when removed at autopsy.

THE DUBLIN JOURNAL OF MEDICAL SCIENCE.

May, 1906.

1. Bradycardia with Arrhythmia and Epileptiform Seizures, By J. M. FINNY.
2. A Case of Anæmia Splenica Infantum, By T. G. MOORHEAD.
3. Carcinoma Cutis, with Notes of Two Cases: (*a*) Cancer en Cuirasse; (*b*) Paget's Disease of the Nipple. By C. M. O'BRIEN.
4. Intubation of the Larynx in Cases of Diphtheritic Dyspnœa, By G. B. MCCAUL.
5. The Intramuscular Injection Treatment of Constitutional Syphilis, By H. R. R. FOWLER.

1. **Bradycardia.**—Finny propounds three questions concerning certain feeble distant sounds occurring, in his case, between strong ventricular systolic sounds, unaccompanied by pulsation over either ventricle, though a wavy pulsation might be seen above the fourth rib. These questions are of general importance in similar cases and are: 1. Are the sounds due to a hemisystole of the heart, the right ventricle contracting while the left does not? 2. Are the sounds produced by the rhythmic contraction of the auricles acting alone and unaccompanied by ventricular contractions? 3. Are they produced by feeble ventricular contractions which are not strong enough to empty the ventricular contents into the aorta in sufficient volume to cause the closure of the aortic valves, and so produce a diastolic second sound? In cases like the author's he believes it is the arrhythmia and not the bradycardia which causes convulsions. As to the cause of the bradycardia he does not know, but believes the subject demands investigation.

2. **Anæmia Splenica Infantum.**—Moorhead is of the opinion that this condition is not especially rare. It is characterized by great splenic hypertrophy, slight enlargement of the liver, decided anæmia, and marked leucocytosis. It may occur from the sixth to the thirtieth month of life. It is identical neither with the splenic anæmia of adults nor with any of the varieties of leucæmia. Some authors regard it as a clinical entity, while others consider it a secondary anæmia which may be produced by any cause of cachexia, such as rickets, congenital syphilis, or chronic gastrointestinal catarrh.

4. **Intubation of the Larynx.**—McCaul gives the following advantages of intubation: 1. Great diminution in the mortality compared with tracheotomy, especially during the first three years of life. After the sixth year tracheotomy is usually preferable. 2. The absence of a wound in the neck. 3. The rapidity with which it can be performed. 4. The slight danger of subsequent pneumonia. 5. The ease of performance compared with tracheotomy. 6. The small amount of subsequent care required. The disadvantages of this operation are: 1. Risk of dislodgement of the false membrane by the tube while being inserted with danger of suffocation before tracheotomy could be performed. 2. Danger that the tube may be coughed up and asphyxia result before it could be replaced. 3. Difficulty of removing the detached membrane through the tube. 4. If pneumonia develops it is impossible to keep the tube free from the viscid secretion which thus increases the dyspnœa.

5. **The Intramuscular Injection Treatment of Syphilis.**—Fowler gives the following advantages of this method: 1. Certainty of absorption. 2. Accuracy of dosage. 3. Rapidity of mercurial saturation. 4. Less time in hospital. 5. Diagnostic value, as in differentiation of a gumma from a malignant growth. 6. Absence of consequent gastrointestinal disorder. 7. Relief from the use of internal medicines. 8. Ability to keep patients under control and observation. The disadvantages of the method are: 1. Those which are common to all forms of mercurial administration, but to a lesser degree. 2. Pain, which varies with the susceptibility of the patient, the substance used and the manner of injection. 3. Danger of the occurrence of infiltrations, abscesses, fat embolism of the lungs. 4. Mercurial stasis in which the mercury ceases to be absorbed and eliminated, and may be a menace to the patient.

GLASGOW MEDICAL JOURNAL.

May, 1906.

1. Laparotomy in Tubercular Peritonitis, By D. MACARTNEY.
2. Several of the most Recent Cystoscopes, with Special Reference to the Inspection of the Ureteral Orifices, By J. H. NICOLL.
3. The Mechanism, Diagnosis, and Treatment of Persistent Occipitoposterior Presentations, By A. W. RUSSELL.
4. Three Cases of So Called Double Uterus, with a Table of One Hundred Collected Cases, By G. S. MACGREGOR.

1. **Laparotomy for Tubercular Peritonitis.**—Macartney advocates early operation for this condition, since metastasis is so common, and almost certain to occur if the primary focus is not removed. If there is only a reasonable likelihood that there is tubercle in the abdomen, he insists that an exploratory operation should be performed, diseased gland removed if possible, but if this is not possible the peritonæum should at all events be exposed to the air and sunlight. Tuberculosis localized in various parts of the body is surgically treated, it is doubly important to treat it in this manner when located in the peritoneal cavity because of the possible complications to which it will give rise.

2. **Recent Cystoscopes.**—Nicoll emphasizes the importance of cystoscopic examinations to supplement the clinical examination of the patient and his urine, the use of the sound and the x ray photograph. Cystoscopic investigation of hæmaturia and pyuria involves the examination of the bladder and the urine as it emerges from the ureters. To examine the bladder satisfactorily requires a good instrument, experience, and a reserve of patience in both examiner and examined. Examination of kidney and ureter is more difficult than that of the bladder. Many methods have been proposed, two are less objectionable than the others, catheterization of the ureters, and the use of segregators. The former is very difficult, especially in the male, and may result in great injury and no useful information. The latter is not a method which gives uniform success, though it occasionally leads to a correct diagnosis.

3. **Occipitoposterior Presentation.**—Russell advises as follows: 1. When the vertex is above the brim use postural treatment and endeavor to rotate by hand. This failing, either do podalic version, or bring the head into the cavity with forceps, aiding rotation, or the head may be rotated by bimanual manipulation. The forceps may be removed, and then reapplied if necessary. 2. If the head is fixed in the cavity, flexion of the same may be tried with the fingers, and the rectis used to bring down the occiput. Perforation and forceps delivery may now be necessary. In many

cases rotation can be accomplished with the forceps used as recommended by Brodhead. 3. If the head is on the pelvic floor the labor is not likely to be concluded naturally. In a multipara with relaxed outlet a forceps delivery may be accomplished in the occipito-posterior position, but better practice is to apply the forceps to the sides of the fœtal head and encourage gradual rotation, using traction intermittently.

4. **Double Uterus.**—Macgregor concludes from a study of one hundred cases that the chances of impregnation are not diminished by this anomaly except in cases in which the genital canal is entirely occluded. Delivery occurs without especial danger or difficulty unless the fœtus is held in the rudimentary horn of a markedly double uterus. Such a case might result in rupture of the uterine wall, or there might be no dilatation of the imperfect cervical canal, or there might be a powerless labor from lack of sufficient contractile force in the uterus itself. Surgical interference might be necessary in any of the conditions mentioned.

REVUE DE CHIRURGIE.

May, 1906.

1. Two Cases of Primary Angioma of the Striated Muscles, By P. Reclus and A. Magitot.
2. A Case of Calculus of the Submaxillary Gland, By G. Alexandre.
3. Hernia and the Accidents Which Attend Work, By P. Berger.
4. Intestinal Occlusion by Way of the Foramen of Winslow. Internal Hernia Across the Foramen of Winslow, By E. Jeanbrau and V. Riche.
5. Abscess of the Liver in the Colonies (French), By E. Loison.

1. **Primary Angioma of the Striated Muscles.**—Reclus and Magitot think that the origin of angiomata is not yet understood, notwithstanding the studies of Rindfleisch, Esmarch, and Rokitansky. Virchow, studying angioma of the skin, thought there was gradual cavernous ectasis of the preexisting vessels. In angioma of the liver, according to recent ideas, there is abnormal development of the hepatic cells and vessels, the hepatic tissue meanwhile undergoing gradual atrophy. Traumatism is also adduced as a cause of angioma. The muscular tissue in angiomata which affect those structures plays a passive rôle, the atrophy progressing as the angiothelial and connective tissue increase.

3. **Hernia and the Accidents Which Attend Work.**—Berger finds that the incapacity resulting from a hernia by virtue of an occupation which demands the exercise of much physical strength amounts to thirty to forty per cent. of his normal capacity. The consolidation of the wound depends upon three conditions which are not always simultaneous in occurrence: 1. The cessation of treatment. 2. The resumption of the customary task. 3. The determination as to the nature and importance of the incapacity for work. A hernia resulting from an exertion of strength may be irreducible or strangulated from the moment of its occurrence. The period of consolidation in such a case refers to the treatment necessitated by the complications. One who has sustained a hernia by means of an accident should at once be fitted with a truss, or subjected to an operation for radical cure as quickly as possible. With a suitable truss consolidation may be considered as acquired from the moment the truss proves effective, a period of perhaps eight days. If a radical operation is performed consolidation obtains from the time the patient can safely resume his occupation, which is usually about three months. If the cure is complete, after an operation for a recent hernia, no bandage nor apparatus of any sort ought to be worn after the operative wound has united. A delay of eight or ten months must be considered as necessary, in any case, before the final result of an operation can be safely affirmed.

4. **Intestinal Occlusion by Way of the Foramen of Winslow.**—Jeanbrau and Riche have made extensive bibliographic and cadaveric investigations upon this subject, and have suggested what seems to them the most rational treatment for this rare form of intestinal occlusion. They have given directions which they believe would enable a skillful surgeon to suspect the condition, and would impel him to immediate interference. By means of an enterotomy, as directed, he would be enabled to liberate the strangulated intestine. The authors have endeavored to show that the freeing of the foramen of Winslow from its obstruction is not an impossibility, though it has generally been pronounced impossible by surgical writers. The first step would consist in depressing the first portion of the duodenum. The freeing of the foramen is made possible by the existence between the vena cava and the duodenum of a fold of loose cellular tissue which, after tearing the peritonæum permits one to depress the lower border of the foramen, thus enlarging it materially.

5. **Abscess of the Liver.**—Loison states that the progress of this disease when it is of tropical origin is as variable as that of abscess in other organs and tissues. It may progress rapidly or slowly, it may be acute or chronic, extensive or of small extent, there may be one or several collections of pus. The nature of the infection and above all the general condition of the patient explain the diversity of these conditions. In almost all the cases operated upon by the author in which the disease had been contracted in Indo-China, Madagascar, or West Africa the course had been a very chronic one. This was either due to the fact that the patients already suffered with hepatic abscess when they arrived at France, from the tropics, the acute symptoms having already passed and having been unobserved; or to the fact that the abscess occurring in a cachectic individual was not accompanied with the customary elevation of temperature, developing insidiously, and perhaps in connection with other inflammatory affections. The first explanation seemed the more probable to the author.

REVUE DE MEDECINE

May, 1906.

1. The Legend of the Immunity of Syphilitic Arabs to General Paralysis, By A. Maire.
2. Concerning Perforation of the Interauricular Sæptum, By Bériel.
3. Note on Massive Epilepsy, By C. Féré.
4. Concerning the Mediterranean Fever in Tunis, in the French and Arab Races, By Cathoir.
5. Vertigo Associated with a Lesion of the Rhinopharynx, By Roque and Roget.
6. Osteomalacia and Exophthalmic Goitre, By G. Tolot and F. Sarvonat.

2. **Concerning Perforation of the Interauricular Sæptum.**—Bériel states that true perforations establish a direct and permanent communication between the two auricles. Such lesions are entirely distinct from the unclosed ductus Botalii. He divides them into three classes: 1. A sieve like condition of the sæptum. 2. Simple perforation or perforations which are few in number. 3. More or less complete absence of the sæptum. He concludes that there are: 1. Simple malformations of the sæptum, including simple want of closure of the ductus Botalii, or various forms of arrested development, including the sieve like condition of the wall, and multiple and associated malformations. 2. Mechanical changes such as may result from the potency of the ductus Botalii. 3. Inflammatory lesions which have continued beyond fœtal life and caused perforations with adhesions and the irregular development of the sæptum. Also those which occur in the child

and in the adult, causing large perforations with the formation of cicatricial tissue.

3. **Massive Epilepsy.**—Féré states that epileptics are frequently seized with a series of attacks either of vertigo, or of other morbid conditions. The attacks are usually separated by lucid intervals, but the intervals are sometimes occupied by a preparoxysmal stupor which is without interruption. This may amount to a state of disease in which there may be general convulsive attacks, or partial epileptic seizures. It occurs either in adolescents or adults. He considers this variety under the term massive epilepsy, and concludes that it may be dissociated, the dissociation accompanying phenomena of varying characters. This diversification may be an advantage, and may prevent a febrile condition which might prove fatal, from shock to the nervous system and dementia. The dissociation in question may precede a cure, but the variety and continuity of the manifestations may in themselves be alarming as well as most troublesome.

THE ARCHIVES OF PHYSIOLOGICAL THERAPY.

June, 1906.

1. The Nonoperative Treatment of Reducible Inguinal Hernia. By JAY W. SEAVER.
2. The Application of Galvanism to the Treatment of Fibroids, By F. H. MARTIN.
3. A Modification of Benoist's Tenetrameter, By G. E. PFAHLER.
4. Dry Hot Air in the Management of Some Common Pathological Conditions (*To be concluded*), By CLARENCE E. SKINNER.

1. **The Nonoperative Treatment of Reducible Inguinal Hernia.**—Seaver has made a large collection of statistical notes. He finds that three per cent. of the men in middle age are ruptured, thirty per cent. giving a history of no special discomfort resulting from the hernia. Among women, the author finds that heredity plays a larger part in the causation of the abnormality than it does among men. As most of the cases that have come under the author's treatment have been young persons, usually between eighteen and twenty years of age, he has found that a systematic training of the abdominal wall, so as to produce muscular firmness and strength, together with a supporting truss that would not prevent the drawing together of the walls of the rings, would produce a cure in a great majority of cases, and this method of treatment has been under trial long enough to enable him to bring forward the evidence of the permanence of the cures that have been reported before for short periods. Having returned the viscus to its proper place the doctor uses ordinary convex hand rubber pads of the truss to hold it in place. This is worn for about a week, or until the patient has become adjusted to the truss. The patient during this time must exercise the muscles of the abdominal wall by contracting either side, or by contracting the lower portion and making the contraction pass upward over the whole wall in a wave like manner. Massage will prove stimulating to sluggish peristalsis. The pad is then removed and replaced by a perfectly flat pad, which will in turn become unnecessary. Seventy-two patients were thus treated, fourteen (19.5 per cent.) continue to wear trusses when taking vigorous exercise, but not at other times, and five of them (6.9 per cent.) say that they are "just as badly off" as they ever were except that they learned to take care of themselves and wear the support all the time. All the others (73.6 per cent.) consider themselves sound, and most of them keep up some form of exercise as a "constitutional" or as a preventive of a return of the hernia.

2. **The Application of Galvanism to the Treatment of Fibroids.**—Martin thinks that in the following cases electricity is especially indicated in the treatment of fibroids: 1. In small bleeding fibroids in women approaching the menopause. 2. In inoperable cases. 3. In incipient, uncomplicated fibroids in women over forty years of age. 4. In small, uncomplicated fibroids of the smooth, interstitial variety which have no symptoms but hæmorrhage. 5. In patients (not accompanied by pelvic pus accumulation) who persistently refuse to have an operation. The treatment is as follows: After the antiseptic vaginal douche the patient is placed upon a table on her back, with her buttocks drawn well to the edge and feet supported by stirrups. The size, shape, and direction of the uterine canal are obtained by the use of large, flexible sounds. A large copper electrode of suitable diameter is then properly shaped and passed to the bottom of the uterine canal, and the vaginal portion insulated with the rubber muff. This electrode is then attached to the positive terminal of the battery. A clay electrode is next passed under the loose clothing and placed on the abdomen, and then attached to the negative pole of the battery. The current should not exceed in strength twenty-five milliampères for each square centimetre of active surface of the internal electrode. The time of each treatment should be five minutes for the maximum current employed (100 to 200 milliampères), and should be given as often as every second day. The patients begin to improve almost immediately. Where the uterus is large and the canal deep, it is necessary sometimes to attack the mucous membrane by piecemeal. But even if the patients are not entirely cured, their relief will be great.

ARCHIVES OF THE ROENTGEN RAY.

June, 1906.

1. Radiometric Methods, By Professor H. BORDIER.
2. Note on the Use of the Milliampèremeter in X Ray Measurement, By H. LEWIS JONES.
3. On the Quantimetric Method, By Professor R. KIENBOCK.
4. Some Suggestions for Perfecting a Method of X Ray Measurement, By JOHN HALL-EDWARDS.
5. Some Remarks on Röntgenometric Standards, By GUSTAV REUS.

1. **Radiometric Methods.**—Bordier describes the methods of accurately dosing the therapeutical energy of the x rays. Two distinct kinds of measurement are in use, qualitative and quantitative. The qualitative methods are needed to enable the practitioner to estimate the degree of penetration of the radiations into the tissues. The principal instruments used in qualitative measurements are the following: 1. The electroscope of Hurmuzesku. This instrument enables us to appreciate the output of a focus tube by measuring the distance at which the electroscope is discharged by the rays. The procedure is, however, better adapted for the laboratory than for clinical use. 2. The spintermeter of Béclère. This instrument measures the length of the spark gap which is equivalent to the interior resistance of the focus tube. This is a most useful and practical instrument. 3. Benoist's method. A silver disc 0.11 millimetre in thickness is used as the standard of comparison. The penetration of the rays is measured by the thickness of aluminum which gives the same intensity of shadow on the fluorescent screen. This also is a most useful and practical—indeed, an indispensable—instrument for radiology. 4. The milliampèremeter, when placed in circuit with the focus tube, gives a measure of the current passing through the tube, and thus indirectly of the resistance of the tube. The indications thus obtained are comparable with those of the spintermeter or the radiochromometer. 5. The radiometer of Courtade is also an instrument for qualitative measurement. In this method the degree of fluorescence of a screen of barium platinocyanide under the influence of the x rays is compared with that produced by a specimen of radium of known activity. 6. The method of Contremoulins is

based on the same principle as the radiometer of Courtade. Of the quantitative methods the author describes the following seven: 1. Holzknecht's chromoradiometer. 2. Freund's method. 3. Sabouraud and Noiré's radiometer. 4. Kohler's method. 5. Kienbock's quantimeter. 6. The Guilleminot-Courtade method. 7. Contremoulins's radiophotometer. Of all of these the author says that there has been as yet devised no method that enables us to effect the dosage in a precise and practical manner. He then describes his method which, he states, is a method of applying definite doses of x rays corresponding to previously determined physiological and therapeutical effects. He illustrates his method by the history of seven cases.

2. **Note on the Use of the Milliamperemeter in X Ray Measurement.**—Jones thinks that there are four questions to be settled before the milliampèremeter can be accepted as reliable for x ray measurements: 1. Does x ray production bear a direct relationship to the magnitude of the current through the tube? This question is of prime importance, and has not yet been fully answered. 2. What difference may be expected to exist between the amount of x ray production within the tube and the amount actually emitted and available for use outside? This difference is one which the milliampèremeter cannot possibly indicate. 3. Can the milliampèremeter be trusted to give a measure of that part of the current through the tube which is concerned in the production of the x rays, and of that part only? This can be answered in the affirmative. 4. How may the readings be interpreted to suit different distances of the radiant point from the surface irradiated? This question is one for which an answer can readily be found, for it only involves a measurement of the distance from anticathode to skin surface. Certainly the Holzknecht pastille was convenient, because it was placed upon the surface of the patient, and therefore obviated the need for any measurement of the distance between the radiant point and the surface exposed to the rays.

3. **On the Quantimetric Method.**—Kienbock says that it is of the highest importance, both from the practical and the scientific standpoint, to be able to measure accurately the exact dosage of the Röntgen rays: First, the dose of the radiation absorbed by the superficial layers, and, secondly, the more penetrating dose—that is, the quantity of Röntgen light absorbed by the deeper layers. The so called indirect methods only give a rough estimate of the dose, because so many of the more important factors, such as the intensity of the irradiation, are not measurable by this means. A true measurement can only be obtained by one or other of the so called direct methods, by means of which the amount of Röntgen light absorbed by the tissues is estimated by means of a reagent placed on the tissues, and irradiated to the same degree. The author gives a review of the methods employed by Holzknecht, Freund, Horn, and Stern. He adds a description of his own quantimeter, and concludes by saying that hitherto the majority of radiologists have been accustomed to work without any measurement of the Röntgen light. This is very unsatisfactory, both from a practical and from a scientific point of view. It is to be hoped that in radiotherapeutical practice the use of the dosimeter may become universal, and that we may see no more of the empirical methods of working in the dark without any sufficient method of controlling the dose.

4. **Some Suggestions for Perfecting a Method of X Ray Measurement.**—Hall-Edwards states that at the present time radiotherapeutists are divided into two schools—those who believe in the large (so called) measured dose, and those who administer small unmeasured doses at intervals suggested by observation and experience. After ten years' experience in the application of the x rays for diagnosis and therapeutic purposes, he has arrived at the conclusion that idiosyncrasy plays a more important part than he should a few years ago have admitted. It is difficult to conceive a method in which the personal equation shall be entirely eliminated, but the possibility of the discovery of such a method still exists. The two methods which have so far proved successful are the measurement of the amount of current taken by the tube by the use of a valve and milliampèremeter, and the counting of the number of breaks made in the primary current when using an efficient mercury dip break. But up to the present the proposed methods of measurements by means of making photographic records have proved a failure. The question of measuring the hardness of the x rays has been overcome by the introduction of the radiochromometer of Benoist, one of the most useful instruments as yet devised for helping the x ray worker to estimate the hardness of the rays employed. Whilst the radiochromometer is well nigh a perfect instrument for measuring the hardness of the rays, it is of little use in making comparative exposures unless these be short and be made with a very soft tube.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES

June, 1906.

1. Self Restraint in the Practice of Surgery, By L. A. Stimson.
2. Technique of the Newer Operations for Shortening the Round Ligaments and the Uterosacral Ligaments for the Correction of Backward Displacement of the Uterus, By E. C. Dudley.
3. Primary Malignant Disease of the Vermiform Appendix, By H. D. Rolleston and L. Jones.
4. Report of a Case of Primary Carcinoma of the Vermiform Appendix, By W. M. Ecles.
5. A Case of Volvulus of the Stomach, By G. Streit.
6. Dissecting Aneurysm, By A. S. Hamilton.
7. Some Notes on Arteriosclerosis of the Aorta, By W. Ophuls.
8. Some Hitherto Undescribed Structures Found in the Large Lymphocytes of a Case of Acute Leucæmia, By J. Auer.
9. Teratoma of the Thyreoid Gland. By Isabella C. Herb.
10. Chronic Progressive Softening of the Brain. By J. R. Hunt.
11. Present Status of Gastric Surgery, with Especial Reference to the Treatment of Chronic Ulcer, By L. Frank.
12. The Leucocytes in Gonorrhœa. By I. S. Wile.
13. The Urine in Normal Pregnancy, By F. S. Mathews.
14. The Bacteriology of Conjunctivitis. By S. H. McKee.

2. **Shortening the Round and Uterosacral Ligaments.**—Dudley speaks of recent methods of operating for the cure of backward displacements of the uterus which are substitutes for the Alexander operation. He advocates the combined method of shortening the round and the uterosacral ligaments. The round ligaments are shortened through a median abdominal incision being drawn through artificial canals under the peritonæum and secured in the abdominal wound, after the Gilliam-Barrett method. The uterosacral are also shortened through the abdominal incision by means of purse string sutures, and the operation is completed by suitable procedures on the vagina and perinæum should such be deemed essential.

3. **Primary Malignant Disease of the Vermiform Appendix.**—Rolleston and Jones draw the following conclusions: 1. Accurate diagnosis in this disease is impossible. All the reported cases imitated appendicitis. 2. The disease is not very rare, since 80.9 per cent. of the forty-two reported cases occurred subsequent to 1900. The microscopic size of the growth in some cases makes it probable that many cases may have been overlooked. 3. Several varieties of carcinoma have been reported, also sarcoma and endothe-

lioma. The usual form is a spheroidal cell carcinoma, is peculiar to early life, is slightly malignant, and resembles endothelioma. Colloid changes are not as frequent as has been supposed. 4. Concretions were found in only three cases. 5. The disease does not attack one sex more than the other. 6. Acute or chronic inflammatory changes frequently accompany the growth. 7. The immediate prognosis and the prospect of freedom from recurrence after operation are good, especially with spheroidal carcinoma.

7. **Arteriosclerosis of the Aorta.**—Ophuls quotes Thoma as believing that this common disease is the result of mechanical causes. His own experiments did not confirm Thoma's conclusions, but he thinks that it may be due to the fact that Thoma investigated the disease when the muscle was actually though secondarily weakened. Backhaus believes the disease is a new form of syphilitic development. Chiari distinguishes (1) endarteritis or atheroma, in which the disease is primarily in the intima, (2) mesarteritis, which is of syphilitic nature. Benda believes in its syphilitic origin. Marchand holds to the view that the majority of aortic aneurysms are caused by the ordinary form of arteriosclerosis. Anatomically the disease in question is a chronic inflammatory process of the vessel wall, which attacks all the coats simultaneously, but usually produces more noteworthy changes in the intima and adventitia. Clinical evidence that the important factors are old age, mechanical and chemical irritation, and syphilis.

11. **Present Status of Gastric Surgery.**—Frank thinks there is no operation in surgery which gives more satisfaction to patient and surgeon than gastroenterostomy for chronic ulcer of the stomach. Dyspeptics should be considered as sufferers from chronic ulcer. All protracted gastric or intestinal disturbances are due to organic causes, and are never functional. As to the gastric analyst, while the author believes firmly in chemistry and microscopy, he also believes in the futility of test breakfasts and stomach washing in many of the cases. Too much reliance should not be placed on such measures in excluding or diagnosticating ulcer. More attention should be paid to clinical diagnosis, and if sufficient medical treatment fails to effect complete relief the case should be considered from the surgical aspect. If there is any question as to diagnosis the exploratory incision should be resorted to as a legitimate and accredited procedure. The author thinks with Maylard that the day is not far distant when the stomach will be opened, explored, and resutured for purely diagnostic purposes with as much freedom and security as is now done in the case of the brain.

12. **Leucocytes in Gonorrhœa.**—Wile concludes that the polynuclear neutrophiles are highest in acute anterior urethritis, and decrease with involvement of the posterior urethra, being lowest in chronic gonorrhœa in male and female. The mononuclear leucocytes are increased in the chronic processes, and vary inversely with the polynuclear neutrophiles. The eosinophiles are slightly higher in acute anteroposterior urethritis than in acute anteriorurethritis. This may not be due to involvement of the glands, epididymis, prostate, or posterior urethra, as the eosinophiles are comparatively lessened in chronic cases. The basophiles are little affected by the disease. There is no relation between the appearance of any type of leucocyte in the blood and in the discharged pus. The eosinophiles are of no diagnostic value in gonorrhœa.

13. **The Urine in Normal Pregnancy.**—Mathews affirms that in the fourth to the eighth month of pregnancy the specific gravity of the urine is considerably diminished. This depends upon two conditions: 1. The pregnant woman during these months passes more urine than the nonpregnant. 2. The nitrogen elimination is diminished. Three hundred grains of urea, determined by the hypobromite method, are more than the average toward the end of pregnancy. This is in part explained by the body's retention of nitrogen and partly by variations in the diet of the pregnant woman.

AMERICAN JOURNAL OF SURGERY.

June, 1906.

1. Dilatation of the Nongravid and of the Gravid Uterus, By A. DÜHRSSEN.
2. Excision of the Transverse Colon, Sigmoid, and Rectum for Multiple Stricture and Ulcerative Coloproctitis, By S. G. GANT.
3. Remarks on Atrophy of the Testicle; with a Report of an Interesting Case, By L. B. BANGS.
4. A Simple and Practical Method of Performing Anastomosis by Means of Two Knitting Needles, By V. PLETH.
5. Office Treatment of Rectal Diseases, By W. BEACH.
6. Plaster of Paris and How to Use It, By M. W. WARE.
7. Paranephritic Sclerosis. Its Ætiology, Symptoms, and Treatment, By A. A. BERG.
8. The Value of the Röntgen Rays in Surgical Diagnosis, By C. BECK.

1. **Dilatation of the Gravid and the Nongravid Uterus.**—Dührssen approves of dilatation of the unimpregnated uterus for pain and hæmorrhage, using a tampon of iodine cotton or gauze. After the dilatation he applies cauterizing substances upon a cotton wrapped applicator, preferring a twenty-five per cent. phenol alcohol solution. He does not object to curettage for such cases. If curettage has failed to check the hæmorrhage he advises dilatation, palpation with the finger, and such subsequent operation as may be indicated. If pregnancy has existed and there is a history of abortion and subsequent curettage, if also there is still hæmorrhage, the author advises dilatation with laminaria tents and exploration with the finger. If the cervix is too rigid for dilatation he advises anterior and posterior section of the cervix, emptying the uterus, if any of the products of conception remain, and immediate closure of the cervical wounds.

5. **Office Treatment of Rectal Diseases.**—Beach thinks the secret of office treatment of almost all anal and rectal diseases consists in the proper application of local anæsthetics, and he considers (1) the agent producing local anæsthesia, (2) the method of using the agent, (3) the technics of the treatment, (4) postoperative treatment. His conclusions are: 1. The study of technics in proctology is important. 2. Most of the ordinary rectal diseases can be successfully met by office treatment. 3. Less pain results from operations under local than from those under general anæsthesia. 4. Under local anæsthesia the scope of office practice is increasing. 5. Patients will more readily submit to radical treatment under local than under general anæsthesia.

7. **Paranephritic Sclerosis.**—Berg states that the diagnosis of this condition is possible only in cases in which there is a dull dragging pain in the loin, or when there is fixation of the kidney, and absence of renal ballottement. It should be suspected in all forms of bacterial or toxic nephritis, in uric acid disease of the kidney, in echinococcus cysts, and in malignant tumor of the kidney. The pain provoked by paranephritic adhesions does not resemble that of renal colic. The latter is sharp and cutting, and radiates to the groin, testicle, and thigh. The former is a dull ache, localized in the loin, radiating if at all to the hypochondriac region and shoulder. The treatment of paranephritic sclerosis is operative, and consists in blunt or sharp division of the adhesions, whenever they are present. In chronic nephritis accompanied by paranephritis division of the adhesions alone will sometimes suffice to relieve or cure the disease.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

Section in Orthopædic Surgery.

Meeting of February 16, 1906.

Dr. Reginald H. Sayre in the Chair.

Injury of the Semilunar Cartilage.—Dr. Henry Ling Taylor related the case of a man, forty-one years old, a carpenter, who two years ago fell fifteen feet, striking on a cement floor. The accident was followed by pain and swelling over the right internal semilunar cartilage, with extreme disability, so that for two months he was confined to bed. He had been unable to work since the accident, and treatment with bandages, splints, etc., had been without effect. He was admitted into the Post-Graduate Hospital on October 5, 1905, where a V shaped piece of the cartilage was excised. It had a bruised and boggy appearance. The operation at once relieved the pain and tenderness, and the patient left the hospital on October 21st, on crutches. The leg was weak and atrophied, and on November 22nd the knee could not be actively extended beyond an angle of 90°. It was easily straightened, however, and under rubbing and exercises steady improvement in power had taken place. On December 8th the patient was able to walk without a cane or other support. On January 31, 1906, the knee could be actively extended to 175° and flexed to 60°, and the patient could walk perfectly without any support.

Dr. Taylor said that in another similar case, in which he had removed the entire cartilage, the surgical result apparently had been equally good, but on account of the atrophy of the quadriceps muscle the patient thought that his leg was weak and that he had not been benefited by the operation.

Dr. T. Halsted Myers mentioned a somewhat similar case that had recently come under his observation. The patient was a man who had received a blow on the knee. After several weeks of disability the joint was opened, and a small piece of the semilunar cartilage that was found detached was removed. For a few months after the operation the patient was quite comfortable; then the disability recurred, with decided localized swelling. This continued to increase, and after about three months the joint was reopened. The incision revealed a cystic tumor attached to the cartilage, filled with a glutinous material. The growth, together with its contents, was removed, and the patient made a rapid and complete recovery, and since the operation had been perfectly comfortable. Microscopical examination of the tumor negatived the diagnosis of sarcoma, made at the operation.

Chondroosteomata of the Ankle.—Dr. Henry Ling Taylor presented a man, twenty-eight years old, who was admitted into the Post Graduate Hospital on October 31, 1905. There was no history of rheumatism or other previous illness, except gonorrhœa ten years before. He first noticed a small swelling in the region of the outer ankle bone one year previous. This slowly increased in size, and a few months later began to be painful on standing or walking. For four or five months it had thrown the feet inward and had made walking somewhat difficult.

At the time of his admission the swelling had attained the size of half an egg. It was situated in front of, below, and on the outer side of the external malleolus, and limited eversion of the foot. About six months prior to his admission a similar swelling appeared about the left malleolus; this was smaller than the other, and almost painless. There was no tenderness on the left side, but there was moderate tenderness on the right side. The radiographs showed several detached or partially detached bony nodules near the end of the fibula on the right side, with similar, but smaller and less distinct growths on the left side. Those on the right foot were removed by operation early in November, 1905, but there was still considerable enlargement about the outer ankle bone. The growths seemed to be small bony nodules covered with cartilage, not attached to bone, and articulating by synovial joints with each other and with the fibula and front of the tibia. Considerable disability persisted up to the present time. The specimens and x ray pictures were shown.

Dr. P. William Nathan, who had made a pathological examination of some of the growths in the case of chondroosteomata presented by Dr. Taylor, said they were examples of the congenital condition known as multiple enchondromata, microscopically having all the features of normal spongy bone tissue. They were derived from displaced pieces of the epiphyseal cartilage, from which they sometimes became entirely detached and ossified. As long as there was displaced cartilage they were apt to recur.

So Called Arthritis Deformans in a Child.—Dr. P. William Nathan related the case of a girl, six years old, who had been brought to the Hospital for the Ruptured and Crippled on account of a swelling of the joints which, beginning in the periphery, gradually involved all the joints in the body. The involvement of the joints was gradual, and there was no temperature elevation.

She was admitted into the Polyclinic Hospital, where she remained for eight months. She became decidedly cachectic, but had only a slight rise of temperature once, and this could be attributed to incidental causes. Practically all the joints in the body were involved in the swelling, which was bony in character and typical of the condition originally described by Adams under the name of rheumatic gout and by others as arthritis deformans.

This condition, Dr. Nathan said, was rarely met with in children, and in them was quite malignant, death usually occurring within five years. It differed decidedly from other joint affections which had been classed under the name of rheumatoid arthritis. In the case shown, the swelling was due entirely to bony thickening, without any synovial involvement. The condition grew progressively worse, and after death the ends of the bones were found to be enlarged and very much softened. There was marked coxa vara, and sometimes there was complete disappearance of the ends of the bones from absorption. The passive mobility of the joints usually remained unimpaired, which feature was not observed in the various forms of synovial joint disease.

The Chairman inquired of Dr. Nathan whether the possibility of syphilis had been considered in connection with the case he had related, and whether antisyphilitic treatment had been tried. The clinical picture was very similar to what he had seen in several cases in which recovery had followed prolonged antisyphilitic treatment, the swelling of the bones subsiding, and the function of the joints becoming normal. He recalled one case in which the joints of both the upper and lower extremities were involved.

Dr. Nathan said the child had been under observation for eighteen months, and had shown no symptoms of syphilis, and there was no history of that disease. The lesions presented were entirely distinct from those of specific infection; there was a uniform involvement of the periphery of the joints, which he had never seen in syphilitic osteoarthritis. The cachexia was also characteristic, and the usual syphilitic manifestations were entirely wanting.

The Chairman said that at the last meeting of the section several papers had been presented on the subject of syphilitic arthritis, and in the discussion that followed the fact had been emphasized that there were

many cases of syphilitic bone and joint diseases in which the usual stigmata of congenital syphilis were absent.

Dr. Nathan, in reply to a question, said the fundus of the eye had not been examined. He felt absolutely certain in regard to the diagnosis, as all the classical symptoms were present. The disease had been variously described as arthritis deformans and arthritis nodosa, and no one had ever suspected that syphilis had anything to do with it. In specific bone disease there was usually a gummatous formation, either in the bone or in the synovial membrane, with characteristic symptoms. The joint symptoms are entirely different from those present in the case under discussion.

Multiple Chondromata.—Dr. Nathan presented the case of a boy, eleven years old, with multiple enchondromata involving various joints of the body. The tumors were situated near the epiphyseal line, the condition being particularly distinct in the hands. As the bone grew, the tumors gradually became displaced from the epiphyseal line, and were finally found in the shaft. The growths were analogous to those sometimes found in the cartilage of the ear, which in those cases were derived from the auricle.

Dr. T. Halsted Myers said he had recently seen a case of multiple enchondromata in a child, ten years old, which involved the proximal phalanges of nearly all the fingers of one hand and two of the other, as well as one rib. The growths began to be noticed six years ago. In regard to treatment, the usual advice was to excise them completely when very small, or to leave them alone until they interfered with function, and then to remove them thoroughly. In the case he had in mind, the growths had been treated for a time with the x rays, and the patient thought that they diminished in size somewhat as a result. Dr. Myers said that nothing definite was known regarding the ætiology of these tumors. He suggested that perhaps the radium treatment might be effective. The irregularity in the cartilage growth was further shown by a general shortening of the bones of the right upper extremity, amounting to 2¾ inches, and of the right lower extremity, which was 2½ inches shorter than the left.

Dr. Nathan, in reply to a question, said there was no history of heredity in this case, although as a rule the condition seemed to run in families and was apparently the result of an abnormal developmental condition. Epiphyseal cartilage from any joint in the body might become abnormally placed.

Spondylitis, with Obscure Nervous Symptoms.—The Chairman presented the case of a boy, five years old, who had been shown by Dr. Wisner R. Townsend at the previous meeting. The history was that about a year ago he had been struck in the back by a bicycle, which knocked him over, and a month later had fallen down stairs, striking on his back. Following these accidents, he had complained of pain for some time, although neither of them was apparently very serious. He was treated by a physician in Newburgh, who detected a manifest deviation of the spine and applied a plaster of Paris jacket, which was worn for four months. An interesting feature of the case was the peculiar attitude assumed by the boy upon standing or walking, when he bent far forward, with one hand supporting the hip, as though in pain. In addition to this, there were at times various movements of the head, rhythmical in character. The boy fretted and cried constantly, and there had seemed to be a progressive loss of power in the lower extremities. A neurologist to whom the boy was referred had made the diagnosis of catatonia, which was one of the preliminary stages of dementia præcox.

The Chairman said he had examined the boy a number of times, and had formed the opinion that there seemed to be some disturbance of the central nervous system dating from early childhood, and upon this a spondylitis had apparently been ingrafted. There was fairly well marked evidence of incipient spinal inflammation, which was masked to some extent by the nervous symptoms. The disability in the lower extremities was possibly due to spinal pressure. There was a slight elevation of temperature at times.

Three weeks ago he had applied a plaster of Paris jacket and jury mast, which had apparently relieved the boy's symptoms to some extent. He did not cry and moan constantly, as before, although he still had very little use of the lower extremities. There was apparently no mental impairment.

Anterior Poliomyelitis.—Dr. Edward D. Fisher related the case of a girl, sixteen years old, who had an attack of paralysis two years and a half ago, involving the left arm and the right leg. When he first saw the patient, three months after her attack, she was unable to raise her arm, and the electrical reactions were the usual ones of degeneration. There was absolutely no response to the faradic current in the left arm. Since that time she had been treated faithfully and continuously with massage, with electricity, and mechanically, and the treatment, so far as the arm was concerned, had been very encouraging, as the muscles had filled out and she had regained considerable power in the limb. The leg, however, had not done so well, as there was still no response to the faradic current, and the reaction of degeneration was present.

The Chairman, who had assisted in the treatment, said that, in spite of the fact that the reaction of degeneration was present in both the arm and the leg, there had been a return of function in the former. This was contrary to the usually accepted dictum that in cases where the reaction of degeneration was present no improvement could be expected, and it should lead one to be very guarded in giving a prognosis in these cases.

Clicking Joints.—Dr. Sidney A. Twinch presented a boy, eighteen years old, who in the course of athletic work, had done a good deal of high jumping. Two years ago he first noticed an aching in his right hip, and a year ago last July, while walking on a beach, he heard a slight clicking sound in that joint. Subsequently the left hip became similarly affected, as well as the back of the neck and the right shoulder. These clicking sounds had persisted up to the present time, to the great annoyance of the patient. There was also more or less aching in the affected joints.

The Chairman said he had seen several cases very similar to the one shown by Dr. Twinch, and he recalled one in particular where marked improvement followed the insertion of the point of the Paquelin cautery deep down over the trochanter of the affected hip. In all these cases there was probably some enlargement of the bursa over the great trochanter, and the sound was caused by the glutæus maximus sliding up and down over it.

Mechanical Therapy in the Treatment of Infantile Paralysis was the title of a paper presented by Dr. C. H. Jaeger.

The Operative Treatment of Infantile Paralysis, with Special Reference to Neuroplasty.—Dr. R. Tunstall Taylor, of Baltimore, read a paper on this subject (see *New York Medical Journal*, 1906, ii, p. 9).

Dr. Alfred S. Taylor said that in the suturing of nerves, while theoretical considerations might lead one to prefer the end to end method, he personally preferred that of lateral implantation. With this method, the question always arose as to whether one could get a sufficient degree of power in the already paralyzed field. In his own series of eight cases of faciohypoglossal anastomosis, five had shown improvement, and in one, done twenty-five months ago, there had been a complete return of power in the affected muscles,

although there was still present slight atrophy in the side of the tongue, but without interference with phonation or deglutition. In that instance the improvement followed a very unsatisfactory lateral implantation. Two sutures were inserted, and after one of these had pulled out it was found impossible to insert another. In the three others of the series too short a time had elapsed for results to occur. In dealing with the disability resulting from poliomyelitis, Dr. Taylor said his experience with neuroplasty was limited to five cases, two of the upper and three of the lower extremity, and they had convinced him that the return of power in these cases was very slow. In two of his cases the entire limb was somewhat atrophied and less powerful than its fellow, and the result of attaching a completely paralyzed nerve to one partially paralyzed was necessarily uncertain. Improvement had been reported in three cases.

Dr. Robert H. M. Dawbarn said that personally he had had no experience with tendon transplantation work in the upper extremity. In the lower extremity, his work had been limited to five cases of paralysis of the peroneal group of muscles or of the anterior tibials in poliomyelitis. In his three most recent cases, one of which had been referred to him by Dr. R. W. Kimball, of Norwich, Conn., and the two others by Dr. A. L. Goldwater, of New York, and Dr. Guy Godfrey, of the army, the results had been excellent. In two cases there was complete inability to walk to any extent without agony, the condition being one of extreme equinovarus, and the patients walking on the dorsum of the foot. The operative procedure in these cases was as follows: Before completely dividing the tendo Achillis to overcome the equinotalipes, a piece of the tendon of about the size of a lead pencil was dissected off from its insertion into the calcaneum, and up to the muscular portion of the gastroculmius and solæus. Then this long strip of tendon was carried underneath the skin until it was in front of the inner malleolus. It was then passed through slits in the tibialis anticus and the extensor proprius hallucis, and finally through the innermost one of the common extensor tendons of the toes. In each instance it was fastened with chromic gut. So far in this description the muscles supplied by the posterior tibial nerve had been used to help out the paralyzed anterior tibial group. Next, on the outer side of the foot the peroneus brevis was detached from its insertion, and its tendon brought forward under the skin in front of the external malleolus and inserted in a similar manner into the outermost three extensor tendons of the toes. Thus this musculocutaneous muscle helped out the paralyzed group. In this case, as well as in two similar ones, the result was excellent, the patient being able to lift his toes instead of stubbing along.

In discussing nerve suturing, Dr. Dawbarn referred to one type which, so far as he knew, had been originally mentioned in his Gross Prize Essay, in which he had reported several cases of complete extirpation of the tongue with the exception of the posterior inch or inch and a half, which was left attached to the hyoid bone. Upon this remnant depended largely the patient's chance for life, because, unless it could control the epiglottis in the act of swallowing, he was in imminent danger of death from *Schluckpneumonie* from swallowing "the wrong way" the septic fluids within the mouth. In order to avert the occurrence of that complication, Dr. Dawbarn said he saved a long piece of the twelfth nerve (purely motor) and planted it into a cut in the intrinsic muscle constituting the stump of the tongue, in the expectation of hastening thereby the renewed control of the epiglottis by the patient in protecting the entrance to the larynx. In those cases in which he had practised this method there certainly had seemed to be a more rapid recovery or control than he had observed before.

Dr. Dawbarn was satisfied that some of the poor results of nerve suture that had been reported from time to time were traceable to the fact that the ends of the nerves had been dragged together by sutures, thereby violating a cardinal principle of good plastic surgery. In surgery, as in matrimony, unwilling union was apt to be followed by divorce. In demonstrating "wet stretching" of the sciatic nerve to students upon the cadaver, he had regularly asked the strongest member of the class to exert traction on it, and thus far he had never found any one who was able to break it. Even very small nerves would stand more tension without rupture than one would *a priori* believe possible, and could thus be so lengthened by stretching that ends would easily lie in apposition, which otherwise could not have been kept together.

Dr. Dawbarn said that Dr. Taylor, in his paper, had several times alluded to his use of silk sutures. The employment of silk, or of any nonabsorbable material, the speaker said, had now been almost wholly discarded by surgeons. He believed that, with the exception of suturing of the intestines, where linen, cotton, or silk was well tolerated, no member of the New York Surgical Society now buried these materials.

Dr. Edward D. Fisher said the operative treatment of infantile paralysis had been very clearly presented by Dr. Taylor, and would doubtless be more widely carried out as it became better understood. In regard to the degeneration of nerves, the speaker thought that many of them did not degenerate to their extreme end; they probably had their own method of restoration or nutrition, and were not entirely dependent on the cell. The examination of the degenerated nerves at the time of operation would be interesting from a pathological standpoint, and also of the supposed healthy nerves, as some changes might be noted in them and thus account for the difference in the rapidity of recovery in various cases. Poliomyelitis might involve all the nerves of an extremity, although not equally.

As regarded the time when operations of this character should be undertaken, Dr. Fisher thought that the limit set by Dr. Taylor was very conservative, and it was wise that it should be so. It was a matter of record that even after the faradic response had been absent and the reaction of degeneration had been present for a year, there might be a recovery of power in the paralyzed muscles; such cases, however, were rare. While he had not followed these cases so fully as the orthopædic surgeons had, his own experience would lead him to believe that where the faradic response failed absolutely after six months, and reaction degeneration remained, the ultimate outcome was not hopeful.

The fact mentioned by Dr. Alfred S. Taylor, that his results with neuroplasty in disability resulting from poliomyelitis had not been so rapid or encouraging as in cases from other causes, might very probably be explained on the ground that in many of those cases the disease of the nerves was very extensive, at times involving the muscles of both the flexor and extensor groups.

Dr. Herman C. Frauenthal said that in some cases of nerve separation, whether by injury or by scar tissue, where both the galvanic and faradic currents failed to elicit a reaction, a response might be obtained with bipolar electrodes from a high frequency, high tension current interrupted by a spark gap.

Dr. Dawbarn said that about ten years ago Dr. Jacobi had told him that he had never seen a case of complete recovery from anterior poliomyelitis after a reasonable period had elapsed.

Dr. Wisner R. Townsend said his observation coincided with Dr. Jacobi's.

Dr. FISHER was also inclined to agree to the statement. After the cell was destroyed, the muscle must ultimately degenerate. If there was no faradic response after six months, he was inclined to give the prognosis that the disability would be permanent.

Dr. HENRY LING TAYLOR said that as the result of his experience he could state positively that in cases of anterior poliomyelitis in which the muscles remained paralyzed after a year there was never a perfect recovery.

Dr. NATHAN could corroborate the statement that muscles paralyzed for a year or more never recovered entirely.

Book Notices.

Nursing: Its Principles and Practice for Hospital and Private Use. By ISABEL HAMPTON ROBB, Graduate of the New York Training School for Nurses attached to Bellevue Hospital; late Superintendent of Nurses and Principal of the Training School for Nurses, Johns Hopkins Hospital, Baltimore, etc. Third Edition; Revised and Enlarged, Illustrated. Cleveland: E. C. Koeckert, 1906. Pp. 565.

The author has taken advantage of the appearance of this new edition of her excellent book to rearrange the subject matter and to lay out a course for three years' training. The work maintains its high standard and is one of the best textbooks on the subject.

Uric Acid. The Chemistry, Physiology, and Pathology of Uric acid and the Physiologically Important Purin Bodies, with a discussion of the Metabolism in Gout. By FRANCIS H. MCCRUDDEN. Boston: The Fort Hill Press Pages. Pp. xi-318.

The vogue of the theory of the influence of uric acid in the ætiology of rheumatic and other diseases suggested to the author the advisability of making a careful study of the metabolism of uric acid and of collecting the data in one place. While it is conceded that at the present moment the metabolism of uric acid is not completely understood, yet there have been researches that settle many points of fundamental importance in the theory of uric acid metabolism and gout. The publication, in 1901, of the investigations of Burian and Schur are referred to, and they showed that only the purin bodies of the food, either free or combined in nuclein, had any influence on the excretion of exogenous uric acid; and they also showed the relative importance of endogenous and exogenous uric acid. The investigations of His disproved many of the old views concerning the solubility of uric acid in water and in the urine, and on the effects of alkalies and other agents on uric acid solubility. Burian and Schur, Soetbeer, and Ibrahim and Solkowski have shown that uric acid is excreted by man in great part unchanged, and thus have disproved the old theory that uric acid is an antecedent of urea in the destructive metabolism of proteid.

In describing the general chemical behavior of uric acid, the purin bases, and the monoureides, the author gives the results of his investigations of the behavior of uric acid in solutions in pure water of simple and of mixed electrolytes, in organic compounds, and in the urine and the blood. The section on physiology gives the results of investigations that have been made on the physiology of uric acid, the effects of food, and the qualitative and quantitative changes therein, the effects of alcohol and of drugs, and those of exercise and other physiological functions. A final section is devoted to uric acid in pathological conditions of all kinds. The author adheres carefully to an exact statement of experimental data, and ventures but rarely to offer a theoretical explanation of the facts.

Miscellany.

The Origin of the Word Menstruum, so much used in medicine, is still obscure. Mr. Charles S. Carrington, of Brooklyn, submits the subjoined note as "a bit of copy which may perhaps throw some light on the matter": "In the year 1404 Pierre Bontier, a monk, and Jean le Verrier, a priest, *'assez bons clercs,'* by the direction of their patron, Jehan de Bethencourt, conqueror of the Canary Islands, drew up an 'introduction' for the preparation of the pagan islanders for Christianity and the instruction and guidance of those already baptized. This very interesting document can be found in chapters 47 to 52 of the narrative of the conquest and conversion of the Canarians, written by the two chaplains and published by the Hakluyt Society. Chapter 68 treats 'de l'Arche de Nouel.' After describing how Noah was warned of the approaching flood, it proceeds: 'Et luy commanda qu'il fist vne arche de bois carré, poly, et qu'il l'oindroit deuant et dehors de Betun; Betun est vn glu si fort et si tenant, qui quand deux pieces de fait en sont assemblées et ioinctées, on ne les puit par nul art des-assembler sinon par sang naturel de fleurs de femmes.' It is very evident from the interpolation of this definition of bitumen in their description of the ark by the two learned clerics that in their day the menstrual fluid was supposed to be a most potent solvent. The extended use of the word from a particular to a general signification is in accordance with the known laws of linguistics."—*American Druggist,* May 28, 1906.

Pasteur Institute of India.—The fifth report of the Pasteur Institute of India has been submitted. There has been a very steady increase in the number of patients using this institute; while 321 used it in its first year of existence, 612 used it in 1904, and during the past year the figures rose to 877. This is a very satisfactory testimony to the increased usefulness of the institute. The figures are made up of officers, men, women, and children of British army 205, of the Indian army 70, European "civilians" 94, Native "civilians" 508. Dogs, and next jackals, were the animals which inflicted the largest number of bites. Details are given of eleven cases in which the treatment failed to give relief. In addition to the antirabic work the institute has done a great deal of good work in making antivenene, antitetanic serum, and antidiphtheritic serum. The antivenene now issued is a mixture of cobra and daboia venoms. It is efficacious for bites of these snakes, but of course it is useless against bites of other Indian species.—*The Indian Medical Gazette.*

"Scrotal Tongue" in a Family Series.—Payenneville in the *Annales de dermatologie et de syphilologie* has recently written a thesis on the subject of Langue Scrotale; this observation was recorded during the collection of facts for that work. Scrotal tongue is the somewhat unhappy name which has been given to a fissured chronic glossitis, which is usually congenital. In the case here described the patient, a woman, aged fifty-four years, had eleven children, of whom three had this condition of the tongue. The patient herself had had the malformation of the tongue as long as she could remember—probably from birth—and stated that her mother had the same appearance of the tongue. Payenneville saw two of the daughters of the patient, twin sisters, who each had an exactly similar condition of the tongue, which is described in the text. The parents and all the members of this family are stated to have shown symptoms, in addition, of "arthritism." The author does not insist upon any casual connection between the two conditions.—Through *The British Journal of Dermatology.*

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending June 29, 1906:

Smallpox—United States.

Places.	Date.	Cases.	Deaths.
California—Los Angeles	June 9-16	1	
Florida—General	June 16-23	4	
Florida—Jacksonville	June 16-23	2	
Illinois—Galesburg	June 16-23	4	
Kansas—Topeka	June 13-20	1	
Kentucky—Covington	June 16-23	1	
Louisiana—New Orleans	June 16-23	16	
Missouri—St. Louis	June 16-23	1	
New York—Findley Lake	June 22	1	
New York—New York	June 16-23	4	
North Carolina—Beaufort	June 20	2	
Ohio—Cincinnati	June 15-22	3	
Tennessee—Nashville	June 16-23	2	
Wisconsin—Appleton	June 16-23	1	
Wisconsin—Milwaukee	June 16-23	2	

Smallpox—Insular.

Philippine Islands—Manila	May 5-12	1	

Smallpox—Foreign.

Africa—Cape Town	May 12-19	2	
Brazil—Rio de Janeiro	May 13-27	3	
Canada—Toronto	June 2-16	10	
Canada—Winnipeg	June 9-16	1	
Chile—Antofagasta	May 26	9	
Chile—Iquique	May 12-19	Present.	
Chile—Talcahuana, vicinity	May 19-26	Present.	
China—Hongkong	May 12-19	2	1
China—Shanghai	May 19-26		1
France—Marseilles	May 1-31		1
France—Paris	May 26-June 2	6	
Germany—Bremen	May 26-June 2		1
Great Britain—Hull	May 26-June 2	2	
Great Britain—Liverpool	June 2-9	2	
Greece—Athens	May 28-June 4		2
India—Bombay	May 22-29		5
India—Calcutta	May 12-19		44
India—Karachi	May 20-27	19	4
India—Madras	May 19-26		4
India—Rangoon	May 12-19		17
Italy—General	May 31-June 7	18	
Italy—Messina	May 26-June 2		1
Netherlands, The—Groningen	Apr. 15-30	5	
Russia—Moscow	May 26-June 2	4	2
Russia—Odessa	May 26-June 2	14	
Russia—St. Petersburg	May 12-June 2	27	8
Spain—Cadiz	May 1-31		1
Turkey—Constantinople	June 3-10		1
Switzerland—Zurich	May 26-June 2	1	

Yellow Fever—United States.

Louisiana—Mississippi River Quarantine	June 23	1 imported from Havana on Ss. *Holstein.*	

Yellow Fever—Foreign.

Brazil—Rio de Janeiro	May 13-27	1	
Honduras—Choloma	June 2-9	Present.	
Honduras—Pimienta	June 2-9	Present.	
Honduras—San Pedro	June 2-9	Present.	
Mexico—Merida	June 1-16	2	2

Cholera—Insular.

Philippine Islands—Manila	May 10-17	6	6

Cholera—Foreign.

India—Bombay	May 22-29		22
India—Calcutta	May 12-19		37
India—Rangoon	May 12-19		2

Plague—Foreign.

Brazil—Rio de Janeiro	May 13-27	1	
Chile—Tacna	May 26	Present.	
China—Hongkong	May 12-19	90	83
Egypt—Alexandria	June 4-5	1	1
Egypt—Keneh	June 2-7	6	4
Egypt—Minieh	June 1-7	4	4
India—General	May 5-12	13,207	11,414
India—Bombay	May 22-29		317
India—Calcutta	May 12-19		42
India—Karachi	May 20-27	101	96
India—Rangoon	May 12-19		49
Japan—Hiroshima—Ken	June 5	Present.	
Japan—Kobe	June 5	Present.	
Japan—Yokohama	June 5	1 on Ss. *Siberia.*	
Peru—Mollendo	May 15-23	1	

Public Health and Marine Hospital Service:

List of Changes of Station and Duties of Commissioned and Non-commissioned Officers of the Public Health and Marine Hospital Service for the seven days ended June 27, 1906:

BROWN, F. L., Pharmacist. Granted leave of absence for two days, from June 23, 1906, under Paragraph 210 of the Regulations.

COLLINS, GEORGE L., Assistant Surgeon. Granted extension of leave of absence for two days, from June 28, 1906.

FOSTER, S. B., Acting Assistant Surgeon. Granted leave of absence for ten days, from June 11, 1906.

GODDARD, F. L., Acting Assistant Surgeon. Granted leave of absence for thirty days, from June 20, 1906.

GRUBBS, S. B., Passed Assistant Surgeon. Granted leave of absence for fourteen days, from August 2, 1906.

HOUGHTON, M. W., Acting Assistant Surgeon. Granted leave of absence for eleven days from June 20, 1906.

KING, W. W., Passed Assistant Surgeon. Relieved from special temporary duty at Missoula, Mont., and directed to rejoin station in Washington, D. C.

MCCLINTIC, T. B., Passed Assistant Surgeon. Directed to report to the Commanding Officer of the Revenue Cutter *McCulloch*, for special cruise in Alaskan waters.

MCCOY, GEORGE W., Passed Assistant Surgeon. Leave of absence granted Passed Assistant Surgeon McCoy for one month, from April 14, 1906, amended to read twenty-five days only.

OWEN, HENRY, Acting Assistant Surgeon. Leave of absence granted Acting Assistant Surgeon Owen for thirty days, from May 25, 1906, amended to be effective June 10, 1906.

WALKER, R. T., Acting Assistant Surgeon. Granted leave of absence for four days, from July 11, 1906.

WARREN, B. S., Passed Assistant Surgeon. Granted leave of absence for four days, from June 22, 1906, under Paragraph 191 of the Regulations.

WARREN, B. S., Passed Assistant Surgeon. Detailed as member of Revenue Cutter Service Retiring Board, to be convened at Boston, Mass., June 28, 1906.

WOODWARD, R. M., Surgeon. Detailed as member of Revenue Cutter Service Retiring Board, to be convened at Boston, Mass, June 28, 1906.

Boards Convened.

A board of officers was convened to meet at the Bureau Monday, June 25, 1906, for the purpose of making physical examinations of candidates for position of Second Assistant Engineer in the Revenue Cutter Service. Detail for the board: Assistant Surgeon General J. M. Eager, Chairman; Assistant Surgeon J. W. Trask, Recorder.

A board of officers was convened to meet at the Hygienic Laboratory, July 2, 1906, for the purpose of making an investigation as to the origin and prevalence of typhoid fever in the District of Columbia. Detail for the board: Passed Assistant Surgeon Rosenau, Chairman; Passed Assistant Surgeon L. L. Lumsden, and Dr. J. H. Kastle, Recorder.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, for the week ending June 30, 1906:

ASHFORD, B. K., Captain and Assistant Surgeon. Will accompany E and H, 2nd Battalion, Engineer Troops, from Washington Barracks, D. C., to Mount Gretna, Pa., for duty during the encampment at that point.

BAKER, DAVID, Captain and Assistant Surgeon. Upon the abandonment of Fort Niobrara, Nebraska, ordered to Fort Bliss, Texas, for duty.

BORDEN, WILLIAM C., Major and Surgeon. Left Army General Hospital, Washington Barracks, D. C., on ten days' leave of absence.

COX, WALTER, Captain and Assistant Surgeon. Granted leave of absence for two months.

CRABTREE, GEORGE H., First Lieutenant and Assistant Surgeon. Will report in person, August 1, 1906, to Colonel William C. Gorgas, assistant surgeon general, president of the examining board, Ancon, Canal Zone, Isthmus of Panama, for examination to determine his fitness for advancement.

DUTCHER, BASIL H., Captain and Assistant Surgeon. Relieved from further temporary duty with Company A, Hospital Corps, General Hospital, Washington Barracks, D. C., and will proceed to San Francisco, Cal., and take the first available transport sailing for the Philippine Islands, and upon arrival at Manila, report in person to the commanding general, Philippines Division, for assignment to duty.

EKWURZEL, GEORGE M., First Lieutenant and Assistant Surgeon. Will proceed to Fort Slocum, N. Y., for temporary duty, and upon its completion will return to temporary duty at Fort Hamilton, N. Y. Assignment to duty at Fort Slocum, N. Y., is revoked.

GRISSINGER, J. W., First Lieutenant and Assistant Surgeon. Will, upon the expiration of leave of absence, proceed to Mount Gretna, Pa., for duty during the encampment at that point.

HARTSOCK, F. M., Captain and Assistant Surgeon. Relieved from duty at Fort Bliss, Texas, and ordered to New York City, N. Y., for duty as attending surgeon and examiner of recruits and as medical superintendent of the Army Transport Service in that city.

JEAN, GEORGE W., First Lieutenant and Assistant Surgeon. Ordered to report in person to Major Thomas U. Raymond, Surgeon, president of the examining board, Manila, P. I., on September 3, 1906, to determine his fitness for advancement.

LE WALD, LEON T., First Lieutenant and Assistant Surgeon. Left Fort Slocum, N. Y., *en route* with recruits to Fort Wright, Wash.

NELSON, KENT, First Lieutenant and Assistant Surgeon. Will accompany F and G, 2nd Battalion, Engineer Troops, from Washington Barracks, D. C., to Chickamauga Park, Ga., for duty during the encampment at that point.

PYLES, W. L., First Lieutenant and Assistant Surgeon. Left Jefferson Barracks, Mo., *en route* with recruits to Fort Wright, Wash.

RHOADES, THOMAS L., Captain and Assistant Surgeon. Left West Point, N. Y., on seven days' leave of absence.

WALES, PHILIP G., Major and Surgeon. Granted four months' leave of absence, to take effect upon arrival in the United States.

WILSON, WILLIAM H., Captain and Assistant Surgeon. Relieved from duty in New York City as attending surgeon and examiner of recruits, and as medical superintendent of the Army Transport Service, and ordered to Fort Hamilton, N. Y., for duty.

WOODRUFF, CHARLES E., Major and Surgeon. Will proceed from Plattsburgh Barracks, N. Y., to Mount Gretna, Pa. (via Headquarters, Department of the East, Governor's Island, N. Y., to consult with the Chief Surgeon), for duty in connection with the encampment at that point.

The following named medical officers have been appointed members of a board of officers to meet at Manila, P. I., for the examination of such officers of the Medical Department as may be ordered before it to determine their fitness for promotion or advancement: Thomas S. Bratton, Captain and Assistant Surgeon; William E. Purviance, Major and Surgeon; Thomas U. Raymond, Major and Surgeon.

The following named medical officers will report on the dates specified to Lieutenant Colonel George H. Torney, Deputy Surgeon General, president of the examining board, at Army General Hospital, Presidio of San Francisco, Cal., for examination to determine their fitness for advancement:

Bartlett, C. J., First Lieutenant and Assistant Surgeon, August 27, 1906.

Eastman, W. R., First Lieutenant and Assistant Surgeon, September 20, 1906.

Hall, James F., First Lieutenant and Assistant Surgeon, September 20, 1906.

Smith, Herbert M., First Lieutenant and Assistant Surgeon, August 27, 1906.

The following assistant surgeons will report in person on September 20, 1906, to Major William H. Arthur, Surgeon, president of the examining board, at the Army Medical Museum Building, Washington, D. C., for examination to determine their fitness for advancement: First Lieutenants Perry L. Boyer, R. F. Mercalfe, R. B. Miller, James M. Phalen, Charles A. Ragan, and Edwin W. Rich.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending June 30, 1906:

ELY, C. T., Assistant Surgeon. Detached from duty with the marine detachment on the Isthmus of Panama and ordered home to await orders.

GEIGER, A. J., Assistant Surgeon. Ordered to the *Brooklyn.*

NASH, F. S., Surgeon. Detached from the *Monadnock* and ordered to the Naval Station, Olongapo, P. I.

PICKRELL, G., Surgeon. Detached from special duty in the Bureau of Equipment, Navy Department, and ordered home to await orders.

SHIFFERT, H. O., Passed Assistant Surgeon. Detached from the Naval Hospital, Philadelphia, Pa., and ordered to duty with the marine detachment on the Isthmus of Panama, sailing from New York, N. Y., on July 3, 1906.

WOODWARD, J. S., Assistant Surgeon. Detached from special duty in the Bureau of Equipment, Navy Department, and ordered home to await orders.

Births, Marriages, and Deaths.

Married.

ANDERSON—BELL.—In Atlantic City, N. J., on Tuesday, June 16th, Dr. Duncan MacKenzie Anderson, of Toronto, and Miss Gertrude A. Bell.

ELIOT—VAN LENNEP.—In New York, on Saturday, June 23rd, Dr. John Dean Eliot and Miss Rebecca R. Van Lennep, daughter of Dr. William B. Van Lennep.

GAIN—KING.—In Hamilton, Ontario, on Wednesday, June 20th, Dr. J. Cameron Gain and Miss Edith Florence King.

MASON—FULLER.—In Washington, D. C., on Monday, June 25th, Dr. Robert F. Mason and Miss Fanny Fuller.

LEVANT—GURITZKY.—In New York, on Sunday, June 24th, Dr. Harry Lazarus Levant and Miss Flora Guritzky.

WISE—GRISWOLD.—In New York, on Thursday, June 7th, Dr. Leslie Drummond Wise and Miss Marguerite Dristan Griswold.

WYMAN—WEEKS.—In Mount Vernon, N. Y., on Tuesday, June 12th, Dr. Hall Clement Wyman and Miss Lulu Weeks.

Died.

CRAIK.—In Montreal, Canada, on Thursday, June 28th, Dr. Robert Craik, aged seventy-seven years.

FABER.—In Philadelphia, on Sunday, June 24th, Dr. Charles F. Faber, aged forty-one years.

GREENMAN.—In Elmira, N. Y., on Tuesday, June 26th, Dr. Orlando F. Greenman, aged eighty-two years.

HICKS.—In Midway, Kentucky, on Monday, June 25th, Dr. Robert W. Hicks.

JUDKINS.—In Cincinnati, Ohio, on Saturday, June 23rd, Dr. William Judkins.

LEET.—In Greenville, Ohio, on Saturday, June 23rd, Dr. F. H. Leet, aged eighty-five years.

RONGA.—In Chicago, on Wednesday, June 20th, Dr. Joseph Ronga, aged sixty-two years.

STARKE.—In Rockford, Illinois, on Sunday, June 10th, Dr. C. V. Starke.

TANNER.—In Dorchester, Massachusetts, on Thursday, June 21st, Dr. John A. Tanner, aged fifty-four years.

THOMPSON.—In Golden City, Missouri, on Monday, June 25th, Dr. G. T. Thompson, aged sixty-two years.

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Original Communications.

THE THERAPEUTIC VALUE OF ERGOT.*

BY OLIVER T. OSBORNE, M. A., M. D.,
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Ergot is a parasitic fungus occurring most commonly in central Europe. It was recognized centuries ago by the peasants as a blight or poison of grain, and was used in parturition by the natives themselves three hundred years ago. Extracts of the ergot fungus were introduced into medicine by Dr. Stearns, of New York, in the early part of the last century, but it was only first carefully investigated from a chemical standpoint by M. Tulasne, in 1853.

The United States Pharmacopœia specifies the sclerotium of claviceps purpura, which occurs on rye, as the ergot that shall be used, and declares this not fit for use when it is over a year old.

The physiological or poisonous effect of ergot resides in several principles, most of which are unstable and their chemical investigation incomplete. In 1884, Kobert described ergotinic acid, which contains nitrogen, and has properties of a glucoside, acting like the sapotoxine group of poisons. Cornutine is an alkaloidal principle which stimulates the nervous system to convulsions. Sphacelinic acid is a resinous acid which is the part of ergot that produces gangrene. It contains no nitrogen. Jacoby has shown that in this acid is a poisonous body, sphacelotoxine.

The best preparation of ergot to use is certainly a purified extract, there being no one active principle that represents the activities of ergot. Also, many so called purified preparations of ergot are useless for ergot activity. Of the pharmacopœial preparations, the fluid extract is the only one of real value. Several preparations of refined extracts of ergot are stated to have had the principles that irritate and cause gangrene removed, and some of these refined preparations, notably ergone and aseptic ergot, are very active, not irritant, and can be used hypodermatically and for any length of time without causing ergotism.

The principal uses of ergot are as a nervous sedative, as a circulatory tonic, as a smooth muscle stimulant, and as a uterine contractor.

The primary physiological action of ergot is to contract the bloodvessels, slow the heart, diminish the amount of blood in the central nervous system by contracting the bloodvessels of the brain and spinal cord, increase intestinal activity by stimulating the smooth muscle fibres of the intestines, strengthen the diminished power of the bladder by the stimulation of its muscle fibres, and contract a dilated or partially distended uterus best during its parturient activity. If ergot is pushed to its full physiological power, the bloodvessels become so contracted as to cause cold extremities, vasomotor tension is greatly raised, the left ventricle of the heart is strained by its endeavor to contract against such resistance and may become dilated and incompetent. Peripheral irritability and sensibility is diminished by the decreased local blood supply, as well as by the greatly decreased blood supply of the central nervous system.

If it is given by the mouth, large doses soon cause irritation of the gastrointestinal canal, and vomiting and purging will occur, while in physiological doses the amount of urine is increased, probably by the increased vasomotor tension, but in too large doses the amount of urine is often diminished.

How this drug is eliminated is not known. Very likely it breaks up into its component parts and is metabolized, and thus could not be found any more than could the active parts of a mushroom.

Acute disturbance could occur, as above stated, from profound central nervous depression, with dyspnœa, very cold extremities, and labored heart action. Chronic poisoning from the administration of ergot I have never seen, nor do I know of any one who has observed it. In other words, I have come to believe that ergotism, with its areas of anæsthesia, paralyses, and peripheral gangrenes can only occur from eating ergotized grain, and such damaged food products are now rarely or never allowed to reach the consumer.

The indications which ergot meets are:

1. To contract the bloodvessels, raise the blood pressure, and stimulate the heart in conditions of shock, collapse, and circulatory depression.

2. To contract the bloodvessels of the brain and spinal cord, especially of the meninges, when they are acutely inflamed, irritated, or congested.

3. To quiet the nerve pains in inflammation and irritation of nerves, and especially if the origin of such irritation is central.

4. To promote activity of the bowels when there is intestinal muscular debility, paresis, or

* Read at the annual meeting of the American Therapeutical Society, held in New York, May 3, 4, and 5, 1906.

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paralysis, as in tympanites after operations, or where there is obstinate constipation.

5. To contract the uterus in uterine hæmorrhage.

6. To ameliorate asthma which is due to nervous irritability or reflexes.

7. To, I believe, modify or diminish excessive secretion of the thyreoid, as occurs in some forms of hysteria and in Graves's disease.

8. To quiet the nervous system, and aid in overcoming the morphine, opium, alcohol, or other drug habits, and to increase the potency of any dose of morphine that may be required for nerve pain.

1. The use of ergot to meet the first indication is now well established. When one of the better preparations is used hypodermatically, and best in the deltoid muscle, I believe there is no drug that we possess, except suprarenal the action of which is so short lived, that can compare in value with ergot. It may be used in any condition of cardiac and circulatory failure, whether it be in typhoid fever, pneumonia, meningitis, operative shock, or shock from injury. Where there is urgency two, three, or even four hypodermic syringefuls may be injected at one time, the subsequent frequency depending upon the results. The best action both on the nervous system and on the circulation is obtained only when it is used hypodermatically, although it has good action when given by the mouth. We are greatly indebted to Dr. Alfred T. Livingston, of Jamestown, N. Y., for compelling the profession to realize the advantages to be obtained from ergot in cardiac failure. I do not wish to be understood as advocating ergot in cardiac disease where it would be inadvisable to increase the peripheral resistance and thus possibly increase a failing heart muscle. In chronic heart disease it is largely the heart that fails and not an arterial weakness. In acute circulatory failure it is largely the vessels that are at fault, when ergot would be indicated.

2. The advantages obtained from this drug in cerebrospinal inflammations cannot be too highly lauded. I have already gone on record (*New York Medical Journal*, February 17, 1906) as advocating the use of ergot hypodermatically in cerebrospinal meningitis, and I wish to reiterate that I do not believe any other one drug combined with proper general management of the patient does as much good as does ergot. I have yet to see a case that was not benefited by it, even if not cured. Also, in any condition of nerve pain I find that less morphine is required if ergot is also given. Besides, in inflammations, I find that in neurasthenic conditions, or in general weakness, where there is sleeplessness, and the stronger more active hypnotics are best not given, that a dose of ergot at night tends to quiet the brain and produce sleep. It also will often relieve congestive headaches where there is not high blood tension.

3. In neuritis, in referred pains, and in psychic or hysterical pain, ergot is of benefit, and besides the actual advantage is the negative advantage of using a drug which we know can do no harm, which is not true of most of the analgesics, such as the coal tar products, bromides, etc.

4. Nothing is feared more by surgeons after abdominal operations than inactivity of the bowels, with the consequent accumulation of gas, which may cause distention sufficient to interfere with respiration and the action of the heart. Atropine in enormous doses has been used to cause normal intestinal peristalsis, it acting as a stimulant to smooth muscle fibre and also dulling the endings of the peripheral nerves in the intestines, which may have been injured sufficiently to cause inhibitory pain. Eserine, almost the obverse of atropine, has been used on account of its marked stimulant ability to smooth muscle fibres of the intestines. Both of these drugs, as well as various cathartics and methods of using them, have been more or less successful. Probably, however, nothing is more advantageous in this decidedly difficult condition to combat than is ergot, given either by the stomach or better hypodermatically in large doses. In persistent ordinary constipation I have often had splendid results from the addition of ergot to whatever laxative treatment was instituted.

5. The fifth indication to act upon the uterus is too commonly resorted to to require any discussion. Whether the several other drugs used for this purpose, such as viburnum, hydrastinine, cotarnine hydrochloride (stypticin), or quinine, are ever as valuable, or what are the special indications for each is not in the province of this paper to discuss. I might parenthetically say that the administration of mammary gland extract in profuse menstruation or menorrhagia where there is no serious mucous membrane lesion or tumor growth is often of marked advantage, especially in menorrhagia of young girls.

6. How frequently ergot is of value in these cases I am not ready to state, but I have had several cases in which I obtained marked benefit from its use, more than with bromides, or ordinary doses of morphine. There are two types of asthmatic attacks, in one of which nitroglycerin or vasodilators are of the greatest advantage, and another type in which the same marked advantage can be obtained from suprarenal in some form, this during the paroxysm. Other types of asthma, and I am not going into the ætiological cause, which, of course, must be removed, whether it be nasal polypi or other reflex, where there is more or less persistent wheezing or frequently recurring, almost nightly, attacks, that ergot has seemed to me of marked benefit.

7. Most cases of Graves's disease, with its lowered blood tension, hot flashes, profuse sweating, increased nervousness, and sleeplessness are benefited by ergot; of course not to the exclusion of such drugs as strophanthus, perhaps bromides, thyreoidectin, or other antithyreoid serum, combined with rest of mind and body, and a diminished meat diet. Ergot also is of benefit in all cases of hysterical excitement, more I believe than all the so called antispasmodics, except possibly the lime and soda glycerophosphates which also seem to inhibit and quiet thyreoid activity. Of course, ergot should not ordinarily be given during the menstrual epoch.

8. As a corollary to the last indication and to its indication in cerebral irritability and inflammation is the use of ergot in drug habits. It certainly aids in a more rapid diminution of the drug and the final withdrawal of it, and with the weak heart and cerebral excitement of delirium tremens or other forms of acute alcoholism ergot hypodermatically is a most splendid, safe, and effective treatment. I do not say that it should be given to the exclusion of other drugs, but it is one of the most valuable.

There is one more condition in which I have used ergot successfully. I have not made this an indication because I have not had cases enough to warrant it. In fact, I have only studied one case, and that was a most inveterate diabetes insipidus in a young boy, ten years of age, whom I have had under observation for nearly two years. He came to me the most wizened up specimen of young humanity that I think I have ever seen short of an infantile atrophy case. He looked like a little old man, and the symptoms were those of a profuse volume of urine, ten to twelve quarts a day, rising from ten to twelve times at night to pass urine, vomiting, persistent headache, itching of the skin, faintness, inability to concentrate his mind upon any subject, lying around dormant or severely sick most of the time, utterly unable to play, study, or do anything. He had seen a number of physicians, and of the best, and many treatments had been tried unsuccessfully. Careful examination revealed nothing but a diabetes insipidus without any apparent cause, and no nervous lesion or injury that could be discovered. The output of urine was always greater than the measured intake. The urine was examined weekly for months, and the food measured, weighed, and analyzed. The specific gravity of these urines was sometimes even with pure water, and never more than 1.002 to 1.004. Under this careful watching and scientific laboratory investigation every treatment, except morphine and opium, were tried without success; suprarenal, thyreoid, pancreas, bromide, digitalis, quinine, and various others.

Suffice it to say, that I was convinced it was a vasomotor affair and gave him ergot, and every time that the ergot has been stopped for observation purposes the boy has always failed to improve and has some bad symptoms develop. In a word, the ergot treatment, the amount of which given him was one half teaspoonful of the best fluid extract, four or five times a day, at first, until now he is on one half teaspoonful twice a day, has caused his headaches to cease, his appetite to improve, and he has gained weight wonderfully, almost more weight than I wish he had. He is able to study, and plays as usual. The amount of urine is kept down to about five quarts a day, below which I cannot bring it. He still must urinate a number of times at night, and wakes up on account of thirst. The ergot has done him nothing but good, although he has taken it nearly continuously for a year and a half. He does not show symptoms of ergotism, and if he progresses as he has done, there will be no necessity for giving it in the near future.

252 York Street.

THE PRINCIPLES OF TREATMENT IN DISEASES OF CHILDREN.*

By J. Madison Taylor, A. B., M. D.,
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"Oh, the little more and how much is it,
And the little less and what worlds away."

I.

Knowledge of principles of therapeutics adapted to the conditions of childhood is of far greater importance than to those of the adult. Differentiation must be finer; greater niceties of physiological reasoning, and more caution and exactitude must be exercised, because of the persistence of embryonal features not yet fully understood or appreciated. Scientific medicine is based upon adult findings. Pædiatrics is still practically a modification of these designed to fit as well as possible.

The problems of childhood are far more complex than those of adults, if the sphere of psychoneurosis be excluded. The key to success in treatment lies in acquiring an intelligent appreciation of the intricacies of infantile, childish, and adolescent aspects of growth, change, derangement, and capabilities for repair. Nothing can be more worthy of our best efforts than to achieve facility in the treatment of childish ailments. Errors and omissions in combating morbid forces in them impair for all time constitutional integrity. They cannot be condoned or adjusted as are similar omissions or perversions assailing the adult.

The child is a vitalized mechanism of indescribable delicacy. If disorders pass unchecked into disease the effects are both direct on structures and indirect on development, bearing heavily upon conformation, distorting organs, checking growth in the brain and controlling centres. Attention given to the correction of childhood's maladies, therefore, cannot be too urgently encouraged.

The cells of the child are in process of almost primitive evolution. Selective affinity is not yet developed; resistance is low, irritability, conductivity, and other inherent properties are unstable. Resistance is so small that even a slight excess, or prolonged continuance, of an irritant, whether it be photic, thermic, chemical, toxic, or other, may produce violent perturbations, and readily cause such alterations in cellular integrity as to induce profound and lasting damage. The balance of the vasomotor mechanisms in the young has not yet been developed to a degree which enables them to sustain safely the effects of over much interference. The cerebrospinal nerves respond so swiftly to irritants that reflex potentials may readily become overwhelming. Hence, e. g., convulsions follow relatively slight causes.

The elemental principles by which we can be guided in combating the disorders of infants and children should be thoughtfully formulated for daily use. We can at least determine the form and direction which these deviations from normal functionation will probably take and outline safe measures by which they can be modified or overcome.

The keynote of pædiatric medication is the encouragement of development, the maintenance of autoprotective forces. The healthy infant is a

* Address on the Progress of Therapeutics in Pædiatrics, read before the American Therapeutical Society, New York, May 4. 1906.

being whose organic development has proceeded on normal lines, and is in cellular equipoise, a product of the resultants of sound heredity, wholesome antenatal conditions, and suitable environment, maintained within reasonable limits. Small variations are, however, permissible. We are usually compelled to estimate the status of development chiefly upon inferential evidence. We may expect little more to guide us than the testimony of our trained observation, until we shall know more of physiological variants and the potentialities of persisting embryological factors. Even where this general survey furnishes all that can be reasonably expected there remains a larger source of functional derangement of which we have had as yet indicated only a few leading facts and prinicples, viz., as to those of the internal secretions, the regulative nervous mechanisms, and the processes of oxygenation.

Biochemistry is a field from which we may hope for practical therapeutical hints of far greater significance than from pathology, as it is generally conceived. To secure a clear comprehension of indications the avenues of knowledge are hedged about with difficulties, especially because physiology has not yet furnished us with sufficient working data.

In the use of drugs, or the explanation of their effects, we are compelled constantly to fall back upon a careful judicious empiricism. When we are able to know that a chosen medicine or preparation does produce certain specific and uniform effects, we shall then be able to offer explanations of its specific and individual applicability, next to anticipate and formulate reasons for deviations and exceptions. Biochemistry may then explain these, as it becomes elaborated, and illumine our dark corners by new phases of truth.

An obvious and imperative need is a fuller and broader study, a clearer interpretation of existing data. We are too eager for new facts to adequately sift, correlate, and test those already in our hands. Thus, the status of organic and structural development, especially of the blood and blood making organs, the ductless glands, variations in oxidation states in protoplasm, is plainly of the utmost importance in decisions and for outlining treatment. There are numerous simple as well as complex processes set in motion by abnormal conditions, some of which are, however, advantageous or economic.

In the complex reactions to injurious agents, such as of inflammation and infection, the organism needs conservation of its own protective substances. These are obtainable through a maintainance of vascular balance, vasomotor tone, integrity of circulation in the spinal segments, activity of leucocytes and lymph formation, and of the adrenal system.

These protective reactions are displayed beautifully in the establishment of natural or acquired immunity. In the instances of favorable pathological reactions, we have physiological prototypes such as growth and regeneration. Phagocytosis pointed out by Metchnikoff and his followers, emerging triumphantly from the animadversions of the critic, is the source of much light.

The blood fluid plays a most important rôle in phogocytosis in that it influences invading bacteria so effectively that the phagocytes can more easily digest them. The production of antitoxines and antibodies is thus shown to be the result of special adaptations of vital mechanisms whereby the balance of nutrition is maintained. Under abnormal conditions there are noticeable differences between normal and pathological manifestations of function which thus become inefficient, imperfect, diverted from their purpose.

As there are varients in the action of purely regulatory mechanisms, so also are there degrees and individual differences in the powers of adaptation and in protective reactions. These adjust themselves in diseases, and either forbid or permit continuance of function, hence of life.

It has therefore become clear that we are now in a different position in our search for remedies than we were before these facts became established. In the selection of the means to control processes, we have long exhibited too great a tendency to be influenced in our belief by waves of extraprofessional or of popular opinions. We cannot be too cautious, for example, in accepting the recommendations of manufacturing chemists, who add much to knowledge, distinctly too much, pouring out a flood of modified findings of established facts with a new one here and there, all which may well obfuscate the most vigorous intellect. Their findings, useful in part, yet come in such an overwhelming mass that we should perhaps be better off without them. The research scholar in the laboratory, moreover, too often permits his zeal to distance discretion, to run his lines so fine as to lose sight of many important principles by the way.

It is unequally unwise to bow to the clamor of reactionaries, within and without our ranks. We have already learned much from, and will never cease to benefit by, empiric data. The boldness of the practicing physician in putting his courage to actual bedside tests has furnished the real groundwork for practical medicine. His observations are of priceless value and could be more so if only he exhibited greater patience and accuracy in recording.

It is admitted that for the safe and effective treatment of the sick, we have improved little upon various methods long ago established. In the treatment of infantile ailments, a potent cause for high mortality is over much interference. How can it be otherwise? Dr. Frank Billings, in his presidential address before the American Medical Association, estimated our knowledge of the physiological action of drugs to be clear in only two, quinine and mercury. Dr. John H. Musser, his successor in the presidential chair, in a recent address before a Philadelphia pharmaceutical audience, declared that we did not yet know anything accurately of the action of drugs. Thus these men would obliterate even the last vestiges of our so called "scientific therapeutics." Many other competent clinicians have spoken in the same vein. Empiricism is therefore our sheet anchor. It is only where clearly defined morbid conditions, positively known to be met favorably by a given remedy are present, that we are on safe ground. But how frequently are we misled by objective symptoms, often our only guide in young children?

Plainly great prudence should be our rule in the use of remedies until both symptomatology and therapeutics shall have been placed upon a more solid foundation.

Will such time ever come? I firmly believe that it will, and moreover, that our own country has already contributed the foundation stone for an entire transformation of present conceptions both as to the pathogenesis of disease and its rational treatment. I refer to Sajous's work on *The Internal Secretions and the Principles of Medicine* (1903). Indeed, say what we like, but wherever we turn we are brought face to face with the problems of body's autoprotective resources, the *vis medicatrix naturæ*. Here is our touchstone, our guide, our credo. We may speak of invading bacteria but unless we know how they overcome, through their toxines, the body's defensive mechanisms, we will never understand the pathogenesis of disease due to them; we may speak of the bactericidal properties of the blood and of its leucocytes, but unless we know how these bactericidal agents can be increased in the blood at will, we will never be able to command their destructive action. These are precisely the principles which Sajous has given in outline in his first volume, but which are worked out in detail as regards each disease and each drug in the second, soon to appear. I am not alone in the belief that his labors will eventually place medicine on a footing at least as sound as that of surgery. His views are steadily gaining ground both in this country and in Europe. I do not fear to state my confidence that the general principles he has introduced will ultimately serve to place our country in the van of scientific nations.

The hygiene of sick infants is worthy of profound study and should be formulated on lines of exactitude and science. It is usually taught in a most haphazard fashion. The concept of each student is marred by personal tastes, preference, or accident. It is only possible here to allude briefly to a few points or principles. Infants demand the maximum of quiet, a uniform temperature, the utmost cleanliness of air, simplicity of diet, freedom from irritants of all sorts, plenty of light, and the least possible disturbance.

Young children are extremely susceptible to the reverse conditions, but vary enormously in their adaptability and capacity for enduring irritants. Hence it follows that many times, when we cherish the conviction that our health restoring measures have prevailed, the sick infant has survived in spite of them, or it may be that those factors we could not control, but deplored, were really less hurtful than we feared.

For instance, let me cite a fragment of my personal experience in dispensary work at the Children's Hospital in Philadelphia, where for twenty-five years I have held clinics in the cold months. During that time I have had under my care some thousands of young children suffering from bronchial and pulmonic troubles, and others ill from diverse causes, and all presumably susceptible to the harmful effects of cold. It is difficult to recall instances of death or serious increase of the existing disorders from the induction or aggravation of respiratory complications. Yet these little ones were brought in all kinds of weather.

Exposure to air, especially cold, is viewed with greater liberality now that a more exact knowledge prevails of the value, rather than peril, of the agent. The physician has conspicuous need of an accurate knowledge of the principles of bodily hygiene to use in the work of each day. How to get it is not clear; so rarely is it taught practically or systematically. Few take advantage of such opportunities as come their way. Most of us cherish the erroneous conviction that our chance reading and the utilization of casual opinions will suffice.

Diet is a long story. The feeding of infants is now admitted to be more important than any other agent in growth, development, and repair. This one achievement of the profession, the modern scientific modification of milk and all that appertains to improvement in milk supply and transportation, is an evidence of enlightenment beyond praise. It has reduced by one half or more the difficulties of treating infantile disease. This enlightenment still leaves much to be desired so far as it effects the community.

It is conceded by physicans that the life growth, and the maintenance of health of infants depends more largely on the quality and condition of the milk than any other factor. It is now demonstrated beyond peradventure that thoroughly good milk can be supplied, provided it is demanded and provided people will pay for the inevitably increased cost. In the face of all this, the public, both those of moderate and ample means, exhibit the most astonishing, deplorable indifference, often active opposition to a reasonable increase in price. This unfortunate attitude stands as a barrier to the best efforts of the profession in one of its most vital postulates. By this difficulty, offered to scientific conviction and teaching, the lives and health of a large proportion of our embryonic citizens are yearly sacrificed. The waste of money values alone is thus incalculable.

The remedy is a constant crusade on the part of physicians everywhere. Boards of health and inspectors of dairies are found to be capable and willing, but zeal must be supplied by the profession, one and all. Dairy men are not to blame if the consumer demands the cheapest product; they can scarcely be censured if the buyer will persist in selecting the cheapest grade of milk, and is only critical of the fat, not of the bacterial or filth, content. Just here is it pertinent to record an observation which much experience has forced upon me, viz., that the pronounced advances made in the hand feeding of infants tends to encourage neglect on the part of mothers to suckle them. Among the well to do classes the omission of breast feeding is increasing. Some physicians, many perhaps, encourage mothers to wean their babies, without sound reason for doing so, often merely maternal selfishness or vanity. This vice is extending to the working classes. More and more women find it easy to confide their babies to day nurseries, or professional caretakers, and to supplement their husband's income by work in shop, factory or the like. Meanwhile benevolent organizations supply milk or milk mixtures at cost, and thus unwittingly become great agencies in prostituting the sacredness, the wholesomeness of the home.

Dietetic regulation is now recognized to be

capable of overcoming a large group of functional disorders which, when they persist, pass into serious disease. Digestive disorders in infancy form the foundation for many infections of the gastro-intestinal tract, which in turn invite severer infections, e. g., tuberculosis, acute toxæmias. Nutritive defects are at the basis of neuroses and psychoses, oftentimes the sole assignable cause. Cure of those childish nervousnesses, so common, but little appreciated by parents or even some physicians, fidgitiness, fear, night terrors, insomnia, spasmodic disorders, chorea, tics, eclampsia, hysteria, neuroses, and neurasthenia is accomplished in great part by full attention to corrective dietetics. It is wise to accept the nutritive fault as the basis of treatment till further light is shed on the problem.

Careful dietetic treatment of subacute and chronic disorders of digestion, and their endless consequences, cannot be over esteemed though it is often over estimated. However efficacious it may prove in many instances full control over the patient cannot always be exercised for the length of time, often months or years, admittedly essential to secure full success. In a recent paper L. Emmet Hoult (*Pennsylvania Medical Journal,* April, 1906) makes the emphatic assertion that in chronic digestive disturbances in children, beyond the age of infancy, careful dietetic treatment is the only measure which accomplishes anything permanent, admitting at the same time it demands an extended period of absolute supervision.

Where excessive intestinal fermentation occurs local flaccidities and atonies follow, a train of retrograde disintegration phenomena is exhibited in the structures of the viscera and those which support them. Rhythmic action, a cardinal function of the hollow viscera, becomes impaired along with loss of peristalsis, dilation, and the whole range of the visceral ptoses. Here dietetic regulation needs to be supplemented by manual treatment and other forms of vasomotor stimulation. Vasoconstrictor derangement underlies and conditions most diseases, all soon or late, and when established there follows passive congestions, infiltrations of parenchymata of organs and their supporting structures, relaxation, dilatation, ptoses, functional alteration, and disintegration. The cell bodies in the segmental centres controlling the viscero motor activities become starved and upon their repair depends restoration of function.

A prompt and efficacious means of achieving this is by employing gentle alternating pressure on the tissues of the back adjacent to the spine along with regulation of diet and possibly some drugs enhancing adrenal action.

A most material point in dietetics is to secure full mastication and insalivation, though this is too often overlooked. Children, many of them, bolt their food, nurses and parents are often careless or hurried and regard their duty done in supplying enough, often too rapidly and too much. This fault causes almost as many digestive troubles as unsuitable food.[1]

A practical part of all hygiene or national regulation is exactitude and minutia in all the acts, duties, pleasures of the day. These directions should be on broad lines, dominantly sketched. For a sick child we must have always plenty of fresh air, cool but if too cold it tends to weaken the already impaired resistance in the lungs.

The true purpose of the therapeutist is not only to restore the balance of health in the individual but to reach much further and aim at perfection. His resources are, first and last, dependent upon the intrinsic resources of the organism; his prerogative is not, or should not be limited to restoration, but includes always efforts at development and amplification of the autoprotective forces. This can be carried so far that hereditary and inherited faults can often be eliminated in two or three generations. These autoprotective forces, inherent powers for regulation, adjustment and maintainance of vital actions, should be studied from various aspects, and our remedies always directed to repair of the fundamental mechanisms.

At the head of all forms of therapy stands preventive treatment. By this is not meant board of health measures. It would be absurd to include the negative as a part of a positive proposition except for the fact that prevention is largely partial and relative, hence must be reckoned as an integral part of systematic therapy. The largest concrete results within the possibilities of medical art lie in the early recognition of abnormal conditions and modifying these wholly or in part. We all have a more or less definite notion of the scope of preventive measures and hygiene especially as applied to tuberculosis, rickets, scurvy, lymphatism, etc. In respect to scoliosis, for instance, as Percacini has pointed out (*Gazzetta degli ospedali e delle cliniche,* February 11, '06) this is a most preventible state, yet little correction is attempted in its incipience. Many derangements and diseases of adults exhibit their beginnings in childhood, i. e., convulsions, hence arise epilepsies, palsies, contractures, deformities, etc. Bronchial attacks and their recurrences foreshadowing asthma; likewise the milder neuroses and psychoses lead to endless puzzling disorders. So also of many derangements of unstable cellular adjustments of childhood. All this, as I have repeatedly pointed out, is entirely within the province of the watchful physician. The real difficulty is less his omission of accurate observation and corrective measures than failure to secure the co-operation of the family. To know, one must have opportunity to observe. The duty of parents is to invite the attention of the physician to trivial seeming disorders. To do this is the clearest economy of money, suffering, and future disabilities.

Among the measures recognized as forceful in limiting the spread of communicable diseases is the biological principle of acquired immunity. We cannot make much practical use of this, but it is a great comfort to know that, since such diseases must prevail until they are stamped out, there are some mitigating circumstances connected with their prevalence.

Evidence exists to show that the processes of disease are accompanied by a conservative action tending toward repair, a reinforcement of the autoprotective mechanism. E. W. Watson has enunciated the proposition (*Monthly Cyclopædia,* March,

[1] The scientific principles which underlie the milk feeding of infants have received much classification of late at the hands of Dr. Godfrey A. Pisek, *Medical Record,* September 9, 1905; Thomas S. Southworth, *Ibidem, January* 13, 1906; L. E. Holt, *Pennsylvania Medical Journal,* April, 1906, etc.

1906) that by repeated exposures to infection there comes an acquired immunity which in the aggregate, and under a certain large proportion of circumstances, and in the long run, results beneficently. He says:

"There is also the way called 'the survival of the fittest,' and for it we substitute the survival of the unfit. There is also the way we might call immunity through exposure, and we substitute for it immunity by seclusion, quarantine, and segregation; but for immunity through exposure there is still something to be said. Immunity by exposure is based on a great, underlying law which extends to things moral as well as things microbic—to the action of the elements that war against us, as well as to the bacteria that so silently bear death influences. Do we shun cold and fear draughts and exposure? How are we best inured but by the repeated short shocks of cold bathing that rouse up resistance? So, while no one could urge an entire abandonment of modern methods, it is perhaps as well, once in a while, to pause and try to realize that, apart from them, there is ever working a force that makes for health, and, though slow, can through hard fought battles and many slain bring us victory."

Sir Frederick Treves (address at the Edinburgh Philosophical Institute, 1905) asserts his conviction under the title of *The Beneficence of Disease* that the end results of disease constitute a protective influence in pathological processes declaring "if it were not for disease the whole human race would soon become extinct."

In an editorial in *American Medicine,* December 30, 1905, comments are made on the decreasing virulence of infectious diseases showing that there is some evidence to prove that these may eventually become harmless through the cure and survival of immune hosts. As old diseases become modified, possibly new ones may arise.

C. Archibold Ried years ago called attention to this process in *The Present Evolution of Man.* Theobald Smith (*American Medicine,* October 22, 1904) showed that a biological adjustment has probably been caused in some intsances by the survival of only those bacteria which are able to live in the host without the production of free toxins. Some of these remain confined to the surface of skin or mucous membranes and only occasionally induce generalized disease, merely local disturbances.

These, and similar opinions, emanating from careful thinkers, are glimmerings of elemental truths which we may hope ultimately to understand and apply. To achieve this end we must employ increasingly philosophical methods fortified by comprehensive view points attainable only by the formulation of essential principles and adapting them to our clinical use. Nevertheless, while contemplating these significant generalizations our duty is to limit to the uttermost the spread of transmissible diseases. This is possible in proportion as (1) The general practitioner is vigilant and dominant, (2) the cooperation of the family, and (3) the cooperation of the municipality is secured. Medical inspection of schools is accomplishing a silent but tremendous victory. This care is the more needed in view of the disastrous secondary effects of infections, and nothing can condone omission of all reasonable precautions in the isolation of those sick of transmissible disease.

Serum therapy is still in a position of experimentation. In the treatment of diphtheria the use of antitoxine has become established as a pronounced success. In respect to other diseases there is only moderate encouragement (E. W. Goodall, *British Medical Journal,* October 8, 1904). With respect to plague, typhoid fever, dysentery, and streptococcal infections, there is sufficient evidence of benefit noted to stimulate further endeavor. Something is probably lacking in the form of the antitoxine which may be yet supplied, and justify a wider use and confidence. The intravenous administration is found in some instances to be more efficacious (C. J. Martin, director of the Lister Institute), it saves time, eight hours, as stated by von Bering. These conclusions were also reached from a careful analysis of all the recorded facts by Sajous in his book (*op. cit.*) published 1903.

The laws of growth, as formulated by Theodore von Escherich are:

(1) The smaller or younger the organism, the greater the intensity of the metabolic processes calculated for the body measurements. This continually diminishes throughout the entire course of life.

(2) The functional development of each individual organ, measured by the absolute degree of ability for work takes during childhood a rising course, different for each organ.

(3) The growth of individual organs occurs not simultaneously but with varying intensity, by leaps. The order is influenced by the greater or less importance of the developing organs for the preservation or protection of infantile life.

As a most valuable auxiliary measure, capable of modifying many acute conditions to a marked and emphatic degree, and protracted diseases even more so, let me mention manual treatment directed to the regulation of the vasomotor action. In a former paper (*British Journal of Children's Diseases,* January, 1905) I have given an outline of the part which the vasomotor nerves play in regulation of the viscera, etc., and how these may be controlled by alternating or continued pressure, inducing reflex constriction or dilation in the blood vessels supplying the viscera, exerted on the erector spinae muscles which are supplied by the posterior primary divisions of the spinal cord. The subject has been fully systematized by John P. Arnold (*Medical News,* March 18, 1905). A long and careful series of clinical observations have convinced me that this apparently simple auxiliary measure, used with a fair working knowledge of the distribution of the vasomotor mechanisms, is forceful in accomplishing results which are often beyond the reach of drugs and various rational so called "physiological" therapeutics. In this way I am able to get results far beyond my earlier expectations and, as I acquire skill and experience, my confidence is increased in my ability to modify most acute conditions and particularly hastening resolution, repair, functional balance in subacute and chronic states.

The time occupied by this manipulation of the tissues of the back is seldom more than a few minutes and in acute conditions should be done once or twice daily; in others a little longer and more generally applied, and from three to four times a week will suffice. As an example of what can be

thus accomplished I make the assertion with confidence that I have apparently cured over a dozen cases of bronchial asthma in children who had suffered since babyhood or early childhood. Many persistent digestive, pulmonary, and blood derangements have yielded surprisingly to the measure in my hands when all the ordinary methods had accomplished little or nothing.

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DIFFERENTIAL DIAGNOSIS AND CLINICAL SIGNIFICANCE OF PERITONITIS.

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The predisposing cause of peritonitis is congestion. This may represent the reactionary vascular phenomena incident to inflammatory lesions located within the structures covered by peritonæum, to swellings, new growths, and abnormal distention of abdominal organs, to constriction or strangulation of gut, omentum, ovarian cysts and other structures, or it may result from external violence. The exciting cause of true inflammation is bacterial infection. This is most commonly the result of extension from the gastrointestinal tract and its accesory structures, including the vermiform appendix, biliary and pancreatic passages; and in women the pelvic organs of generation. It may arise from the liver, pancreas, spleen, omentum, urinary apparatus, lymphatic glands, and exceptionally from the structures entering into the formation of the abdominal wall. The organisms may occasionally pass through the diaphragm from the pleural and more rarely the pericardial cavities; and very rarely are deposited by the blood as emboli from remote sources.

Symptoms. The local phenomena incident to peritoneal irritation and the constitutional signs of toxæmia, to which are added in grave cases the vital depression of true shock, constitute a symptom complex which in most cases of peritoneal inflammation is distinctive.

Pain, a direct manifestation of nerve irritation, is generally of sudden onset and burning or stabbing in character. In the earliest stages, it is vaguely referred to the whole abdomen or to the region of the solar plexus about the umbilicus; soon becoming localized and persistent, at a point corresponding with the source of irritation; and often being additionally referred to some region in relation to such source through its peripheral and central nerve supply. It, like all abdominal pains, may vary in intensity from a scarcely noticeable discomfort, perhaps so trivial as not to elicit complaint, through all degrees to an excruciating, harassing agony, shocking in intensity. It is generally persistent, though exacerbations and remissions are common. It is diminished in intensity by shock, occasionally obscured by collapse, and in rare cases may be entirely absent.

Tenderness may always be elicited at the seat of inflammation. In mild grades of strictly localized, deep seated disease, it may be slight and necessitate deep abdominal pressure, or in case of pelvic location, vaginal or rectal palpation for its demonstration. In acute virulent infection it is marked; and when extensive, is manifested by such jarring acts as suddenly turning in bed, abdominal percussion, deep breathing, vomiting, coughing, sneezing, and other sudden movements. In severe cases, urination and defæcation are painful and retention of urine may occur. Cutaneous sensibility is generally hyperacute. Rarely the weight of bed clothes and local applications are intolerable.

Reflex fixation of the muscles in relation to the focus of inflammation is always present except when paralyzed by collapse. This may be noted in all degrees from the localized rigidity incident to contraction of a group of fibres of the external oblique or a single belly of the rectus, in cases of small localized foci, to marked spasticity with boardlike rigidity and immobility of the whole abdominal wall. There may be diaphragmatic immobility with consequent shallow thoracic breathing, and iliopsoas contraction with thigh flexion; all of which represent an involuntary splinting of the inflamed tissue. In such cases, the fixed dorsal decubitus is involuntarily assumed, and slight elevation of the shoulders is grateful in diminishing tension of the abdominal wall.

The same fixation occurs in the involuntary muscle of the structure, primarily or additionally involved in the inflammatory process. Feeble intestinal peristalsis is the rule in true peritonitis of any origin. This in mild localized inflammation may be distinctly limited to a small area of gut at the seat of inflammation noted only upon careful auscultation. Depending upon the severity of the disease, all degrees of intestinal paresis are noted, including, in grave cases, the absolute paralysis of dynamic intestinal obstruction. With plastic exudate formation, a friction sound may occasionally be heard. Constipation and intestinal tympany are incident to, and in severity dependent upon, the degree of intestinal paresis. A localized abscess is shown by dullness to percussion and in some cases fluctuation. Free pus yields the signs of fluid within the cavity. The signs of pneumoperitonæum will be enumerated presently.

Vomiting is characteristic. In the earliest stages it is due to sympathetic nerve irritation; later, intestinal paresis and the irritating products of fermentation are important causative factors. It is easily provoked and generally regurgitant in type, occurring with little or no effort on the part of the fixed diaphragm and abdominal wall, and like every movement of intraabdominal organs, is accompanied by pain. The regurgitated material consists at first of imperfectly digested food material, later of bile and secretory products of the stomach and duodenum, and finally when the stage of complete dynamic obstruction is reached, stercoraceous material may be gently ejected.

The pulse of peritoneal irritation early becomes hurried, quickened, small, and tight (the wiry pulse). With the onset of toxæmia it is enfeebled and still more accelerated, and upon the development of shock assumes a running rate, soft, feeble, irregular or intermittent type, finally becoming imperceptible at the wrist.

Fever generally ensues. It is entirely the result of septic absorption, usually quite marked, and may be preceded by rigor. Such fever is progressive, at least until the inflammatory products are well walled off, or until the development of collapse. The occurrence of shock causes at least a temporary, it may be trivial, drop in temperature. This may be followed, except in cases of profound collapse, by a

rise. When the disease is not rapidly fatal nor speedily controlled, profound prostration, irregularly recurrent paroxysms of chills, fever and sweats, a dry, coated, fissured tongue and other signs of septicæmia ensue, leading to fatal termination. In many cases fever may never develop. It is often absent in cases of slowly developing, mildly virulent infection, well walled off by dense adhesions, and in fulminating peritonitis death may occur before fever develops.

Leucocytosis is generally present and progressive. In cases of peritonitis, complicating typhoid fever, tuberculosis and other affections associated with a subnormal leucocyte count, a rise even to normal is significant. The diagnostic value of leucocytosis must be based on the relative increase, and multiple, often hourly estimates may be demanded. Progressive or marked leucocytosis is of distinct diagnostic value. As a negative sign it should have little weight. Exceptionally it is entirely absent. A positive iodophilia when demonstrated by one skilled in the technics of staining blood specimens may be of diagnostic value. A cessation of leucocytic increase, and especially a gradual reduction in their number, generally indicates successful walling off or resolution of the inflammatory process. A sudden and marked reduction often indicates collapse.

The anxious, distorted, pinched faces of peritonitis patients are classical. Mentality and the special senses are often hyperacute till toward the end, when, from toxæmia and collapse, mild delirium with or without stupor develops. Excessive indicanuria is common in the latter stages, but as a diagnostic sign is of little value.

Diffuse fulminating peritonitis. This affection has for its cause the sudden institution, rapid diffusion and overwhelming influence of a violent, virulent, pyogenic infection. It is typified by the form arising generally from rupture, perforation, or gangrene of some internal structure.

It may result from any cause of peritonitis, especially when in the presence of the exciting agent such conditions exist as active peristalsis, bloody or serous exudation, and other factors favoring the diffusion and multiplication of organisms, and if by reason of local injury, preexisting peritoneal disease, or systemic weakness, there is feeble resisting power to diffuse bacterial invasion.

Symptoms. These in most cases are incident to a combination of violent, diffuse peritoneal irritation, reflex shock and profound septicæmia. In many cases, coincident hæmorrhage and the phenomena of preexisting disease are factors.

The earliest symptoms are the irritative phenomena, pain, tenderness, rigid, spasmodic, abdominal, and diaphragmatic immobility, absent peristalsis with absolute constipation and general tympany, persistent, easy, regurgitant vomiting, and rapid, running, wiry pulse. The onset of shock may obscure the pain and tenderness, still more accelerate and enfeeble the pulse, and rarely counteract the development of fever. Extreme collapse and prolonged, excessive nerve irritation may produce final paralysis of sensation and muscular contraction, with disappearance of pain, tenderness and spasmodic rigidity. The vomiting, constipation, tympany, and distention rigidity generally persist and are progressive in intensity. In many cases of puerperal peritonitis and of pneumococcic infection in children, constipation may be replaced by exhausting septic diarrhœa. Leucocytosis, except in the earliest stages, is of no diagnostic value. Before the onset of collapse the leucocytes are increased. Fever may or may not occur. There is no tendency to the formation of adhesions.

Signs of free fluid (pus) in the peritoneal cavity may be noted within from twelve to twenty-four hours. The immediate development of such signs points to hæmorrhage or to rupture of a cystic tumor. When the cause of peritonitis is rupture of a gas containing viscus, or infection by a gas producing organism *(Bacillus aerogenes capsulatus)*, or if an excessive amount of air has entered the cavity from without (rare) the signs of pneumoperitonæum may be elicited.

The well known signs of free fluid in the peritoneal cavity, dulness in the dependent portion of the abdomen with superincumbent tympany, fluctuation wave and succussion splash are not demonstrable in cases of small exudations. Even with large quantities of free pus, the changes in location of dulness and tympany with changes of position in the patient are slow to occur. Large quantities of fluid fæces in the colon may give this sign. In women, fluctuation may be detected in Douglas's cul-de-sac. In the semisitting posture this is easily demonstrated, and if upon elevating the hips and lowering the shoulders it is caused to disappear, the fluid may be said to be movable. Even this sign is not positively conclusive of free fluid in the general peritoneal cavity.

Free gas certainly in such quanties as result from positive gastrointestinal perforation, or from infection with bacillus aerogenes capsulatus, is shown by entire obliteration of splenic and of anterior liver dulness. With the patient in the dorsal posture, dulness in the lateral and posterior regions may persist on account of fluid effusion. When lying well on the left side a clear note may be elicited over the lateral hepatic region. These phenomena distinguish pneumoperitonæum from intestinal distention. Small quantities of gas, incident to leakage through minute perforations, may escape detection by these signs. In every case of pneumoperitonæum there is rapid pus formation.

The gravest form of fulminating peritonitis is incident to the simultaneous discharge of both septic material and blood into the peritoneal cavity. Such a catastrophe may be due to perforation of gastric or intestinal ulcers, rupture of the gallbladder, or an infected Falloppian tube, uterus, urinary bladder (intraperitoneal), or kidney (intraperitoneal).

In rupture of the stomach, bowel, urinary organs, uterus or tubes, the intraperitoneal hæmorrhage is often attended by a discharge of blood externally as hæmatemesis, melæna, hæmaturia, or metrorrhagia. Such is not always true and the absence of external bleeding is of little diagnostic value. Absolute constipation may obscure intestinal hæmorrhage. Ureteral blocking and urinary suppression prevent hæmaturia, and an empty bladder or urinary retention may cause this symptom to be overlooked. Metrorrhagia when present may be of diagnostic worth, but in many grave cases of rupture, even of the pregnant uterus, this sign may be altogether wanting.

Chronic peritonitis. This is characterized by the

recurrence at irregular intervals of the symptoms of peritonitis in one suffering with chronic dyspeptic symptoms. Such inflammation is generally localized, though at any time may become diffuse. Mechanical intestinal obstruction incident to constriction may arise in cases with adhesion formation. Tuberculosis, carcinoma, actinomycosis, and serositis, involving the peritonæum, all present the clinical signs of a low grade chronic diffuse peritonitis attended by serous exudation and adhesion formation.

The local signs, as compared with those of acute pyogenic inflammation, are mild and generally insidious. Pain, tenderness, and rigidity are never so severe; sudden shock is exceedingly rare, though the collapse of cachexia may supervene. Absolute intestinal paralysis does not occur. On account of the slowness of the process, hypertrophy of the muscular coat of the bowel is common. Constipation frequently alternates with diarrhœa. Septic fever and marked leucocytosis are absent, though a moderate exaltation of temperature and trivial, nonprogressive leucocytosis may be noted. Actinomycosis and serositis are extremely rare.

In all chronic inflammations a primary focus of tuberculosis and cancer should be sought. In tuberculous disease this is most commonly found in the intestines, female genitalia, or the lungs. Carcinoma of the peritonæum may be secondary to that of any intraabdominal organ; colloid cancer is often primary in the omentum. Peritoneal actinomycosis, in the absence of demonstrable lesions of this type elsewhere, cannot be positively recognized before operation. In the presence of such a focus, the insidious development of chronic peritonitis with adhesions and ascites in a nontuberculous, noncancerous subject, would justify a cœliotomy. The coincident existence of chronic serous exudation into the peritoneal pleural and pericardial cavities is suggestive of the rare nonsurgical affection, multiple serositis.

Tuberculous peritonitis is often manifested as an acute infection, incident or secondary to tuberculous ulceration of the intestines or it may be a part of general miliary tuberculosis. When of enteric origin, the signs of intestinal tuberculosis are primary, and the peritoneal inflammation is apt to be due to mixed infection, in which case the signs and therapeutical indications are those of true pyogenic inflammation, either perforative or reactionary in type. When peritoneal involvement is only a part of general miliary tuberculosis, the local symptoms are comparatively mild to those of pyogenic peritonitis, and while fever and systemic prostration may be marked, leucocytosis is absent.

Diagnosis of peritonitis. This may be based on the associated phenomena of pain, tenderness, muscular rigidity, constipation, vomiting, and as a rule circulatory and temperature disturbances. The mildest degrees of these must be recognized.

In addition to the signs of peritonitis, there may frequently be elicited from the history and examination, a causative lesion.

Peritonitis must be differentiated from many other affections in which abdominal pain is a conspicuous symptom. In the enumeration of such a heterogeneous collection of affections an arrangement in groups according to the anatomical location of the causative lesions should be adopted. Signs referrable to functional disturbance in the structure involved are generally conspicuous in the symptom complex. Gastric disturbance is of little localizing value, though easy, regurgitant vomiting signifies abdominal or diaphragmatic immobility, and when due to intraabdominal disease is associated with thoracic breathing.

Pain and tenderness, though generally most marked in the region of the structure involved, are not invariably so. They may be additionally or entirely referred. The pain of the various forms of spasmodic colic is often alleviated by deep pressure. Inflammation is accompanied by tenderness.

Muscular rigidity may be entirely voluntary. In such cases it is usually general, though it may be confined to one side. Distention rigidity is always due to intraabdominal swelling and except in cases of new growths, abscess formation, or the localized gut distention incident to certain varieties of intestinal obstruction, is always due to intestinal tympany or to pneumoperitonæum. True reflex rigidity, if continuous and fixed, signifies nerve irritation, incident either to inflammation of underlying structures or pressure on nerve roots. It is most marked over the region supplied by the nerves at the source of irritation, though it may be referred in severe cases to parts related through nerve supply. The transient spasmodic muscular contraction caused by sudden palpation with the finger tip or cold hands may be overcome by gentle, steady, broad pressure with the hands warm.

Constipation. The mild degrees of this symptom may be entirely normal or incident to atony of the bowel. Absence from the intestine of the normal stimulating substances to peristalsis, particularly the bile in obstructive biliary lesions, is a common cause of constipation, and this symptom is conspicuous in uræmia and diabetes. Hypochondriacs and individuals suffering chronic gastric diseases are habitually constipated. Painful defæcation incident to such lesions as hæmorrhoids, fissure, fistula, rectal and peritoneal inflammation, prostatitis, and seminal vesiculitis are commonly attended by inhibitory constipation. The obstinate constipation incident to certain systemic diseases, particularly those with gastrointestinal lesions, must not be overlooked when determining the existence of intraabdominal complications. In many cases of typhoid fever this symptom is prominent though it is generally easily overcome and diarrhœa is apt to follow the administration of purges. Intestinal reflex rigidity, muscular paresis, and mechanical obstruction are causes of absolute constipation, often even to flatus.

Positive intestinal rigidity may be caused by plumbism and the rare strychnine tetanus. Spinal nerve irritation is accompanied by slighter degrees of spasticity, and the constipation of meningitis is marked. The extreme irritability incident to such intense pain as renal, biliary, ovarian, testicular, spasmodic intestinal colic, and visceral crises, may be accompanied by transient intestinal spasm, which upon subsidence of the pain may be followed by relaxation and a copious evacuation, sometimes diarrhœa. The intestinal rigidity of peritonitis and basal thoracic lesions has been discussed; it is commensurate in intensity with that of the inflammatory process and with the rigidity of the abdominal wall. The resulting constipation may in mild cases be

easily overcome but there is no tendency to diarrhœa. In certain cases of pneumococcic peritonitis in children and in severe puerperal peritonitis, exhausting diarrhœa may be noted toward the end (Nothnagel) due to toxæmia and collapse.

Intestinal paresis may represent a part of the general muscular paralysis incident to profound shock of any origin. It is the pathological basis of dynamic intestinal obstruction and may be caused by basal pulmonary lesions, spinal paralysis, and excessive distention; though except in cases of complete mechanical obstruction, the latter is rarely the cause. The constipation incident either to intestinal rigidity or paresis is attended by enfeeblement or absence of peristalsis. When the cause is mechanical obstruction, peristaltic motion above the point of obstruction is exaggerated. The gurgling of quantities of fluid must not be mistaken for true peristaltic sounds.

Abdominal tympany is due either to gastrointestinal distention or to pneumoperitonæum, and is always a secondary sign. Excessive distention of the stomach and bowels is caused by muscular paresis, excessive fermentation, and mechanical obstruction. Combined causes are common.

When associated with constipation, this and tympany are a common cause, as stated. Excessive fermentation may be secondary to either paresis or obstruction. When of this origin it is generally associated with diarrhœa and exaggerated peristalsis. Gastritis, enteritis, and colitis are common causes. These may be due to typhoid fever, tuberculosis, influenza, cholera morbus, dysentery, measles, gout, purpura, intestinal parasites, nonoccluding foreign bodies, polypi and strictures and the diffuse purpuric enteritis accompanying certain erythematous skin lesions. The tympany of rickets may be referable to muscular atony or to fermentation with catarrhal enteritis.

The enormous distention incident to intestinal obstruction is generally associated with obstinate constipation, though even with such a cause a false diarrhœa may occur from localized enteritis at the seat of obstruction or stercoraceous ulceration below. Peristalsis above the obstruction is greatly exaggerated until distention paralysis ensues.

Abdominal retraction, due to muscular spasticity, may occasionally be noted in the earliest stages of peritonitis. It is characteristic of lead colic and meningitis; and may result when the excessive watery diarrhœa incident to cholera morbus, ptomaine poisoning, diffuse toxic gastroenteritis, tuberculosis, and rarely typhoid enteritis, prevents gas accumulation. In rare cases of septic diarrhœa of peritoneal origin the tympany may be considerably reduced.

Diarrhœa. Aside from the causes of this symptom mentioned as due to fermentation, inflammation, excessive peristalsis, and secretion, it is often noted as a part of the visceral crises of tabes and of gout. In these, diarrhœa like the pain is paroxysmal. Other causes include irritative ingested material, nonoccluding foreign bodies and growths in the canal, amyloid disease, the nervous diarrhœa incident to such mental states as fear, anxiety, emotion, etc., acute atrophy of the liver, uræmia (toxic), and individual idiosyncrasy to certain foods. The diarrhœa incident to cathartic drugs must not be overlooked. Diarrhœa due to constipation is common and results from the irritation of impacted fæces; in some cases stercoraceous ulcers may be formed. The diarrhœa noted in some cases of septic peritonitis particularly of puerperal origin is a late symptom due to collapse and toxæmia.

Pseudoperitonitis. The pseudoperitonitis incident to lesions involving the pleuræ, lungs, pericardium, spinal cord, spinal column, and spinal nerves may be manifested by agonizing pain, marked rigidity, intestinal tympany, constipation, and to a less degree even by abdominal tenderness, though this is rarely commensurate in severity with the pain and is less definitely localized than in true peritonitis. In none of these is the source of irritation peripherally localized or of splanchnic origin. The signs are all referred.

With pleuritis, pneumonia, and pericarditis the signs are generally more marked in the upper abdomen though they may be referred to the region of the appendix. The same fixation of the diaphragm may be noticed but in contrast to peritonitis, the breathing is abdominal rather than thoracic in type. In pulmonary and pleural affections the respiratory rate is exaggerated and there is cyanosis. In every case in which signs resembling peritonitis are present, careful examination of the thoracic viscera is imperative.

The abdominal pain, rigidity, tympany, constipation, and sometimes anterior abdominal tenderness, resulting from such irritative lesions as vertebral caries, cancer of the spinal column, perinephric abscess, abdominal and lower thoracic aneurysm, and lumboabdominal neuritis, constitute also a symptom complex resembling to superficial observation peritonitis. The signs are all referred. Real deep seated localized anterior tenderness, except in cases of abdominal aneurysm and perinephritic abscess, is generally lacking. Superficial tenderness due to lumboabdominal neuritis incident to pressure on the spinal nerve roots may in all such affections be marked. The signs of the causative lesion should be sought.

The diffuse radiating pain over the lower abdomen, noted so frequently with acute inflammatory affections of the epididymis, testicle, prostate, and spermatic cord, may be accompanied by slight rigidity and tenderness, particularly along the cord (vasitis). While vomiting may be marked and constipation conspicuous, the former is never without effort and the latter easily overcome. In seminal vesiculitis, true peritonitis may ensue, since this structure is in direct relation with the peritonæum. The serous covering of the testicle, being isolated from the true peritoneal cavity, inflammation of this structure is not productive of true peritonitis, though as in case of pleural and pulmonary disease a symptom complex of the false variety may be presented. Epididymitis, orchitis, and funiculitis have been repeatedly mistaken for strangulated hernia and seminal vesiculitis for appendicitis.

Hysterical pseudoperitonitis may present all the signs of grave inflammation including in rare instances fæcal vomiting after eating. In such cases, fever and leucocytosis are absent, the vomiting is not of the regurgitant type and constipation is never absolute. The symptoms being willful in origin are lacking in proper association and relationship to each other, and often greatly influenced by suggestion. Scrupulous observation when the patient is

left alone, or her mind diverted, and especially during sleep, will generally exclude real inflammation. Other manifestations of the hysterical state should be noted.

Feigned pseudoperitonitis is occasionally observed in certain individuals who desire appendectomy or salpingectomy performed, and a few women seek abdominal section in the hope that abortion may result.

True spasmodic reflex rigidity of the abdominal muscles must not be confounded with the tense, stretched abdominal wall, incident to extreme distention. With reflex rigidity the transverse lines between the bellies of the recti can be readily noted as grooves; when simply distended the contour of the abdominal wall is smooth and resistence to palpation less marked. Rigidity of double origin is common.

Peritonitis must be distinguished from inflammation of the abdominal wall, lumboabdominal neuritis, neuralgia and rheumatism; from affections located behind and below the peritonæum; from lesions located within the structures covered by this membrane but not involving the peritonæum; and from certain extraabdominal causes of abdominal pain.

Affections characterized by obvious tumor formation will be studied in a subsequent contribution.

Inflammation of the abdominal wall, except when subaponeurotic in location, is characterized by obvious local phenomena of inflammation such as heat, pain, tenderness, redness, swelling, œdema, and, in cases of pus formation, fluctuation. When located beneath the aponeurosis these signs may be difficult of recognition.

In neuritis and neuralgia of the abdominal wall, cutaneous hyperæsthesia is marked. With rheumatic neuralgia the muscles are painful, tender and rigid. The disease is never circumscribed to a small area of a single muscle and generally involves the whole of at least one side of the abdominal wall. The muscular tenderness is relieved by warm, broad pressure, and signs of muscular rheumatism elsewhere may be elicited. All the signs of these affections are of superficial location. While the abdominal wall is rigid, there is less positive respiratory fixation than in peritonitis, and the diaphragm escapes involvement except in rare cases of rheumatism of this structure. Vomiting and constipation are not a part of the symptoms, though they may be accidental. Bowel movements may be inhibited. Peristalsis is unaffected. Meteorism does not occur.

The signs incident to retroperitoneal and infraperitoneal disease must be distinguished. The pain and tenderness of perinephric inflammation is localized to the region of these structures, and generally more marked posteriorly than in front. It may be referred to the lower abdomen, and along the course of the ureter to the bladder, as in renal colic, though paroxysms of the latter are not characteristic. There is muscular rigidity confined to the side of the disease and most marked over the kidney. Often œdema is noted when the process is well advanced. Psoas contraction with thigh flexion is common and when abscesses form, this muscle may become involved in the process. Constipation is never absolute; peristalsis when at all enfeebled is only so to a trivial degree. Meteorism is never excessive. Vomiting is not of the easy peritonitic type and never fæcal. Diaphragmatic mobility is diminished, but unless the inflammation actually involves the under surface of this muscle, it is never paralyzed. There is septic fever. The urine may or may not show pus and casts.

Perinephritic abscess must be differentiated from spinal caries. The history may be of value. Spinal disease is generally more chronic in its course, movements, such as stooping and bending, are more positively diminished, jarring the spine is more excruciatingly painful and finally kyphosis and symptoms of cord involvement appear. The skiagraph may show bony erosion.

Aneurysm of the abdominal aorta simulates and indeed causes vertebral caries. The pulsating expansile tumor, bruit, and thrill are of importance in the diagnosis.

Carcinoma of the spinal column is rare, occurs in older persons than does tuberculous disease, and is practically always metastatic in origin. The insidious onset of spinal caries in one affected with cancer of some other organ, is sufficient basis for a tentative diagnosis. Rarely a nonexpansile tumor may be felt.

Spondylitis deformans (osteoarthritis of the spine) is characterized by diffuse kyphosis, intercostal and abdominal neuralgia, thoracic deformity, and early ankylosis. It occurs in patients past middle life and affected with rheumatoid arthritis in other joints.

The abdominal symptoms incident to postperitoneal lesions involving the spinal nerve roots are those of pseudoperitonitis.

The diagnostic features of nonperitoneal affections of the gastrointestinal, urinary, biliary, and genital tracts will be discussed in a subsequent contribution.

Fulminating peritonitis must be differentiated from acute pancreatitis, intestinal obstruction, rupture of an ovarian cyst, or torsion of its pedicle, torsion of the spermatic cord, rupture of an ectopic gestation sac, severe injuries of the kidney, bladder, liver, and spleen without rupture, the preperforative localized peritonitis incident to deep gastric and intestinal ulceration (especially when attended by hæmorrhage), and the localized peritonitis incident to gangrene of the appendix, gut, omentum, gallbladder, or the female pelvic organs when unattended by rupture.

Subdiaphragmatic Abscess. This term is restricted to designate collections of pus arising from intraperitoneal sources and does not include the retroperitoneal inflammation of extraperitoneal origin.

Its most common cause is perforation of the posterior wall of the stomach or duodenum by an ulcer. Other causes are abscess of the liver, appendicitis, splenitis, pancreatitis, and abscess, externally but rarely in the pleura.

The cardinal symptoms are those of localized peritoneal abscess formation associated with marked respiratory disturbance. On account of its subcostal location a tumor can only exceptionally be discovered. The belly and particularly the hypochondrium is rigid, tender, and distended. The costal arch is markedly tense and instinctively immobile. Hiccough may occur but is in no way characteristic. Constitutional signs of hectic fever are severe. The diaphragm is pushed upward and the spleen or liver

(depending on the location of the abscess) is in rare cases depressed. Since the great majority of subdiaphragmatic abscesses result from gastrointestinal perforation, they, as a rule, contain gas. Amphoric sounds may be elicited by auscultation and percussion.

Diagnosis. This can be distinguished only with great difficulty from pyopneumothorax.

The initial symptoms, pulmonary in one, abdominal in the other, are of the greatest diagnostic importance. Amphoric resonance and breath sounds are elicited over both the abdomen and thorax in subphrenic disease, while in pneumothorax they are confined to the region of the lungs and pleura. Upon exploratory puncture by means of a trocar or canula about the eighth interspace in the midaxillary line, spurting occurs with inspiratory downward movement of the diaphragm in the subphrenic lesion, and with expiratory upward movement of the diaphragm in the pyopneumothorax (Pfuhl's sign). Gastric or intestinal contents in the pus may be recognized by the appearance and odor.

No other intraabdominal affection will give the signs of a localized collection of air and pus in this region.

506 East Grace Street.

A NEW FORM OF INTESTINAL OBSTRUCTION. THE METHODS FOR PREVENTING A RECURRENCE OF VOLVULUS OF THE SIGMOID FLEXURE.*

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It is not my aim to discuss in this short communication the various clinical and operative aspects of volvulus of the sigmoid flexure; I shall merely confine my remarks to one incidental step in the operative treatment, namely, that of the prevention of its recurrence. It is a well known fact, that every patient who has once had a volvulus is liable to a recurrence of this accident, unless special precautions are taken to prevent it. After a very superficial search of the literature I have found fifteen cases of recurrence, viz., Philippowitz (1) five cases, Roser (2) one case, Roux (3) two cases, von Eiselsberg (4) one case, Obalinski (5) four cases, Eliot (6) one case, and Kuhn (7) one case; two of these (Eliot's and one of Roux's cases) recurring twice. In addition there are a large number of cases on record, for which there is strong presumptive evidence, that repeated attacks of volvulus must have preceded the one, for which operation was finally done. As these cases were found in the course of only a limited search, I believe I am safe in assuming that these recurrences are not very uncommon.

The methods suggested and carried out in order to prevent such recurrences are quite numerous, which of itself is sufficient testimony, that the ideal method has not yet been devised. They are the following:

1. Sigmoidopexy, that is, the anchoring of the sigmoid flexure to the anterior abdominal wall, by a row of catgut or silk sutures.

2. Obalinski's (5) method of resection of the entire sigmoid flexure, with end to end union.

3. Senn's (8) method of reefing the mesosigmoid.

4. Roux's (3) method of anchoring the sigmoid flexure to the anterior and lateral abdominal wall by sutures passed through its mesentery.

5. Riedel's (9) method of dissecting out and removing all the cicatricial bands and deposits, which are usually found in the mesosigmoideum in cases of volvulus.

6. Philippówitz's (1) method of anastomosing the cæcum with the efferent limb of the sigmoid flexure.

I shall exclude for the present from the discussion all cases of gangrenous volvulus, for which resection, either primary or secondary, must be done; and shall confine my remarks wholly to those cases in which we find, after untwisting the volvulus, perfectly viable gut, and in which the question arises, what had best be done, in order to prevent a recurrence. Every surgeon who has had occasion to operate a number of cases has no doubt preference for one or the other of the various methods mentioned; on the first surgical division of Mount Sinai Hospital, where I have had occasion to operate five cases during the past four years, sigmoidopexy has been done in the cases indicated. This operation we have performed with satisfactory results, with the exception of one case, which forms the basis of this communication, and which I will now report.

Case.—S. S., forty-one years of age, a native of Russia, and a furrier by occupation, was admitted to Mount Sinai Hospital on January 18, 1905. The family history was negative. The past history is of interest, in that we find therein sufficient evidence, that previous twistings of the gut had occurred, which were spontaneously relieved. We find that nine years ago patient suffered from a severe attack of constipation, with pain and distention of the abdomen, which lasted several days, and was finally relieved by enemata and cathartics. Five months later there was another similar severe attack; as a matter of fact, during the past nine years patient has had similar attacks at intervals of two or three months.

His present attack is of four days' duration, and began, like its predecessors, with cramp like pains in the abdomen, distention, and absolute constipation, neither fæcal matter nor gas escaping. Two days ago patient began to hiccough and to vomit, the latter becoming fæcal, about twenty-four hours prior to his admission to the hospital.

The abdomen was enormously distended and as tense as a drum, giving a tympanitic resonance in all parts. The distention was so great that the anteroposterior diameter exceeded by far the lateral. The epigastric and right hypochondriac regions were occupied by an enormous, semilunar, smooth, rounded, tense, and tympanitic mass, below which coils of distended gut were seen in peristaltic motion. The surface of the abdomen was not uniformly smooth and rounded, but presented the irregularities before mentioned. There was no particular point of tenderness, and there was no marked rigidity of the muscles.

An enema was given to the patient, but the capacity of the rectum was only about six ounces, and the injected water returned clear, neither fæcal matter nor

* Read at a meeting of the Surgical Section of the New York Academy of Medicine, March 2, 1906.

gas having been passed. The diagnosis of volvulus was made and immediate operation proceeded with.

A median incision was made about six inches long, beginning about two inches above the symphysis. On opening the peritonæum a small amount of bloody serum escaped, and enormously distended coils of intestine presented in the wound. The general direction of this gut was diagonal, passing from the left iliac fossa upwards and to the right, terminating in the region of the liver by an archlike formation. When released the distended bowel presented a remarkable appearance; it was at least three feet in length, and at least six inches in diameter; deeply injected, and of a deep red, almost purple color; it required great care in handling, as danger of its rupturing seemed imminent. It was found that the bowel was twisted around an arc of 360 degrees; after untwisting it, it was seen to be perfectly viable. A rectal tube was passed, and a large amount of fluid fæces and gas was evacuated; the distention was thus considerably relieved, and there was in consequence no unusual obstacle to its replacement. The bowel was now stitched to the left half of the anterior abdominal wall by a number of interrupted silk sutures to the extent of about two and one half inches. On account of the collapsed condition of the patient, the abdominal incision was rapidly closed by through and through silk sutures. Duration of operation, thirty minutes.

At the end of three weeks, after a convalescence interrupted only by a number of minor incidents, the patient was ready to be discharged. On February 11th, twenty-four days after operation, the abdomen was again slightly distended, and patient complained of some general pain and tenderness on deep palpation; the pulse while only between 70 and 80, was decidedly weaker, and required stimulation. On the following day, February 12th, his general condition improved somewhat, though his pulse continued to be weak. A high enema was effectual, but it failed to relieve the distention, which on the contrary began to increase. On February 13th the symptoms of intestinal obstruction had become more pronounced; the abdomen was very much distended, neither gas nor fæces having been passed on this day. There has been occasional vomiting; the vomitus was of a dark brown color, and had a foul, but not fæcal, odor.

An exploratory operation was decided upon, and performed on this day, by Dr. A. G. Gerster. The abdomen was opened by incising through the cicatrix of the first operation. On opening the peritonæum a small amount of bloody serum escaped, and greatly distended coils of small intestine presented. These were drawn aside, as much as possible, and the sigmoid was found adherent to the anterior abdominal wall, where it was sutured at the former operation. The coils of distended small intestine were traced to the outer (left) side of the sutured sigmoid, and were apparently incarcerated in a pocket between it and the lateral abdominal wall. The sigmoid was therefore freed from the anterior abdominal wall, exposing a number of coils of small intestine, which were adherent in the space before mentioned. These adhesions were liberated, and the intestines replaced into their normal position. By this time the condition of the patient was very poor, requiring very active stimulation; the abdomen was in consequence closed, with through and through silk sutures. Patient reacted after the operation, but never regained full consciousness, and died two hours after the completion of the operation.

Both the local and the general condition of the patient at the time of the operation did not allow an exact determination as to whether the intestines were kinked over the attached sigmoid flexure, or whether they had become strangulated in the pocket formed by the adherent loop of the sigmoid and abdominal wall. Nor for that matter was this question one of importance, as after all, the real underlying condition is the same in both, namely, the attachment of the sigmoid flexure to the anterior abdominal wall.

The occurrence of the accident described gave me an impetus to look up whatever literature may apertain to the subject. I have not been able to find a single case recorded, neither in the literature of volvulus, nor that of ileus, nor in that of sigmoidopexy for prolapse of the rectum. That in theory this operation has caused misgivings in the minds of some authors, is shown by an allusion to it in Philippowitz's (1) article on intestinal obstruction. In describing the operation in Case XCVI, he says: "In order to prevent a recurrence, the sigmoid flexure was sutured with a few interrupted sutures to the left abdominal wall, and the precaution was observed to place the flexure as far as possible outwards and posteriorly, in order to obviate a possible slipping in of a loop of the small intestine between the flexure and abdominal wall." Ries (10) speaks in a similar tone of the Roux operation, in which the sigmoid is anchored to the abdominal wall by sutures passing through the sigmoid mesocolon. He says: "It is necessary to place the sutures so that no artificial deep recess behind the sigmoid is formed, which might give rise to an internal strangulation." Von Eiselsberg also says that it would be reasonable to think that another strangulation might occur around the adhesions formed.

It makes no difference how far to the left we go with our suture, as a sæptum is bound to be created, which will divide the abdominal cavity into two halves, into which, no matter be the entrance to it small or large, one or more loops of the small intestine may slip and become strangulated. The occurrence of this accident in our case at all events goes to prove that sigmoidopexy is not an ideal method.

Before dismissing the subject of sigmoidopexy, it will perhaps not be amiss to call attention to the fact that its capacity to prevent a recurrence of the volvulus is only speculative and by no means proved. Granted even the correctness of the physical problem that an organ fixed at more than one point is less liable to torsion, than one fixed at one point only; it is by no means excluded that multiple fixation will absolutely prevent a subsequent torsion; Roux (3) reports a case where recurrence took place after his operation, although he confesses that he did not make his line of attachment long enough. Von Eiselsberg has also expressed himself in a similar strain.

If we now turn our attention to the other methods suggested, it appears to me that we are but very little better off, as far as the attainment of the ideal method is concerned.

1. Obalinski's method of resection is certainly curative and radical; it is absolutely indicated in all those forms of volvulus which have become gangrenous; still even in these there might be some discussion, whether it ought to be done as a primary or secondary measure. It appears to me that this question is to be decided only by

the general condition of the patient. The objection to the operation is its serious and extensive character, particularly when one considers the enormous size the sigmoid flexure attains in this condition.

2. Senn's method consists in reefing the mesosigmoid from its pelvic to its enteric attachment. Theoretically this ought to be the ideal operation for cases of volvulus, and while I have had no personal experience with it, there exist certain very weighty objections to it, namely, that there is grave danger of including some of the nutrient vessels of the sigmoid in the sutures, which might cause a necrosis. It is true that this can be avoided by taking in the suture only the peritoneal layer, but if this is done, there might arise the possibility of the sigmoid becoming constricted on its long axis; and if the reefing were done on both sides, in itself a lengthy operation, there is the additional danger of constricting the gut at its middle. Furthermore, a more important objection to this operation lies in the pathological anatomy of volvulus. Particularly during the past few years much testimony by Brehm (11), Philippowitz, Ries, and others has shown that in the greatest majority of volvuli the underlying condition is always a mesosigmoiditis, as a result of this the sigmoid mesocolon becomes thickened and infiltrated and becomes contracted in its longitudinal axis, so that the intestine has the appearance of a double barrelled gun; in such instances Senn's operation would be a physical impossibility.

3. Roux's operation is only a refinement of sigmoidopexy, inasmuch as the sigmoid flexure is fixed to the abdominal wall, but the sutures pass through the mesosigmoid; it has the same disadvantages as ordinary sigmoidopexy. It is true that a suture could be devised which would fix the sigmoid mesocolon and flexure to the posterior abdominal parietes, but in order to be effective the suture line would have to begin just at the point where the descending colon joins the sigmoid flexure, and each successive stitch would have to take in the mesocolon on one hand and the posterior or lateral parietal peritonæum on the other hand, after replacing the sigmoid flexure as far as possible to the left until the entire flexure is fixed. That this would be feasible with a normal flexure will be readily conceded, but that it would be practically impossible with an enormous volvulus must be conceded just as readily. It is also questionable whether much good would be gained by such a procedure, as presumably such an operation would interfere markedly with the motility of the sigmoid flexure.

4. Riedel's operation also attacks the mesosigmoid, and it aims at preventing a retorsion by removing all cicatricial bands and deposits, which are usually found in the mesosigmoid. The minor objections to the operation are the difficulty of its performance and its duration; the major objection is the erroneousness of the theory underlying it, because we may safely presume a reformation of the cicatricial tissue, perhaps even to a greater extent than before, thereby frustrating our attempts at a radical cure.

5. Philippowitz's method aims at preventing a recurrence of the volvulus by anastomosing the cæcum with the efferent limb of the sigmoid flexure. Philippowitz has done the operation successfully in a number of instances, but if carefully analyzed it will be seen that the operation is successful, not so much because of the cæcosigmoidostomy, but very probably because of the simple fixation of the sigmoid to the cæcum. In other words, the anastomosis is superfluous, and certainly is more dangerous than simple attachment. In addition, even simple attachment of the sigmoid to the cæcum has the same objection as that of sigmoidopexy, in that it may form the basis of an internal strangulation.

I have now exhausted a review of all the operative methods which have been suggested to prevent a recurrence of the volvulus; and it is seen that to all of them there are inherent certain objections. I regret that I am unable to offer a better substitute than the operations which I have enumerated. I merely wish to report an instance of internal strangulation, the occurrence of which, up to this time, has often been expected, but has not been described before. My deductions as regards the proper procedure have nevertheless not been materially altered; and despite the unfortunate incident in my last case I am still prepared to say that sigmoidopexy is the best possible procedure in order to prevent a recurrence of the volvulus. If the general condition of the patient and the local conditions are favorable, I would not hesitate to resect.

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925 Madison Avenue.

DEATH FROM SUPPURATING TONSIL.

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On May 7, 1906, the writer was called to see Mrs. N., married, thirty-three years old, no children, somewhat neurotic, with history of for many years recurring hay fever, but with no throat history whatever. She complained of a very sore throat, had a violent headache, and said that her throat had been sore for two days. She had a temperature of 102° F., pulse of 100, respirations normal.

Examination showed the left side of her throat to be very much swollen, so much so that the swollen tonsil with the soft palate, swollen to cover the tonsil, extended well out past the uvula. The whole mass was much congested, fluctuating, tender, and looked ready to burst.

There was considerable difficulty in getting the jaws far enough apart to use any instruments in the opening of the evident tonsillar abscess. With her consent I wrapped my forefinger with several thicknesses of a napkin and introduced the forefinger into the mouth and into the abscess, which opened as soon as touched. About two ounces of blood and pus of the foulest smell was discharged through nose and mouth. There was no œdema at this time, and she had no difficulty in swallowing except the distress caused by the muscular action. The throat was cleansed with spray of hydrogen peroxide and rinsed with alkaline solution.

After the evacuation of the pus, the temperature went down to normal, and pulse to 84. The next day the whole throat was swollen more than ever and the pus was not discharged as freely as at first, but the discharge was very foul. A trained nurse was called to attend the patient, and was particularly faithful seeing to it that the mouth, nose, and pharynx was sprayed or syringed with a piston syringe with hydrogen peroxide and with alkaline solutions every hour.

The temperature remained normal up to and including May 11th, but the general appearance of the throat did not improve. Large masses of sloughing tissue were removed by aid of swabs, washes, and manipulation through the nose and through the mouth. The patient was able to swallow at all times and that without choking, but with evident distress. On the morning of May 11th she became much exhausted, had difficulty in breathing, became cyanosed, and unconscious. Her throat proved to be almost closed from side to side, and again introducing my finger, about two ounces of pus were evacuated of such foulness that the husband fainted at the smell of the same. After cleansing the throat well and getting out a large amount of pus both through the nose and the throat, she became somewhat easier. I had hardly left her house when I was hurriedly called back. The patient was again cyanotic and breathing with great difficulty. By active work in cleansing the throat again and artificial respiration she was kept alive until Dr. Phelps could be summoned in consultation. He suggested that she be partially suspended so that the pus would run down into the nose, and this was done with temporary relief, but within ten minutes or before I could get to my office and back with a tracheotomy tube she was again in distress and unconscious.

I promptly performed tracheotomy, and she breathed easy in a few minutes, became conscious, was able to write for what she wanted, and the cleansing was once more begun. The tube was kept clear by tickling her bronchial tube with a slim feather, and the upper throat was carefully cleansed as before, whenever any indication arose, and at least once an hour. Her temperature promptly went up to 104° F. soon after the tracheotomy. Later in the day, May 11th, she showed cyanosis again, but the tube was clear and the throat, although looking badly, was somewhat lessened as to the amount of swelling, but an œdema spread all over both sides of her neck well down to the clavicle, but it was a soft swelling and not an œdema that would leave an indentation when pressed deeply.

On May 12th early she showed further signs of cyanosis, became unconscious, and a foul discharge came almost constantly from the nose and in large quantities. She died the same day, temperature 104° F., pulse 100, and respirations sixteen to twenty up to within four hours of her death.

Suppurating tonsils with sepsis enough and œdema of glottis, to cause strangulation are not every day occurrences, and I beg leave to report this case.

181 ALLEN STREET.

DEFORMITIES OF THE TRUNK IN CHILDREN.*

BY LOUIS C. AGER, M. D.,

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Under this title there is logically included a variety of diseases and conditions, some of which need be merely mentioned in passing, while others are worthy of extended discussion.

First. Fractures of the ribs, vertebræ, or pelvis, may produce deformities which are to be recognized by the history of the injury and by the examination of the parts. Such conditions are rarely obscure and need not be dealt with here.

Second. Inflammatory exudates and abscesses may produce superficial irregularities that ought to be readily diagnosticated. Under this head are included inflammations of the breast and other glands of the body, the more rare external observations pointing to internal pus as from the pleural cavity, from the liver, and from psoas abscesses. Here also belong the various fracture calluses, and also, a condition that I have seen once, a swelling along the side of a rib, apparently produced by a posttyphoid periostitis.

Third. The various forms of hernia must be classed by themselves, and are often obscure and confusing. But they must be passed by in a paper of this kind without discussion.

Fourth. Abnormal size, shape, or position of any of the internal organs may produce irregularities in the body contour, which are usually easy of diagnosis, although it is not always possible to determine the exact cause of the enlargement itself. In the chest the only abnormity that comes under this head is the precordial bulging that is produced by advanced cardiac hypertrophy, more particularly in children with thoracic walls weakened by rhachitis or other wasting diseases.

In the abdominal cavity enlargements of the stomach, liver, and spleen are the most frequent causes of deformities of this class. Here it is usually easy to determine what organ is at fault, but it is frequently difficult to decide as to the nature of the trouble. Tumefactions of the liver and spleen are serious or not according to the underlying cause. Tumors of the other abdominal organs do at times develop to a sufficient size in children to cause external deformity, but such conditions are rare. I recently saw a case of uterine polypus in a child that protruded for several inches from the vagina. To complete the list, prolapsed rectum, prolapsed rectal polypi, and prolapsed hæmorrhoids should be mentioned here.

Fifth. Conditions somewhat similar to the last are produced by the accumulation of large amounts of fluid in the various body cavities, abdominal, pleural, and pericardial. Noticeable enlargement, however, can only be produced in this way by a large amount of fluid. It is very important to remember that in pleurisy and empyema with a moderate amount of fluid there is likely to be a flattening of the diseased side of the chest.

After this very brief review of the various internal conditions, which are frequently the cause of variations from the normal contour of the trunk, let us take up the more or less permanent deformities produced by the action of malnutrition and

* Read before the Brooklyn Pædiatric Society.

wasting diseases upon the rapidly developing bones, cartilages, and ligaments. Theoretically there are four diseases that come under this head; Rhachitis, tuberculosis, syphilis, and osteomyelitis. The last two, however, very rarely cause deformities in this country. For convenience these deformities may be classified according to location into deformities of the pelvis, of the spine, and of the thorax, although they are all more or less interrelated.

THE PELVIS.—The abnormities of the pelvis, whether due to rhachitis, tuberculosis, or osteomalacia, are apparently much rarer in this country than in Europe, in spite of the fact that the first two diseases are so common in our large cities and among our immigrant families. Possibly, they are not so severe in this country. Certainly very few of the children brought to our clinics show any pelvic deformities of such a nature as to be appreciable without careful measurements. This is a subject that would well repay investigation, and there is ample material at any of our large dispensaries.

The various types of rhachitic and kyphotic pelves are of more interest to the obstetrician than to the pædiatrist, and they are fully described and illustrated in the various textbooks on obstetrics.

THE SPINE.—An attempt to describe and classify at all adequately, all the various abnormities that may be found in the spine would lead to the production of a good sized volume on orthopædics. I will, therefore summarize as briefly as is compatible with completeness and accuracy.

As regards causation the various deformities of the spine may be grouped under three heads: Injury, inflammation, relaxation or degeneration.

First. Injury: Direct violence may produce deformities at any part of the spine, either by sprains or by bone injury. Such conditions are much rarer, however, in children than in adults. There is one condition, nevertheless, with such constant symptoms and such a definite history of previous injury that it should be classed here. I refer to spondylolisthesis, a rare condition, but one of great interest to the orthopædic surgeon. This deformity consists in a slipping forward of one or more of the bodies of the lumbar vertebræ without a corresponding dislocation of the vertebral arch. This is made possible either by a congenital defect in the arch or by fracture. There are various degrees of this deformity producing various degrees of undue prominence of the buttocks and iliac crests. In the severer forms there are various bony changes resulting from abnormal pressure.

Second: Inflammatory Changes: A very great majority of the various inflammatory lesions of the spine are tuberculous and the degree of deformity depends upon the stage of the tuberculous process. As the disease is located in the bodies of the vertebræ the most frequently resulting deformity is an abnormal forward curve, kyphosis. This is frequently accompanied with a greater or less degree of lateral deviation, scoliosis. In Pott's lumbar disease there may be an abnormal backward curvature, lordosis. In addition to these mentioned abnormalities in Pott's disease, there are also present various compensatory curves that are fully described and explained in works on orthopædics.

Although most of the spinal infections are tuberculous it must be borne in mind that the pyogenic organisms do at times attack the vertebræ, particularly in children. This osteomyelitis, however, ought not to be mistaken for caries, as it is an acute process with high temperature abscesses and the other symptoms of pyogenic activity. In case of recovery it is unusual to have any marked deformity.

There are a few authentic cases of syphilis of the spine with symptoms similar to those of Pott's disease, but the condition is too rare in children to need more than passing mention.

Sarcoma and carcinoma of the spine are rare conditions, but they are now and then met in children. The deformity will, of course, depend upon the seat of the disease.

Spondylitis deformans is a rare disease, which may appear in children. It is classified in various ways, but I believe the tendency at present is to look upon it as one of the forms of arthritis deformans. It is, in some cases at least, the result of gonorrhæal infection, a form of so called gonorrhæal rheumatism. It is a chronic disease consisting in a slow inflammatory ankylosis of the spinal column. "The lumbar curve is obliterated, while the dorsal curve is increased and the patient walks more or less bent over by the dorsal kyphosis with a gait somewhat like that of Pott's disease." (Lovett.)

In all these conditions the first step is to recognize the presence of a deformity, and the second is to classify it. I would not make this very obvious remark if I had not seen a case which I reported to this society last year. You may remember it as that of a child who had been under the constant care of an intelligent physician for months, and finally died from terminal pneumonia and compression myelitis, without the physician recognizing a marked deformity due to spinal caries at the first dorsal vertebra.

As a matter of fact, it ought never to be difficult to diagnosticate a deformity due to Pott's disease, the angularity, rigidity, and spinal tenderness, as evidenced by all the peculiarities of movement and posture, make a picture that ought not to be overlooked, and that ought not to be confused with the various forms of spinal relaxation to be discussed later.

The far more important and more delicate point in the diagnosis of spinal caries is to find the deformity before it exists, in other words, the careful, accurate pædiatrist ought to be able to make a diagnosis in the earlier stages of the disease, if he sees the patient early, and ought not to wait for the marked lesions of destructive inflammation before beginning treatment.

Finally, inflammatory processes in the thorax may indirectly produce spinal deformities by means of contractions and adhesions. For example, Rotch says, in speaking of untreated empyema, "Where perforation does not occur the pus is partially absorbed, adhesions are formed, and sometimes great deformity of the chest follows which may result in a marked degree of lateral curvature of the spine."

Third. Degeneration and Relaxation. Possibly it would be more logical to make two headings of this instead of one, as there are two chief causes of these conditions, paralyses and wasting diseases.

Spinal deformities due to paralyses may be grouped together. They are rather uncommon as

they occur in the severer grades only. They may be present in infantile spinal paralysis, in cerebral palsy, and in pseudohypertrophic paralysis. The conditions produced depend upon the groups of muscles affected, and may be anterior, posterior, or lateral curvature. These deformities are readily diagnosticated as secondary to the paralysis, and do not show any of the signs of the inflammatory changes found in spinal caries.

There remain to be cited probably the most frequent, certainly the most frequently overlooked, varieties of spinal deformity. I refer to the various forms of ligamentous inequality and wasting, usually produced by rhachitis, but found also in other atrophic conditions. Owing to the lack of normal support the spinal column is abnormally resolved into its constituent elements. That is, the vertebræ are abnormally free to slip and bend upon one another. The result depends upon other factors. If for any case there is a protuberant abdomen, there will result a compensatory lordosis. In my opinion, this is the most frequent spinal deformity in moderate rickets, although it is not usually so stated. The weight of the head and shoulders naturally tend to produce a kyphosis, more particularly in nonwalking children. Scoliosis also results from the sagging of the trunk and from unequal muscular traction.

As a rule these deformities are readily differentiated from those due to active inflammation. The curves are more rounded, they are not usually rigid, and tenderness is not usually pronounced. There are, however, exceptions to this rule, particularly in babies under six months. Lovett cites cases in which there was so much rigidity and tenderness accompanying spinal prominence at the first lumbar vertebra as to render diagnosis impossible. It must be borne in mind in such cases that at this early age rickets is a much more frequent disease than caries.

There remains one spinal deformity that does not come within any of the previous classes. This is spina bifida. It is as a rule easily recognized, although some of the slight cases are confusing, and might possibly be mistaken for ordinary cysts.

The Thorax.—The two chief causes of thoracic deformities are the same that produce most of the spinal changes,—that is Pott's disease and rhachitis. The changes due to spinal caries are of course secondary and are directly produced by the spinal changes, and accompany them step by step. The usual deformity is the socalled pigeon breast, that is, a lateral flattening with an abnormal prominence of the costal cartilages and sternum. Less frequently there results the condition known as funnel chest,—that is the sternum is depressed instead of protruded. In both these conditions, when due to kyphosis of spinal caries there is present, in addition to the lateral flattening, a thrusting downward of the ribs toward or even into the pelvis.

The deformities of the chest due to rhachitis are almost identical with those produced in Pott's disease. In rickets, however, there is a more pronounced shortening and curving of the clavicles and there is not the same degree of down bending of the ribs. In addition there is present in a greater or less degree, the rachitic rosary,—that is, the rounded enlargement of the ends of the ribs. Among medical students the prominence of the chondrosternal joints is sometimes mistaken for this sign of rickets.

Rhachitis in common with simple malnutrition also gives rise to two other abnormities of the chest wall,—the lateral and horizontal fissures.

In order to understand the genesis of these chest abnormalities of childhood it is necessary to have in mind the anatomical differences between the infant and adult thorax. These differences are of two levels. At birth the chest is almost circular, its circumference is considerably less than that of the head, but it is decidedly larger in proportion to the height than in an adult. As a mechanical result of this circular shape of the thorax we see the abdominal respiration of infancy. That is, the respiratory muscles cannot increase the calibre of the pleural cavity by raising the anterior ends of the ribs, so that most of the work of respiration is done by the diaphragm. In other words, the act of inspiration is not accomplished by a general expansion of the chest cavity like the filling of a bellows, but by drawing down the bottom of the cavity, as a syringe is filled by pulling out the piston.

In addition to these differences in shape and movement there is also the marked difference in the character of the chest walls. Before puberty the sternum consists of five bony centers united by rather flexible cartilage. The ribs are more completely ossified, but they are small and flexible, and the costal cartilages are exceedingly pliable. As a matter of fact the chest deformities in children are not so much due to changes in the ribs themselves as to abnormal bending of the various cartilages and the joints between them. This is shown by the fact that the deformities produced in the healthy chest by obstruction to respiration are identical with those occurring in the rhachitic child. The socalled "pigeon breast" is by no means diagnostic of rhachitis. On this subject Filatov says: "This is wrongly held by some to be a symptom of undoubted rhachitis, inasmuch as it may arise without rhachitis in chronic hindrance to the air supply."

Moreover, the lateral and horizontal fissures are found on examination to correspond to the lines of joints. The two lateral fissures are produced by the continued traction of inspiration upon the line of costochondral articulations, as is generally recognized. I do not find it anywhere noted, however, that the horizontal fissure, the "peripneumonic fissure of Trousseau," also coincides with a certain series of joints. It is generally ascribed to the direct traction of the diaphragm on the elastic chest wall. But the fissure will be found to correspond with the junction of the fourth and fifth bony sections of the sterum, which have quite a definite joint until puberty, and follows the sixth costal cartilage to its junction with the rib. This produces the double effect of the horizontal fissure and the flaring out of the ribs below. This also is not necessarily a symptom of rhachitis.

Other chest deformities are rare. Cases of congenital absence of the sterum are now and then reported. Funnel chest sometimes occurs without any known cause. A western physician recently reported a family in which this condition seemed to be hereditary.

Although the attempt has been made to summarize all the varieties of trunk abnormities, there are doubtless some that have been overlooked. I trust that these will be brought out in the discussion. A

paper of this categorical nature, in which there is little if anything in the way of new observations is necessarily of greater benefit to the compiler than to the listener. Nevertheless, it is always of practical value to rearrange our previous knowledge around some connecting point as has been attempted in this paper. In this way we crystallize and corelate many unconnected ideas that have been afloat in our minds like abandoned boats on the high seas.

SILLIMAN PLACE AND THIRD AVENUE.

INGUINAL HERNIA.

By J. M. WHITE, M. D.,
Meridian, Miss.

How can two muscles or the edges of muscular tissue unite unless the edges are freshened? When a muscle is cut transversely across its fibres, the cut leaves a fresh surface and it will unite. When the edges of two muscles or the two edges of muscular tissue which lie parallel, and whose fibres lie parallel, or longitudinally to each other, are brought close together by suture, or otherwise, can they unite unless the edges are

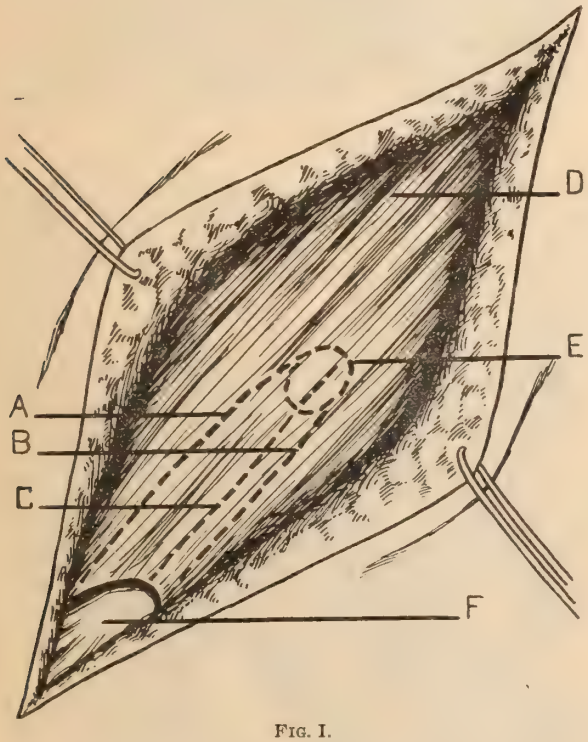

FIG. I.

freshened? In any plastic operation can the edges of muscular, mucous, or any other kind of tissue unite unless the edges are freshened?

In the successful cases of Bassini's operation, if a dissection were made exposing the external edge of the internal oblique and the inner edge of Poupart's ligament, should we find firm union of those parts, or would they simply be lying close together in a transplanted position, without firm union? The absorbable sutures may have trained them to lie closer together. What we want is firm union between those two structures. How are we going to get it unless the edges are freshened?

I realize and believe that it is difficult to

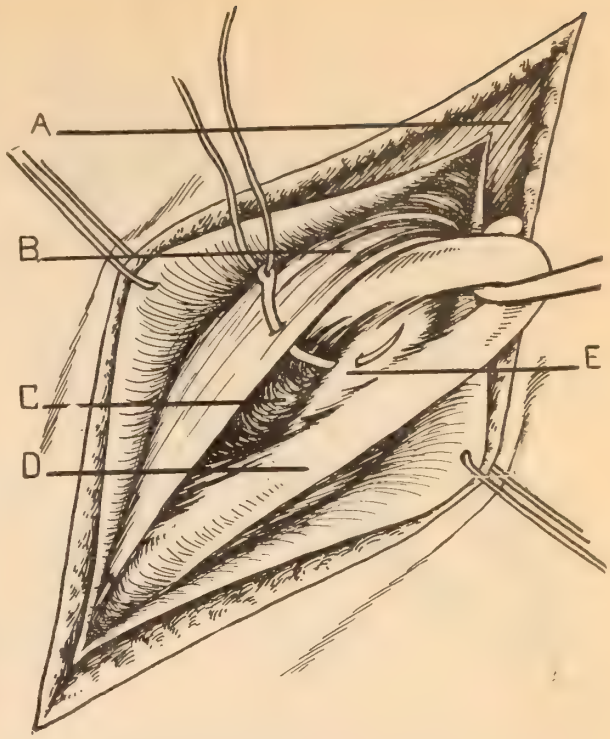

FIG. II.

freshen the edges of two muscles which lie parallel, hence the difficulty of getting firm union of the edge of the internal oblique to Poupart's ligament. While the catgut sutures may train those parts to lie close together, yet if there is no union, there will be left a weak spot in that part of the abdominal wall, which may account for some of the failures in Bassini's operation, hence the advantage of my suggestion to cut out a Λ piece of tissue in the external oblique.

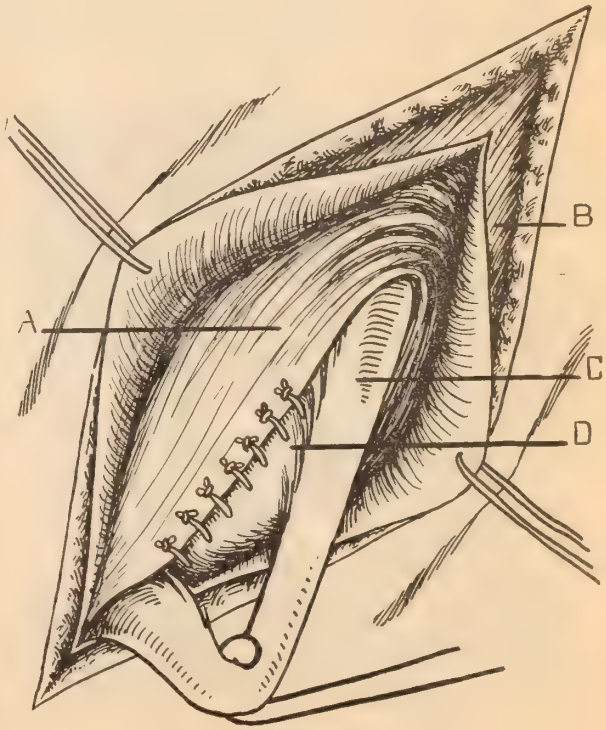

FIG. III.

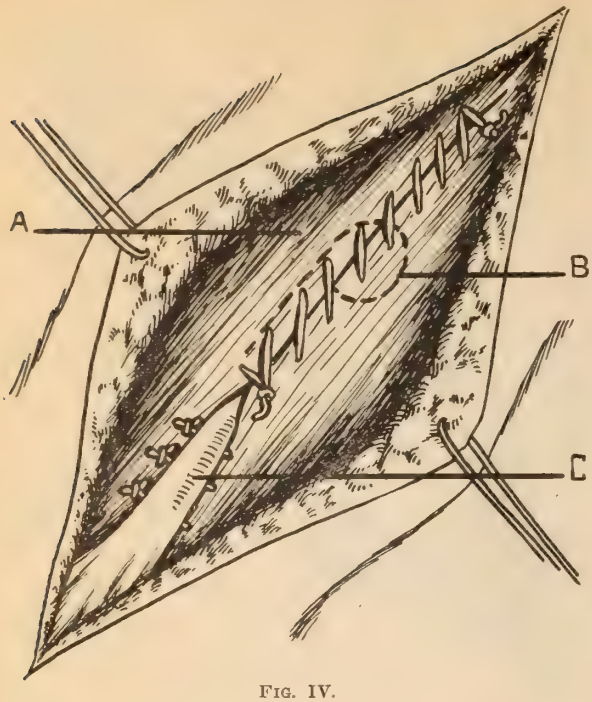

FIG. IV.

You will then get a freshened surface which will unite, and, when united with the ∧ piece removed, gives a tense muscular wall and helps to reinforce the weak wall caused by nonunion of the internal oblique to Poupart's ligament.

True, the aponeurosis of the external oblique is thin and delicate, yet the firm union of its edges in this inverted ∧ incision will make this muscle reinforce the weak place in the abdominal wall at the internal oblique and Poupart's ligament.

However, if the muscular fibres do not unite it may be that the intermuscular tissue unites. The following cuts shows a variety of different plans

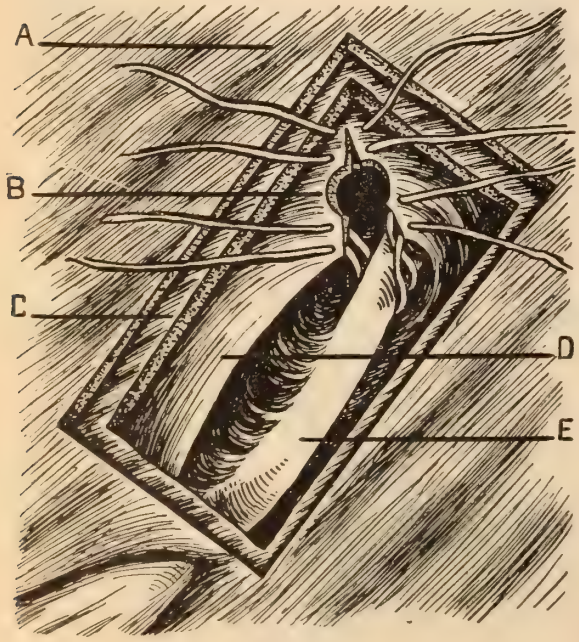

FIG. V.

that can be used to close the hernial openings with muscular tissue:

Figure I shows a plan that might be used in some cases to help reinforce the Bassini operation. In cases where the muscular walls have

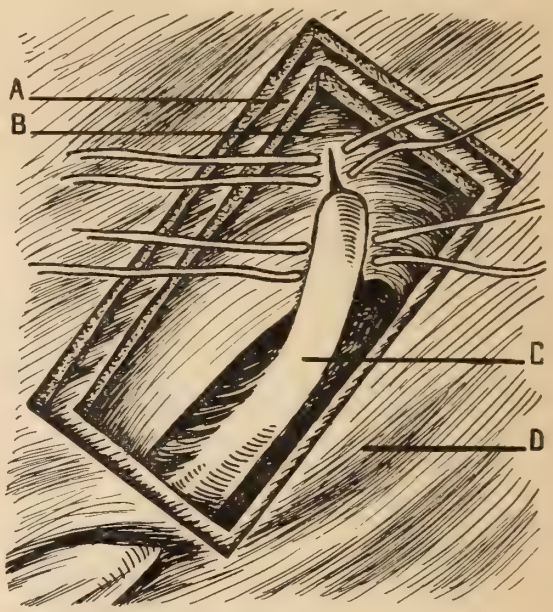

FIG. VI.

been stretched and are very lax I would suggest that the edge of the internal oblique be raised, as in Figure V, exposing the outer edge of the transversalis muscle. Then make a ∧ incision, as shown in Figure V, removing a ∧ piece of the muscle, making a round opening for the cord

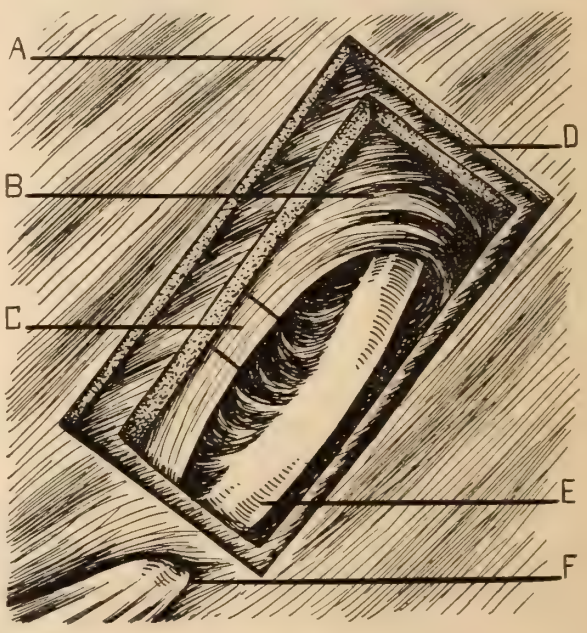

FIG. VII.

to pass through, and cut out a piece in the transversalis (Figure VIII). United with sterile catgut sutures, this will make tense the lower edge of the transversalis muscle, drawing its edge down and closing the opening of the internal

ring with muscular tissue. The lower edge of the internal oblique is replaced, the cord raised, and the sutures are inserted into it and Poupart's ligament, as in Bassini's operation, thus making a combination operation.

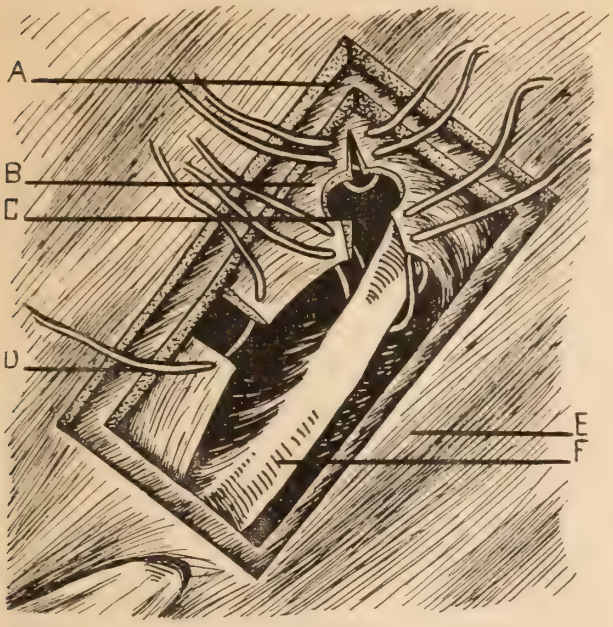

Fig. VIII.

Figure X and Figure XI show a plan to make flaps of the external oblique to pass through openings in the internal oblique and Poupart's ligament, the cord being raised, then the Bassini

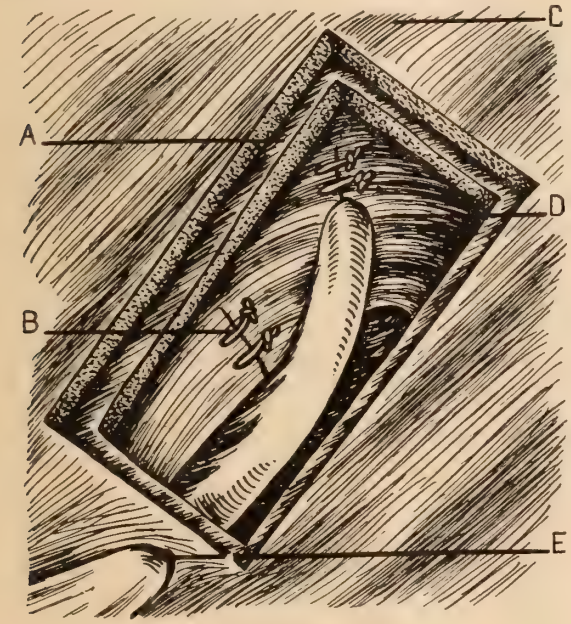

Fig. IX.

sutures are inserted, this helps to hold those two muscular pillars together.

I refer the reader to the following cuts and descriptions:

Figure I shows skin incision exposing aponeurosis of external oblique, invisible limits of lower muscles and internal ring. A and B, invisible

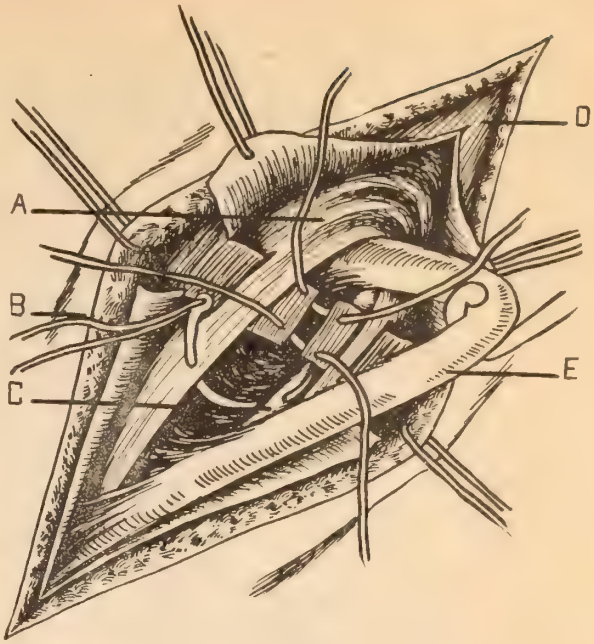

Fig. X.

limits of internal oblique; C, Poupart's ligament; D, aponeurosis of external oblique; E, internal ring; F, cord.

Figure II shows needle passed through internal oblique, transversalis, and Poupart's ligament. A, aponeurosis of external oblique; B, internal oblique; C, transversalis; D, cord; E, Poupart's ligament.

Figure III shows sutures uniting the internal oblique and transversalis with Poupart's ligament. A, internal oblique and transversalis; B, aponeurosis of external oblique; C, cord; D, Poupart's ligament.

Figure IV shows external oblique sutured and cord emerging midway between internal and ex-

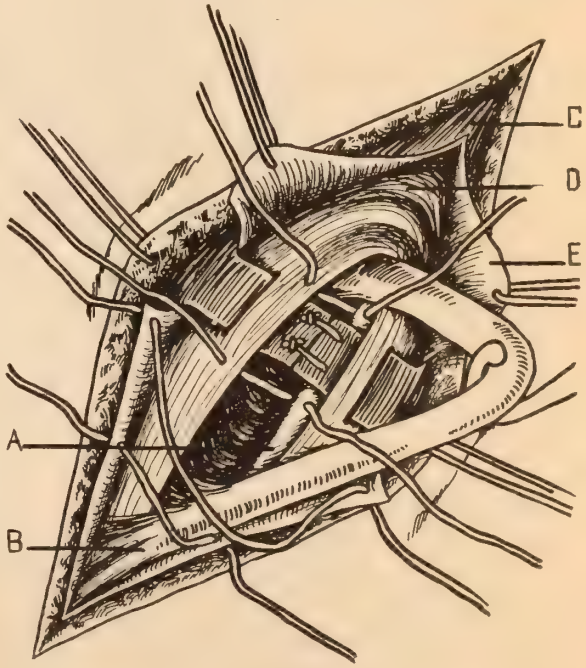

Fig. XI.

ternal rings. A, aponeurosis of external oblique; B, internal ring; C, cord; D, round opening for cord to pass through.

FIGURE V shows windows in external and internal oblique, muscles exposing ∧ incision with opening for cord and sutures in position. A, external oblique; B, transversalis; C, internal oblique; D, conjoined tendon; E, cord.

FIGURE VI shows windows in external and internal oblique muscles exposing transversalis with cord emerging from opening in ∧ shaped incision and sutures ready to be tied. A, internal oblique; B, transversalis; C, cord; D, external oblique.

FIGURE VII shows windows in external and internal oblique muscles exposing transversalis, with piece to be removed. A, external oblique; B. transversalis; C, piece to be removed; D, internal oblique; E, cord; F, external ring.

FIGURE VIII shows windows in external and internal oblique muscles exposing ∧ incision and

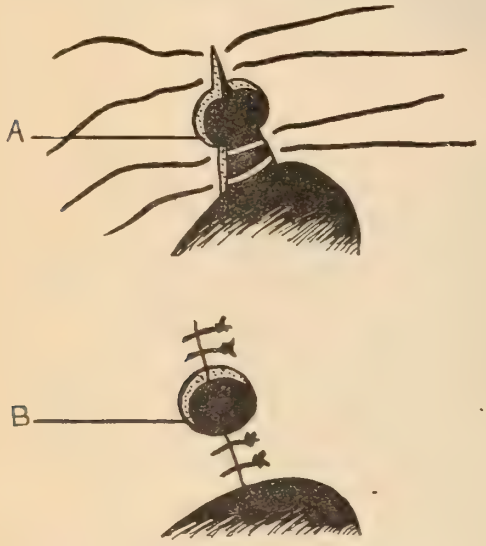

FIG. XII.

piece removed from transversalis with sutures in position. A, internal oblique; B, transversalis; C, opening for cord to pass through; D, sutures uniting edges of transversalis where piece has been removed; E, external oblique; F, cord.

FIGURE IX shows windows in external and internal oblique muscles exposing transversalis with sutures tied and cord emerging from opening in ∧ shaped incision. A, internal oblique; B, sutures tied where piece has been removed; C, external oblique; D, transversalis; E, cord.

FIGURE X shows flaps of external oblique brought through openings in internal oblique and united by sutures. A, internal oblique; B, needle carrying suture into internal oblique and Poupart's ligament; C, Poupart's ligament; D, external oblique; E, cord.

FIGURE XI shows sutures uniting flaps of external oblique tied after being brought into openings in internal oblique. A, Poupart's ligament; B, cord; C, external oblique; D, internal oblique; E, external oblique.

FIGURE XII shows ∧ incision in transversalis with a round hole cut in that muscle for the cord to pass through at A, B shows the ∧ incision united by sutures and sutures tied.

I submit these different theoretical operations to the practical surgeon. If he can weigh the different proposed procedures and get any good out of them I shall be satisfied.

HERNIA OF THE BLADDER.*

By C. F. KIVLIN, M. D.,
Troy, N. Y.

Hernial inclusion of the bladder while not common, is four times as common in inguinal as in femoral hernia, and very rare in other varieties of hernia, although it has been observed in ventral and pelvic hernia. It is a surgical condition which is becoming more common, for the simple reason that herniæ are operated on more frequently. Three anatomical varieties are recognized: 1. Extraperitoneal, in which the bladder protrudes alongside of the sac of an ordinary hernia, or independent of any sac. 2. Intraperitoneal, in which the bladder appears in the sac covered with peritonæum. 3. Paraperitoneal, that portion of the bladder which has peritoneal covering, is continuous with the posterior and inner portion of the true hernial sac. In some cases, indeed, it actually forms this portion of the true hernial sac, and consequently is very easily injured in cutting off, or in ligating the neck of the sac. This intimate connection between the true hernial sac and the bladder makes it very difficult to separate the one from the other without injury to the bladder.

As a rule, the diagnosis is not made before operation and comes as a surprise to the operator. If the operator is not on his guard it will often happen that he gets directly into the bladder thinking he is opening the hernial sac. In fact most of the diagnoses of this condition are made only after the bladder has been opened. In the event of opening the bladder one should suture and drain as the condition present warrants and complete the operation entirely or partially, as good surgical judgment prompts. Inguinal hernia of the bladder is always associated with omental, or intestinal, hernia, and in both my cases this condition was met with.

Clinical symptoms of vesical hernia, while on paper look easy and commonplace, but need as a clinical problem usually a master to solve. Some of the clinical symptoms of vesical hernia are enlargement of the hernial site when the bladder is full or distended, fluctuation, and difficulty in passing urine. At times the patient can empty the bladder only when in a certain position, which allows of free egress of the uncapsulated urine, or when pressure on the swelling allows of free egress. Sometimes the bladder is emptied in two acts. The first act is to empty all urine except what is within the herniated portion, the second act is to empty the herniated portion, while at other times the urine is voided drop by drop. Sometimes pressure on the hernial sac gives desire to urinate. Frequent urination is one of the most common symptoms of hernia of the bladder. Distention of the bladder for diagnostic purposes may be brought about by having the patient retain his urine for a long time, or by injecting air or water into the bladder. Occasionally

* Read before the Medical Society of the County of Rensselaer.

it has been found possible to pass a catheter into the herniated portion. Pressure may reduce the size of the fluctuating swelling, the accompanying intestinal, or omental, hernia may be reduced, but almost invariably there remains behind what B. Farquhar Curtis[1] describes as a small, flat, doughy tumor, feeling like a thickened sac, or like a flattened piece of adherent omentum.

Conditions which lead to the suspicion of the presence of the bladder during operation are: The presence of an unusual amount of fat in the inguinal canal, the location of the swelling, the difficulty of separating from the true hernial sac, the recognition of the musculature when present, the possibility of passing an urethral catheter or sound into the hernia. In addition to these signs, Shepherd mentions the large size of the inguinal opening, out of prooprtion to the size of the protruding intestines, the likelihood that the hernia will be direct (two out of four cases in his personal experience), and the difficulty of finding the neck of the true hernial sac. The latter difficulty was present in my cases. The fat which is present in the inguinal canal in these cases may be found as a diffuse layer, or as a lipoma. The herniated portion of the bladder is always found to the inner side of the true hernial sac. Sonnenberg, writing in von Bergmann's *Surgery*,[2] says that it is always to the inner side and behind the hernial sac. As a rule, it lies to the inner side of the spermatic cord instead of in front of it, as the ordinary inguinal hernal sac does. It is not intimately connected with the cord. The pedicle of the herniated portion of the bladder leads down behind the pubic bone into the true pelvis.

If the portion of the bladder which is in the hernia is normal, the bladder wall can be identified by its thickness, but frequently there is little or nothing of the muscular coat present in the hernia, which consequently has more the appearance of an ordinary hernial sac. In my second case I thought the bladder an adherent bowel, and recognized my error when I tried to separate it from the sac. If the tip of the uretral sound can be made to pass from the bladder into the hernial sac it is positive proof that there is a hernia of the bladder. But it is not possible, as a rule, to do this. If the bladder has been wounded it may be identified by the presence of urine, by the possibility of passing a metal instrument through the wound, and bringing it into contact with the sound, passed into the bladder through the uretra, or a catheter may pass through the urethra and out through the wound of the bladder, or if the patient be a man, by palpating his prostrate.

The bladder has been mistaken for the true hernial sac, for a lipoma, for properitoneal fat, for omentum, for a cyst, for a thickened mass in the sac wall, for a hydrocele of the cord, for a sacculation of the colon, and finally for a second hernial sac.[3]

In the radical operation for the cure of inguinal hernia as done to-day, the neck of the sac is drawn down as far as possible, in order to ligate off the sac as high as possible. In doing this the neighboring parietal peritonæum is also drawn on and through it traction may be made on the bladder. In case of recurrence of the hernia after operation, it can readily be seen that the bladder would be quite likely to be present in the hernia. In operation for recurrent hernia, therefore, we should be particularly on our guard against wounding the bladder.

Case I.—Mr. S. Patient showed an enlargement of the hernial site in the left inguinal region; there was a fluctuating swelling flat on percussion, while pressure on the distended swelling gave instant desire to urinate; it would disappear after urinating. The internal ring was enlarged. Clinical diagnosis: Inguinal hernia of the bladder.

Case II.—Mr. P. V., age thirty-six, married; previous history negative. Present history: About four years ago while stooping down to lift a box of bobbins, the patient felt a sharp pain in the left inguinal region. He was advised to wear a truss, which he had done till the present time. On examination I found a very large opening of the internal ring and some swelling when the truss was removed. I believed at the time that it was either the intestine or the omentum which formed the tumor, in fact, the thought never occurred to me that he had a hernia of the bladder. An operation was performed on June 1, 1905. I made the usual incision for inguinal hernia, divided the aponeurosis and retracted the internal oblique exposing the sac. I then opened the sac which had no neck, liberated some adherent omentum which was subsequently ligated and cut off. On the inner and lower portion of the sac was attached what I thought to be the bowel, but which upon trying to liberate with a piece of gauze, I found to be firmly adherent. On a closer examination I recognized that it was the bladder that I had to deal with. Following the bladder down under the pubes and making traction by pulling slightly, I then confirmed my error by seeing the mass move every time I pulled on the other portion of the bladder. As I could not tie off the sac I cut some of it away and closed it with interrupted suture. I then closed the muscle by one interrupted suture above the cord, and the remaining portion below, with a figure of eight double interrupted catgut suture. Aponeurosis was closed with continuous catgut, and the patient left the hospital two weeks after the operation. I examined him only lately and found that he had no return of the hernia. What should have put me on my guard was the unusual amount of fat in the inguinal canal.

Case III.—Mr. N. Age sixty-four; a laborer, Present history: Pneumonia, hydrocele fourteen years ago, which had been tapped, but had returned during present illness. One week ago, while moving a large stove, the patient felt a sharp pain like a knife in the left inguinal region. The next day the left side became sore and swollen; he then consulted a physician who made a diagnosis of the left inguinal hernia as well as hydrocele, besides his old hydrocele of the cord. On examination I confirmed this diagnosis. Pressing the finger well down into the abdomen gave the patient a desire to urinate, which he promptly did, passing more urine than he had done at any previous time since the trouble began; in fact, he felt fairly well relieved of his trouble. Probable diagnosis of omental or intestinal hernia. An operation was performed on November 6, 1905. The usual inguinal incision slit up the aponeurosis, and from the excessive amount of fat present I knew that I had to deal with a hernia of the bladder. I then retracted the internal oblique upward, the sac covered with fat, pulled down and opened the sac. I liberated the bowel, which was adherent to the sac. There was no neck to the hernial sac, but to the inner side of it was the protruding bladder, which was extraperitoneal and entirely independent of the sac. The bladder protruded and was free for about one inch from the margin of transversalis muscle on the left side. As I could not tie off the sac I closed it with a continuous catgut after ligat-

[1] *Annals of Surgery*, xxi, 1895.
[2] *Annals of Surgery*, xl, 1904.
[3] *Journal of the American Medical Association*, xiv, 1905.

ing the cord and removal of the testicle and cord. I then pushed the hernia of the bladder back and closed the direct opening and proceeded to close the internal oblique with a portion of Poupart's ligament with double catgut figure of eight sutures. Aponeurosis was closed by continuous catgut suture, while I used for the skin a silkworm suture. The patient was discharged fourteen days after operation.

2235 FIFTH AVENUE.

Our Readers' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LI.—How do you treat prolapse of the umbilical cord? (Closed June 15, 1906.)

LII.—How do you treat hemicrania? (Answers due not later than July 16, 1906.)

LIII.—How do you treat burns? (Answers due not later than August 15, 1906.)

Whoever answers one of these questions in the manner most satisfactory to the editors and their advisors will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short; if practicable, no one answer to contain more than six hundred words.*

All persons will be entitled to compete under the regulations laid down by the postal authorities. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL.

The prize of $25 for the best essay submitted in answer to question L has been awarded to Professor Irving Fisher, of New Haven, Conn., whose article appeared on page 24.

PRIZE QUESTION NO. L.

THE BEST FORM OF SHACK OR TENT FOR TUBERCULOUS PERSONS.

(Concluded from page 28.)

Dr. Charles Floyd Burrows, of Boulder, Colo., writes:

The triumvirate of air, food, and rest, is the modern panacea for tuberculosis. To get pure air, an outdoor life is absolutely necessary. How a tuberculous person may live out of doors and obtain the maximum of pure air and sunshine, with a minimum of exposure, exertion, and discomfort, is a problem which depends for its solution upon climatic environment, place of abode, and expense; and so the answer to the question: What is the best form of shack or tent for tuberculous persons? is based to a large extent upon the climatology of the country in which a shack or tent is to be used, its location, and the individual who is to use it. Furthermore, the type of shack or tent which would be the best and most generally practical for outdoor life in the east or south may not be the best for use in Colorado, New Mexico, and other western regions, where sunshine prevails and there is little rainfall.

There are certain fundamental requisites, however, which any arrangement for outdoor life must possess, wherever it be used, to be of the greatest benefit to a tuberculous person; namely, protection from wind, storms, and dampness; all the comforts possible for the occupant; easy access; and the constant admittance of pure air and direct sunlight. Whatever form of shack or tent that can be constructed in a practical and substantial manner at reasonable cost, for a tuberculous person, and yet gives to him the fullest advantage of these essential things in clever adjustment with his home, or boarding surroundings, will be the best in his case and the one from which he will derive the quickest and most complete curative results. Anything less than this—while being the best in a universal sense—will fall short in the individual application.

This article is being written upon the roof of my home, within a tent, which I deem the most satisfactory canvas arrangement for outdoor life in Colorado, and yet one which, slightly modified, might be suitable similarly in any locality, even where rains and storms are more prevalent.

According to reliable data the section of Colorado around Denver and Boulder has more days of sunshine than even noted Los Angeles. Direct sunshine, by stimulating metabolism, nutrition, and the increase of red blood corpuscles, is almost as important an element in curing tuberculosis as fresh air; and the combination of the two is invaluable. To obtain the benefit of this invigorating sunshine and the pure dry mountain air of this region, I constructed, just outside the window of my dressing room upon the roof of a one story projection of the house, the tent that I term my "solarium, or air parlor."

The window was removed; a glass door hung in its place; and a matched Georgia pine floor, nine by seven feet, laid upon the gravel of the roof. The brick wall of the house through which the window door opens forms the west wall, while the other three sides are made of ten ounce tent canvas extending from the floor to a height of five and one half feet. Corner posts and a railing at the top support these canvas sides, while at the bottom, by an arrangement of cords and rollers, all three sides may be raised, or each of them separately, thus allowing, if desired, an outside view, and a free ingress of air at the floor level. To cover this tent, an awning—similar in shape and construction to those which hang over the sidewalk in front of shop windows—was procured. This was made large enough to project eight inches beyond each side of the tent and was fastened to the brick wall of the house at such a height that, when lowered its lower edge, or fringe, hangs six inches above and eight inches to the outside of the upper border of the tent wall. Only in stormy or rainy weather is this awning lowered. At such times storms never have beaten in; and by rolling up the canvas, a foot at the bottom, a free circulation of air is assured. With the awning elevated, the tent is practically a large cloth box with the cover off, where air and sunshine are as obtainable as if sitting out on the open prairie. The entire expense of construction was less than thirty dollars.

Within this tent are a cot bed, an easy chair, and a writing desk, and here time is spent com-

fortably by day and sleep is sweet, breathing the pure oxygenating atmosphere of the star lit nights. Access is easy to living rooms and home conveniences, and this is a necessary feature of any arrangement for outdoor life. Here, even though weak and ill, one may live in the air and sunshine continuously and in a contented manner, either lying or sitting, reading or writing, awake or asleep. What more can a tuberculous person desire of a tent, or how much better can one be than this, which provides pure air, protection, and progressive return to health?

In the late summer and autumn of 1905, I lived some months in the Adirondacks, where tents are comparatively unknown and shacks are common. Much of my time was spent within one of these typical shacks, which was built of spruce logs, roofed with bark and carpeted with fresh balsam boughs. It was situated—as most of them are—under the shade of the forest, nearby the shore of a lake or pond, and some distance from a hotel or boarding house. Only one side was open, and while protective from storms and allowing the admittance of fresh air, sunshine was very scarce. While cloudy weather and rains are frequent in the Adirondack region and the amount of sunshine small compared to Colorado, yet a much better shack in such a locality could be constructed.

A proper shack should be built on elevated ground, some distance from water and in the open. It should be near the residing place of its occupant and have all the internal comfort possible. It should be roofed with glass like a hothouse and the side walls made of canvas that can be rolled upward easily. It should have also a good floor a few inches above the ground to prevent dampness, and should be at least eight by ten feet square and seven feet high. Such a shack is suitable for any locality where a tent is not practical, is easily modified and adapted to circumstances, and would be a great improvement over the damp, unsanitary Adirondack log shack or improvised board shack; besides it would provide comfort, air, and sunshine ad libitum.

Thousands of tuberculous persons who, for various reasons are prevented from visiting Colorado, New Mexico, Asheville, or the Adirondacks, and who may not be able to avail themselves of a shack or tent, must cure their diseased tissues at home by some form of outdoor life, if cured at all. To these a veranda offers many facilities and may be made to combine several of the useful features of both, shack and tent. A veranda used for such a purpose should be as roomy as possible, but at least eight or ten feet square, and should preferably have a southern exposure that it may be bathed in sunshine and sheltered from winds and storms. It should be open on two sides, better on three, and one or more of these should be protected by glass windows which may be hooked to the ceiling as the weather permits. Canvas sides that roll upward may be used to advantage instead of windows. If the dwelling of a patient has no veranda, one may be constructed suitably and cheaply just outside a window, and the window enlarged into a doorway. Such a veranda should be the living room of a tuberculous person, the battle ground where day after day is spent in conquering disease, and with care and attention many pleasing comforts may be available. If in addition to these, the veranda has an exposure which looks out on a wide expanse of natural beauty—on far away hills snow clad in winter and verdure coated in summer, or even on the busy scenes of a not too near by city street—so much the better. This relieves monotony and adds many an idea and many a changing thought to a lonesome mind. On such verandas tuberculous persons may spend much of their time out of doors, even sleeping there at night, and obtain much benefit, often cure.

In conclusion then the best shack or tent, or even a veranda, for outdoor life of tuberculous persons depends upon certain general underlying principles and outlines which are capable of practical adjustment in each individual case. With these principles and outlines well in mind, the best is always readily obtainable for each outdoor health seeker.

Dr. Edwin Charles Fassett, of New York, says:

In a consideration of the best form of shack for tuberculous patients, much depends on whether the patient is to live in it or merely to spend his or her sleeping hours there. As the sleeping shack is in almost universal use, and best suited to the average patient, I shall make it the subject of my description.

The wooden shack is the most satisfactory, cheaper in the end than the tent, and certainly better suited to winter use. Those that I have seen were situated adjacent to either a sanatorium or to a boarding house, upon which they depended for supplies, and for obvious reasons this is the best plan.

It is desirable to have the shack built on a slight elevation, if possible on the south or southeastern side of a small hill. The front should face in the same direction. This insures a maximum amount of sunlight and protection against most wind, as well as good drainage. Two or more patients should be accommodated, but I believe not more than six. Each person housed in this way decreases the expense, and adds to the sense of security. This I found to be of no small consideration, while house physician at a sanatorium in the Adirondacks.

The structure can be quickly and cheaply built. It should be divided into two parts, a sleeping and a dressing room, the dressing room at the northern extremity.

The floor, raised about three feet from the ground, should be nine feet wide and to accommodate three persons, an ideal number, should be at least thirty feet long. The rear wall should be eight feet in height, and have three openings at the top, one and a half feet square. They should be so situated as to come between the beds when they are in place. The openings, which are to act as ventilators, should be protected on the outside by awning shaped boxes, open at the bottom and screened. Air can thus circulate freely, while snow and rain cannot enter. The front of the ceiling should be nine feet

high at the floor line and project three feet beyond. This makes a good water shed and protects the front, which should be left open. Allowing nine feet for a dressing room, which is boarded in, except for one window and a door which leads out to the sleeping room, we have a space twenty-one feet long by nine feet wide, which will accommodate three single iron beds and leave ample space between and at the foot for a passage way. The beds should be placed with their heads against the rear wall between the ventilators. The dressing room may contain a stove, washstand, and lockers.

Most shacks are entered from the front, the three remaining sides being closed in, the south side out to the front roof line, i. e., three feet beyond the floor line. It seems better to me, however, to have the front boarded up for about two feet, and have an entrance either through the dressing room or through the south side. By boarding up the front the floor is kept dry during rainy weather and the snow will not drift in in winter. It also protects the patient from a misstep in the dark. In most climates fine wire netting stretched from the ceiling to the board barrier is essential to comfort. It partly defeats our plan of ventilation, but is much better than the mosquito netting over each bed, which allows less ventilation and should, lest it become a source of infection, be changed and washed almost as frequently as the bed linen. In this sort of shack a maximum of physical benefit and comfort may be obtained at a minimum of monetary expenditure.

Dr. Isaac W. Brewer, of Fort Huachuca, Arizona, remarks:

The first essential in the treatment of pulmonary tuberculosis is an abundance of fresh air. The ideal way for such a person to live is in the open air without shelter of any kind. This is impossible, excepting in certain favored localities like Arizona and New Mexico, and then only during certain seasons of the year. In most places it is necessary to provide protection from wind, rain, and snow, and from the direct rays of the sun during the heat of the day.

In order to live as nearly in the open as possible and still be protected from the elements, many invalids are occupying tents and shacks. If properly constructed and managed they are far better than houses.

Tents. Most of the tents used in the southwest do not provide sufficient air space, and are hot and poorly ventilated. This is especially true of those that are wainscotted, as all the openings around the bottom are closed, and when the flaps are down the only ventilation is through two small apertures near the ridge pole, through which sufficient air cannot enter.

A tent suitable for one person should be eleven feet high and fourteen feet square, with walls four feet high. The Munson hospital tent used by the army is of about this size. It is provided with an opening a foot wide and nearly as long as the tent on either side of the ridge pole. The fly is raised on a light ridge pole at least two feet above the tent proper. They are made of drab canvas and are much cooler than other tents.

The tent floor is best made of matched boards, and should be elevated at least three feet above the ground. Wainscotting is not recommended, but if used it should be at least one foot from the wall of the tent and the air space thus formed must communicate with the inside of the tent at the top and with the outside air at the bottom. All the lumber used in the tent should be dressed and painted or varnished.

The Holmes portable tent cottage meets nearly all the requirements of a good tent.

Shacks. These are cheap houses constructed to shelter one or more persons, the idea being to afford protection from the weather, and at the same time provide for the maximum amount of air.

To accommodate one person they should be twelve feet square with at least ten feet of air space between the floor and ceiling. The roof to be double, with an air space of a foot between them. The floor to be made of matched boards, and the sides of clapboards. The walls should not be plastered nor papered. Two large French windows should be provided for each side and the back, and a similar window and a door for the front. They should extend from the floor to the ceiling, so that the maximum ventilation can be obtained at all times. A broad veranda should extend all the way around the building, and be provided with screening to break the force of the wind. In localities where mosquitoes and flies are troublesome wire netting of nineteen strands to the inch should enclose the veranda.

The side walls of the building should terminate six inches from the eaves, thus allowing for a continuous circulation of air through the upper part of the room. In cold climates a fireplace should be provided; although not so economical in the expenditure of fuel as stoves, they are far preferable.

The furniture of the shack or tent should be as simple as possible. An iron bed and washstand, a bureau, a table, a few chairs, and a book case are all that are necessary. Under no circumstances should trunks and boxes be stored in the room occupied by the patient.

Miss Kate Brewer, of Fort Huachuca, Arizona, states:

Ever since I had tuberculosis, some years ago, I have had very definite ideas as to how I should live if I had to go through the experience again.

Selecting a knoll with trees, if possible, in some agreeable climate, preferably in the great southwest, I should build my living shack of well seasoned boards, raising it above the ground a few feet. The building should be twenty feet square and not less than sixteen feet high. This should be built in a position to insure every part getting sunlight at some time during the day. Extending entirely around the house so that one might follow the sun in winter and escape from its heat in summer, should be a veranda about five feet wide. The roof of this should extend continuously above the roof of the shack about two feet, thus forming an air space between the house

roof and that of the porch. The piazza should be furnished with a few comfortable chairs and entirely screened as a protection from flies and mosquitoes.

The inside of the house should be divided by a partition, extending from floor to ceiling, into two apartments. The one of these, facing away from the prevailing winds, should have one side entirely open. The opposite side should contain a good sized door to the other room. The two remaining sides should have long French windows, from floor to ceiling, which could be opened on calm days. This is the sleeping room, and should be furnished with a comfortable three quarter bed (not a cot, which is too narrow for comfort), set well away from the wall, a comfortable chair, and a small bedside table.

The remaining room, which serves as dressing room, should have as many windows as possible and a large door opening on the porch. It should be furnished with the necessary articles of furniture, dresser, washstand, and wardrobe; besides these a wood stove, a warm rug, a book case, writing desk, and table. Above all the room should be warm for dressing.

To start out on a cold winter day chilly and with hands and feet cold insures discomfort all day long, whereas to start out comfortably dressed, thoroughly warm is a pleasure rather than a business.

Dr. Herman Pomeranz, of New York, notes:

It is of primary importance, in a consideration of the best form of tent for use in the aerotherapeutical treatment of phthisical patients, to bear in mind the absolutely essential requirements, according to our scientific and hygienic laws; it is only with a knowledge of these laws—utilizing them as a kind of theoretical foundation—that the best form of tent can be constructed.

Some years ago, Blumenfeld and Dettweiler, after a profound and exhaustive study, proved conclusively that temperature, moderate or extreme, humidity and atmospheric pressure exerted very little, if any, influence upon tuberculous patients. The tent treatment of phthisis pulmonalis can therefore be instituted anywhere, provided the chosen locality has pure air. The soil must be dry and capable of good drainage.

The tent should be constructed with the following most important point in view, namely, ventilation. A failure to provide for this properly will do more harm than good to its inhabitant. The shape or size of the tent, the appliances employed within or without, the kind of covering to be used, the architecture—all these are minor details in the construction, and of petty importance as compared to the most important of all—the thorough, continuous, and well regulated ventilation of the enclosure.

The best form of tent from the standpoint of ventilation can be constructed in the following manner: A circular or oval floor of wood is made, preferably in a few sections; the floor is erected at least ten inches from the ground, so as to obviate any dampness of the ground. Upon this the skeleton of thin wood is built, constructing an enormous cone. At the apex of this cone a large space is permitted to remain open, and a large glass window made to fit. The latter serves a threefold purpose: In fair weather this window can be opened and left open by means of guy ropes, thus providing an excellent exit for the heated air and noxious vapors of the interior; in stormy weather it can be closed; at all times it permits of plenty of sunshine to fall into the tent. Colored canvas or very heavy duck can be used as a covering. This is stretched out upon the framework of wood, and so arranged by means of ropes that its lower margin comes below the floor of the tent, leaving a space between it and the floor. This permits of a continuous slow flow of pure air into the tent. The dimensions of the tent are made to suit the individual and the size and number of objects to be put into the tent. A tent constructed according to these very superficial outlines will insure nearly perfect ventilation; the apex opening provides for a constant exit of warm air, while the opening below for a continuous inflow of evenly distributed air.

Next in importance to ventilation is the heating of the interior of the tent, the maintenance of an equal temperature at all times. This is best accomplished by having a small stove, with the pipe exit on one side of the tent. Coal or wood can be used.

Having considered the choice of a locality for a tent, the importance of ventilation, the construction of the tent proper, we can now turn our attention to the arrangement of the requisite objects within it. The tent can be furnished as completely as any dwelling or hotel bedroom. A reasonably large bedstead, with a firm hair mattress, can be placed on one side of the tent; next to the bed, a small washstand, with a pail or pitcher of water; a bureau, an arm and ordinary chair, a rug, a table, a desk, a trunk, all these can be placed in convenient sections of the tent. Shelves for medicine bottles, books, and food can be made. Light, furnished by means of an oil lamp or candle, best, of course, if any connection can be obtained with an electric wire.

Therapeutical Notes.

Spinal Cocainization After a Preliminary Cutaneous Incision.—In a very fat person, in whom it was impossible to distinguish the spinous apophyses, M. Hackenbruch (*Zentralblatt für Chirurgie, Le Bulletin médical,* April 11th) made an incision in the skin at the level of the third and fourth lumbar vertebræ, of about 6 c.c. in depth. The subsequent puncture was made so easy that since then he has always made a preliminary incision of about half a centimetre in length after first rendering the skin insensitive by cocaine. After the puncture, the little wound may be drawn together with adhesive plaster.

Hypochlorhydria and Sodium Bicarbonate.—Lenassier and Lemoine reported to the Société de biologie of Paris (*Le Progrès médical,* April 21, 1906) that in a series of studies upon the ac-

tion of sodium bicarbonate upon the secretion of the gastric mucosa, they had confirmed the former view that the sodium bicarbonate is an excitant of the gastric mucous membrane, and especially increases the proportion of hydrochloric acid. This action is more marked in hypochlorhydria than in cases of hyperchlorhydria. The recent experiments therefore confirm the former teaching, and invalidate the results obtained by Pawlow, which threw doubt upon it.

Sinus of Breast After Abscess Treated with Oxygen.—M. E. Dubois (*Clinique de Bruxelles*, through *Le Bulletin médical*, May 9, 1906) has applied Thiriar's method of treating suppurating cavities by oxygen to abscess of the mammary gland. After evacuating the abscess, he introduced a drainage tube through which oxygen gas was carried into the cavity and escaped through another tube, the end of which was placed in an antiseptic solution in a basin on the floor. The two drains were fastened in place with safety pins and absorbent cotton. The oxygen after traversing the wound escaped in bubbles from the peripheral extremity, bringing with it the detritus of pus and clots from the abscess. Forty-eight hours of this treatment stopped the suppuration and the fever. Cure followed in six days with simple bandaging.

The Therapy of Exophthalmic Goître.—Professor Schlesinger, of Vienna, in a clinical lecture (*Wiener klinische Rundschau*, April 29, 1906) reviews the treatment of Basedow's disease, which he considers under two headings, treatment at the beginning of the disease and treatment of the disease when fully developed. Almost the first symptom noticed by the patient is progressive loss of weight. All remedies that influence nutrition and the function of the gland unfavorably are, therefore, contraindicated. Thus, iodine and its preparations, thyreoid and ovarian tablets, are especially to be avoided. Smoking must be very much restricted, and alcoholic liquors prohibited, except a small quantity of beer, if desired. All articles of food that are decidedly indigestible are prohibited. Milk and its preparations are allowed. Like the tuberculous, these patients should live as much as possible in the open air. Light hydropathic measures, such as warm baths, with cool douches to the cervical region; or wet packs of warm water, are very useful. When there is a strong subjective feeling of distress or palpitation of the heart, an icebag may be placed over the precordia. When applied according to the rules which were laid down by Winternitz, these expedients are successful in quieting the disturbed patient, increasing the appetite and reducing the subjective feelings of heat, which occur especially in Basedow's disease. At this early stage treatment by galvanism should be begun, and certain local applications made. By means of a combined treatment, the alarming symptoms of disease and the bodily weakness are both relieved. The danger of a sudden collapse or of an accident or complication due to the weak condition of the patient will be vitally diminished in sympathy with the improved general state, which is demonstrated by a progressive gain in weight. It is of interest to note that Schlesinger has seen Basedow's disease, with a severe and acute beginning, develop in two cases that were taking ovarian tablets internally. The therapeutical measures in the second or fully developed stage should be directed to (1) reducing the quantity of the hypersecretion, (2) to the removal of the affected gland, or at least the part which is diseased. In order to make the toxic products secreted by the thyreoid, harmless to the organism, Länz has recommended the use of milk taken from thyreoidectomized cows, which may be used fresh, or evaporated and powdered. The author, however, has tried this without marked benefit, and thinks that its influence is insignificant. The injection under the skin of serum from thyreoidectomized sheep has been followed by reported good results, and the author has observed decided benefit following its use, and warmly recommends it, although the cost is so great that it is prohibitive to many patients, at least, for a long treatment. The diseased gland can be removed by operative procedure, according to Kocher's method. The combination of partial excision with deligation of the arteries which supply the gland has given the best results. However, on account of the dangers of the operation, it should only be resorted to in rapidly progressing cases which resist all internal medication, or when there is very marked exophthalmus with keratitis, or a large struma with marked stenotic symptoms, or cachexia. Another operation, the resection of the sympathetic nerve, has reduced the swelling of the eyes, but exerts little influence upon the other symptoms of Graves's disease. Trials of the Röntgen ray treatment did not confirm the successful results which have been reported. In five cases, it is true that the bodily weight was rapidly increased, but otherwise no favorable influence upon the disease was observed. Among the older methods of treatment the water cure is recommended for the more severe cases, and especially institutional treatment for the very nervous patients. Galvanism of the cervical sympathetic, the cervical medulla, and the thyreoid produces good results. Change of residence, especially to a mountain region, is generally beneficial, but patients are advised not to take much exercise until they have become accustomed to the altitude, otherwise their symptoms are intensified. Other patients find a marine climate or a sea voyage more suitable. Sea bathing must be cautiously indulged in, as all violent exertion is injurious. As regards the medical treatment of this stage, it is advisable to refrain from iodine preparations. Thyreoid tablets and ovarian preparations are highly dangerous, and are prohibited. Thymus preparations appear not to be injurious, but on the other hand, do not appear to have any particular value in this disease. Digitalis should not be given for the tachycardia, but may be cautiously used in weakness of the heart muscle. The same remark applies to strophanthus. The most successful results are obtained from phosphorus, arsenical preparations, strychnini, quinine, and in anæmic cases, iron preparations. Bromides are

useful to relieve excitement; the following is a favorite formula:

℞ Ammonii bromidi, ...0.2 gramme;
Codeinæ phosphat., ...0.01 gramme;
Sodii bromidi, ...1.00 gramme.
M. S.: To be taken three times a day.

The Value of Diphtheria Antitoxine Injections in Pernicious Anæmia.—Rénon and Tixier (*Bulletin et memoires de la Société médicale de hôpitaux de Paris*, March 15, 1906) communicate the clinical history of a case of pernicious anæmia in which a clinical cure was obtained. The principal interest in the report resides in the comparison afforded by the careful study of the case of different modes of treatment. The patient was a woman, sixty-eight years of age, a housekeeper, who for five or six years had gradually been losing her strength, and this debility was accompanied by increasing pallor, her limbs were swollen, and she suffered very much with diarrhœa. Upon admission, she was found to be greatly emaciated, very pale, and to have marked œdema of the lower limbs. The abdomen was swollen and tender in the epigastric region. The diarrhœa was profuse, but the discharges contained no parasites nor eggs. The liver was slightly swollen; the border of the spleen could be felt. The quantity of urine varied from one and a half to two and a half litres in twenty-four hours; at the beginning it contained a little albumin and indican, but these soon disappeared. There were no biliary pigments in the urine, either normal or abnormal; and no bile salts. The diarrhœa completely disappeared within a few weeks, under dietetic treatment with képhir in place of milk. The red blood cells were reduced to 880,000 and the whites to 2,000. There had been no hæmorrhage or other affection, either acute or chronic, to account for the condition, which was ascribed to pernicious anæmia. There were no traces of polychromatophilia, poikilocytosis was not very marked, and there was not much variation in size, the number of erythrocytes of normal size exceeded by far the giant or dwarf cells, and the microcytes were less abundant than to macrocytes. The hæmoglobin was relatively large, as it was fifty-five per cent. with only 880,000 red cells. There were eighty mononuclears (not granular) to twenty polynuclears (neutrophile). The abnormal elements were notably rare, since only one megaloblast was found to one hundred leucocytes, and one myelocyte to six hundred leucocytes. The hæmatoblasts were scarce. Tables are given showing the variations of the several elements under different stages of treatment. At first, the patient was subjected to an exclusive arsenical treatment by Fowler's solution. Subsequently, the x rays were substituted and the arsenic discontinued. Finally, the patient received injections of diphtheria antitoxine in addition to the radiation. The results may be summarized as follows: (1) Under the arsenical treatment, the number of blood cells decreased and the patient continued to lose weight. (2) The patient had five séances, of fifteen to twenty minutes' duration, the rays being directed to the thighs in order to act upon the medulla femoris. Result, the blood cells increased from 790,000 to 920,000; the general condition was incomparably better and the patient gained weight (from forty-three to forty-three and a half kilogrammes). (3) During the next period the radiation was continued and antidiphtheritic serum was given; there were three séances of x rays and forty-five c.c. of antidiphtheritic serum were given in four doses. Result, the red cells increased from 920,000 to 1,315,000, and the gain in weight continued (forty-three and a half to forty-five kilogrammes). Following this for seventy-six days antitoxine treatment was continued alone. The patient received fourteen injections, amounting in all to 265 c.c. of antidiphtheritic serum. The number of red cells steadily passed from 1,315,000 to 2,545,000. The hæmoglobin became almost normal, or ninety per cent. The body weight came up to forty-nine and a half kilogrammes and the general condition became excellent. The digestive and other functions were well performed, and the patient considered herself as cured. In spite of the large doses of serum, there were no bad results, either local or general; especially was there no erythema, although on the average there were given twenty c.c. of serum subcutaneously three times a week. The special effects of the injections upon the blood elements were very evident. The red cells were notably increased two hours after the injection; they attained their maximum between the fourth and the fifth hour; then they slowly diminished again; but twenty-four hours after the injection their proportion was still larger than had existed previous to the injection of serum. Injections of normal salt solution made for comparison, under the same conditions, produced only an insignificant oscillation in the number of red cells. The effects of the antidiphtheritic serum upon the white cells was also to augment the proportion of eosinophile polynuclears in the hours following the injections. Examinations of the blood after irradiation of the medulla of the femur likewise showed augmentation of the red cells and also eosinophilia. The improvement in the blood in this patient was unaccompanied by any well marked myeloid reaction. The slight inequality of the blood cells observed at the beginning progressively diminished. It is of special interest to notice in this case the parallelism in therapeutic results between agents of such diverse character as x rays and diphtheria antitoxine. The authors explain it as follows: Under the influence of radiotherapy, a number of white globules are destroyed, forming leucolysins, which produce by excitation of the hæmatopoietic organs, an augmentation of the number of red cells and the passage into the peripheral vessels of a very great proportion of eosinophiles. By injecting under the skin antitoxic serum, which is more or less hæmolytic, the hæmolysius produce exactly the same effects. In a word, the presence of leucolysius, or of hæmolysius, seems to be the necessary factor to bring about the all important reaction of the bony medulla. The effects were most marked at the beginning of each treatment before the system became accustomed to the effects.

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THE NEW ORLEANS CAMPAIGN AGAINST YELLOW FEVER.

It has been reserved for a visiting observer to furnish us with what is in all probability the most graphic and appreciative account of the magnificent work done in New Orleans last year in overcoming an outbreak of yellow fever. The story is told by Rubert Boyce, M. B., F. R. S., the dean of the Liverpool School of Tropical Medicine, and it is entitled *Yellow Fever Prophylaxis in New Orleans, 1905.* Besides the spirited narrative of what he observed in New Orleans during the campaign, in which he expresses his admiration of the heartiness with which the newly established facts concerning the relations of *Stegomyia fasciata* to the disease were accepted and acted upon, the author gives us a succinct and accurate account of the rise and progress of the mosquito theory of the ætiology, a theory of which the New Orleans experience in 1905 is a fresh and striking corroboration.

The brilliant outcome of the campaign can only be viewed as a tribute alike to the discernment of Finlay, who, twenty-five years ago, enunciated the mosquito theory of the transmission of yellow fever; to the enthusiastic and devoted labors of Reed, Carroll, Agramonte, Lazear, and Gorgas in proving its truth in Cuba; to the corroborative observations of the English (Myers and Durham), the French (Marchoux, Salimbeni, and Simond), and the Germans (Otto and Neumann) in Brazil; to the further studies of representatives of the United States Public Health and Marine Hospital Service (Rosenau, Beyer, Parker, Pothier, and Francis) in Mexico; to the continued observations of Thomas and Breinl (representing the Liverpool School of Tropical Medicine), with those of Lutz, Ribas, Barreto, De Barros, and Rodriques, in Brazil; to Guiteras's work in Havana and Cruz and Liceaga's in Mexico; to the well directed energy of the medical officers of the Public Health and Marine Hospital Service in and about New Orleans; to the intelligent activity of the sanitary officials of New Orleans and Louisiana; and to the prompt and unreserved renunciation of the old shotgun quarantine methods by the people of New Orleans and their ready adoption of the demonstrations of science.

As to the management of the *Stegomyia fasciata*, the author says, quite justifiably: "Considering the comparative simplicity and inexpensiveness of the methods necessary to be employed, the only excuse for the presence of yellow fever in any district must now be attributed to indifference." He is justified, too, we think, in criticising the coexistence of State and national activities in conducting such a campaign, and the time cannot be far distant, we should say, when such work will be given wholly into the hands of the Public Health and Marine Hospital Service.

APPARENT SLIPS IN ASEPSIS.

It happens often enough, as many a surgeon realizes, that measures designed to establish asepsis turn out to have been faulty, but it should be somewhat consolatory to reflect that the failure is not always a matter that the surgeon must charge to his own lack of care or can impute to defective materials in ligatures, sutures, or dressings. When a septic process shows itself in a part more or less remote from the field of an operation, it sometimes appears that it is not a manifestation of metastasis, even if the situation of the new trouble lies in a direct path of metastatic movement.

We must bear in mind the probability that in many a case in which an operation is necessary there are already septic germs present in various parts of the organism more or less distant from the one directly involved in the operation. These germs are ready to do their pathogenic work whenever anything happens to impair the natural defensive forces. Thus it comes to pass that tubercle bacilli, to mention organisms that are not septic, seize upon the opportunity afforded them by the lowering of local vitality consequent upon an injury to set up the tuberculous process in the structures affected by the traumatism. Taught by the late Dr. Lewis A. Sayre,

we have long been accustomed to trace the occurrence of hip joint disease to an injury. We now infer that the injury does not directly cause the hip disease, but gives rise to it indirectly by crippling the normal resisting power of the structures entering into the composition of the joint.

But it is not impairment of local vitality alone that may occasion pathological results from the presence of lurking microorganisms; a general lowering of the vital powers, even if only temporary, may enable the malign germs to exert a damaging action. And it may take little to give the finishing touch to a decline in the resisting energy that has been going on slowly under the debilitating influence of disease and confinement to bed. The mere shock of an operation itself or that of the necessary anæsthetization may prove sufficient, and so even may the patient's dread of the ordeal. Such considerations as these seem to warrant uncertainty in imputing septic conditions following an operation to negligence or to unsuspected contamination of the material employed, though of course they should not be too lightly seized upon as a scapegoat and can constitute no excuse for failing to do our utmost to ascertain the real cause of the trouble.

A UNIFORM CATHETER GAUGE.

A notable meeting was held in Philadelphia on June 25th and 26th. It was the fourth annual meeting of the American Surgical Trade Association, made up for the most part of makers of surgical instruments and appliances and dealers in those products. It is understood that one of the leading objects of this young organization, already powerful in the number and influence of its members, is to encourage cordial relations between the instrument makers and the medical profession—relations, we should say, that have never been anything else than cordial, at least so far as the better representatives of the two classes are concerned. Many a medical man conceives the central idea of a new and valuable instrument, but he is apt to lack the mechanical aptitude or training required to produce the actual instrument in its most advantageous form. What he may lack in this respect the instrument maker is generally very ready to supply, and hearty acknowledgment of such real service, usually rendered without any hope of personal gain, comes freely from the physician. There is therefore the best of grounds for cordiality between the two professions, and it should be fostered by all possible means.

The association naturally concerns itself largely with trade questions, and we fear that one of them—that of how to eliminate irresponsible dealers who furnish unsatisfactory if not practically worthless products—has come into its present importance chiefly because the members of our profession have so often lost sight of the fact that excellence is the one thing to be sought for in instruments, let the cost be what it may. But it was not commercial matters alone that were discussed at the meeting in Philadelphia. A very important resolution was adopted, to the effect that after this year all urethral catheters, bougies, and sounds would be made in conformity to the French gauge. It is certainly desirable to have a uniform scale in force. It will prevent misunderstanding in physicians' orders, with the possibility of resulting loss of time, and it will do away with the need of much tedious specification in clinical histories. The desirability of the course announced in the resolution does not rest upon the real or fancied intrinsic superiority of one gauge over another; it is simply a matter of the advantages of uniformity. The action taken will, we have no doubt, prove as useful to everybody concerned in the manufacture and use of such instruments as the adoption, a few years ago, of a uniform pitch for pianos has proved to musicians. The association is much to be commended for the step it has taken.

VOCAL TRAINING.

Manuel Garcia died recently in London at the age of a hundred and one. Some fifty years ago, when he was already a distinguished and artistic singer and teacher, he set about studying the mechanism of voice production. His efforts resulted in the invention of the laryngoscope, valuable to our profession not only in itself, but as a basis for many similar devices for the examination of previously unexplorable organs. Satisfying as his invention and its revelations must have been to the maestro, whose own voice had already been impeccably "placed" and controlled, the laryngoscope immediately gave rise to a totally false method of vocal training by the imperfectly educated or quackish mob of singing teachers who to this day overwhelmingly outnumber the few well qualified instructors.

A priori it seems obvious that a knowledge of the anatomy and physiology of the vocal apparatus should precede their correct use, but actually such knowledge is detrimental in the extreme to the student. The fact that the mind is, consciously or unconsciously, fixed on the throat inevitably keeps the voice there; and instead of the teeth and facial bones forming the sounding board of the tone, as is necessary for the produc-

tion of the complete number of overtones, causing the exquisite fulness and resonance of the natural voice, the stiffened muscles of the pharynx and neck are used, to the stifling of overtones and the quick fatigue of the singer. Imagine the carefully evolved belly of the violin being replaced by a stuffed bag of some soft material! The strings count for little, the sympathetic and reproductive sounding board for nearly everything.

As the child learns to walk, talk, and exercise all his natural powers in happy ignorance of the complex physiological and psychological processes involved, so the singer should learn by precept and example without knowing or thinking of the *modus operandi.* He thinks of the pitch of a given note and unhesitatingly sings it in perfect tune, and he should be taught to think of Nature's sounding board and learn to make it resound sympathetically. We are aware that the sense of touch, for instance, is really a cerebral phenomenon, but long association imperatively refers it to the finger alone. This self deception must be deferred to in training any faculty.

We may have occasion to advert again to mental direction in a matter of far reaching importance in medicine. It is the basis of hypnotism and of all the quackeries, Christian Science notably. Athletes being trained in the lifting of heavy weights are told to fix their minds on the words "eye," "high," and "quick," with results otherwise unattainable; players are made to imagine themselves the characters they assume; the temporary results of any new "cure" in tuberculosis are well known; and a few moments' thought will recall many instances of the remarkable effects of ignoring absolute truth and appealing to the fallacies of mistaken experience.

THE PROSTITUTION QUESTION.

The question of how to treat prostitution is a very serious one. An evil which is as old as the history of man, and one which seems to grow with what we are pleased to call civilization, should receive proper attention. The fabled conduct of the ostrich will not do in this case. But the opinions of our leading men, preachers, social philosophers, and physicians, if they really dare to voice one, are so divergent that a compromise cannot be hoped for in the near future. And still the question is of no less import than that of tuberculous disease. Our moral, social, and hygienic life is brought face to face with it, and no definite answer is to be found. Our great communities, such as New York, Philadelphia, Chicago, and Boston, are undecided in their measures; theories and practice do not seem to agree.

Over five hundred years ago the aldermen of the old Polish capital Cracow had, in 1398, decided to expel all prostitutes from the city. But to no avail; the evil still existed. Finally they consulted the monk John Falkenberg, who at that time taught theology at the Dominican monastery school, and was a learned man. He was asked two questions: Is prostitution to be permitted in the city? and How should the municipal government treat the houses of ill fame? His answer was that, although the prostitutes should really not be permitted in the city, according to the Bible, the apostles, the church fathers, and other authorities, the evil resulting from the expulsion of the prostitutes would be greater than if these women remained. And of two evils the lesser should be selected. If, now, the prostitutes were allowed to remain, they should have a place of shelter, but these retreats should not yield a revenue to the owners, should not be houses of vice, but simply shelters. The wise officials therefore permitted the prostitutes to stay in the city. The scholastic answer of the Dominican professor is to be found in *Acta officii consularis cracoviensis ab anno MCCXCII ad annum MCCCCII*, republished by Johannes Lachs in the *Dermatologische Zeitschrift* for June, 1906.

TUBERCULOUS DISEASE AMONG MARRIED COUPLES.

It would be of interest if statistical data could be collected in reference to the danger of tuberculous infection among married couples. Dr. Wilhelm Weinberg (*Beiträge zur Klinik der Tuberkulose*, v, 4, 1906), has compiled the literature on this subject which has so far appeared. From his statements we see that opinions differ widely. While Thom gives the proportion of tuberculous infection between husband and wife as three per cent., Mongour as four, and Haupt as five, we see that Cornet places it at twenty-three per cent. and Elsässer even at thirty-nine. This great difference must be attributed to the social position of the patients, so that three per cent. among the well to do may be a high proportion, while thirty-nine per cent. among the poor may be low.

But it is not only the social condition that has to be taken into consideration; the influence of age and sex, furthermore, the question of whether the healthy husband spends his working hours at home or outside the family, and other questions have to be reckoned with. If the mortality of the surviving consorts of married couples, the others having died of tuberculous disease, is to be compared with the general mortality of the population from such disease, it will be found that the

remaining consorts furnish a proportion double that of the general population. The mortality is greater among the widows than among the widowers, and this is explained by the observation that the widow had usually taken care of her tuberculous husband day and night, while the widower attended to his work during the day and waited on his wife only during the night. But this excessive mortality decreases in proportion to the time that has elapsed since the death of the consort from tuberculous disease.

THE INFLUENCE OF TOBACCO ON PREGNANCY AND LACTATION.

The subject of the relations of certain occupations to the health of persons engaged in them is a large one, and in some of its aspects it is not easy of satisfactory study. This seems to be the case with regard to workers in tobacco. Work in tobacco factories has been thought by many French observers to predispose women to abortion, but there are other investigators of the same nationality who deny that it has any such effect. Dr. J. Livon (*Marseille médicale*, 1906, No. 5; *Revue française de médecine et de chirurgie*, May 25th) appears to be one of those who uphold the contention that women who work in tobacco are prone to abortion, and he thinks that their offspring, even when born alive at full term, are frequently cut off in early infancy.

M. Livon cites three cases that have come under his observation. In the first one a woman conceived seven times, but only four of the pregnancies went to term. She then went to work in a tobacco factory and became pregnant seven times more, by another man. These seven pregnancies all ended in abortion. In the second case there were ten pregnancies, all ending in abortion. In the third case a woman working in a factory had five abortions. She then left the shop and bore two living children, one at eight months and the other at term. Three cases can hardly be said to count for very much in settling such a question as the one discussed by the author, though of course some weight may be attached to them.

But it is on lactation, according to M. Livon, that working in tobacco has a particularly deleterious effect. The author avers that it makes the woman's milk smell of tobacco, and he maintains that no woman engaged in such work should nurse her child. The mortality among children nursed by such mothers is very high, though the same women's children survive in fair proportion if they are put out to wet nurse. Illness in the child of a woman employed in a tobacco factory often comes to an abrupt termination when the mother ceases to nurse it. Nevertheless, M. Livon seems to entertain the idea that perhaps, after all, it is bad hygienic conditions, rather than tobacco itself, that give rise to the infant mortality. The matter certainly seems to call for further investigation.

ROENTGEN PICTURES FOR ANATOMICAL PURPOSES.

Remarks on the Value of Radiographs as Zoological Illustrations is the title of an interesting article by Mr. Charles H. Townsend, director of the New York Aquarium, published in the *Tenth Annual Report of the New York Zoological Society*. It is illustrated with Röntgen pictures made by Dr. Henry G. Piffard. They show in admirable clearness of detail the interior structure of various animal forms, largely fishes and reptiles. Such pictures are possessed of even greater accuracy than that of corrosion preparations, and they have the additional advantage of showing the precise relations of the skeleton to the general configuration of the soft parts which the bones sustain. We have before called attention to the usefulness of such pictures in the teaching of human anatomy, and something has been done in realization of the aid they are calculated to render. We are convinced that their more extensive employment would prove very advantageous.

SEASICKNESS AND THE THYREOID GLAND.

An acute swelling of the thyreoid gland, of a temporary nature, has been observed by Rosenfeld to follow severe seasickness (*Deutsche medizinische Wochenschrift*, 1906, No. 5; *Berliner klinische Wochenschrift*, March 26th). Perhaps it was due to the efforts of vomiting, as the same result has been known to follow the bearing down pains of parturition, severe fits of coughing, and the like.

THE TWO CONFEDERATIONS OF EXAMINING BOARDS.

It certainly tends to confusion that there should be in existence two organizations with such similar names as the National Confederation of State Medical Examining and Licensing Boards and the American Confederation of State Medical Examining and Licensing Boards. In our article entitled Interstate Reciprocity in Licensing, published last week, we correctly stated that it was from the latter body that the Illinois State Board of Health had withdrawn, but in our remarks we failed to remember the distinction between the two bodies.

News Items.

NEW YORK CITY AND STATE.

Change of Address.—Dr. A. Fishman, to 239 East Eighteenth Street, near Second Avenue.

Personal.—Dr. Samuel Hendrickson has resigned from the medical staff of St. Mary's Hospital, Jamaica, N. Y., of which he had been a member since its organization in 1902.

New Building for a Training School for Nurses at Bellevue Hospital.—Among the appropriations passed by the board of aldermen, on July 10th, was one of $628,000, for a training school for nurses at Bellevue Hospital.

Charitable Bequests.—By the will of the late George J. Laighton, of Brooklyn, the Brooklyn Home for Consumptives receives $5,000 for the endowment of a bed to the memory of the wife of the testator.

The Vanderbilt Clinic.—Plans have been filed for enlarging and remodeling the laboratory of the Vanderbilt Clinic of the College of Physicians and Surgeons, on Tenth Avenue near Sixtieth Street, which clinic was a gift of the late William K. Vanderbilt to Columbia University. The improvements are designed to double the present size of the laboratory.

Lake Keuka (N. Y.) Medical and Surgical Association.—At the seventh annual meeting, held at Grove Springs, Lake Keuka, on July 5th, 6th, and 7th, the election of officers resulted as follows: President, Dr. J. E. Walker, of Hornellsville; vice-president, Dr. F. Driesbach, of Dansville; secretary and treasurer, Dr. H. B. Nichols, of Pulteney. The programme for this meeting was printed in our issue for June 30th.

The Medical Society of the County of Dutchess, N. Y.—The following programme was arranged for a quarterly meeting of this society, held at Poughkeepsie, on Wednesday, July 11: Streptococcic Sore Throat, Dr. D. B. Ward; The Specialist and the General Practitioner, Dr. L. C. Wood; Report of Five Cases of Intraabdominal Hæmorrhage, Operation, Recovery, Dr. J. E. Sadlier; Malignant Growths in the Neck, Dr. J. P. Grant; Eyestrain, a Cause of Nervous Symptoms, Dr. F. J. Mann.

St. John's Floating Hospital.—The hospital barge of St. John's Guild, the *Helen C. Juilliard,* began its work for the season on July 9th. Leaving the foot of East Twenty-fourth Street and landing at East Third and Market Streets, 250 mothers and children were collected for the trip down the bay. This hospital service for the benefit of the poor of the city will continue throughout the summer, mothers with babies and sick children receiving all the benefits of the institution for the asking. Several of the trips for the season have been named by persons contributing the amount of a day's expenses. There are many dates on the list of trips yet to be filled up with the names of donors.

The Centennial of the Medical Society of the County of Orange, N. Y., was celebrated at Goshen, on Monday, July 2nd, under the presidency of Dr. E. Ross Elliott, of Montgomery. An historical sketch of the society was given by Dr. John T. Howell, of Newburgh. Dr. V. P. Gibney, of New York city, President of the First District Branch of the Medical Society of the State of New York, delivered an address which was largely on the life and character of Ephriam McDowell, the Kentucky surgeon, who, at about the time this society was organized, performed the first ovariotamy. The society was reorganized in conformity with the by laws of the State organization and the following officers were elected for the ensuing year: President, Dr. E. R. Elliott, Montgomery; vice-president, Dr. E. D. Woodhull, Monroe; secretary, Dr. M. A. Stivers, Middletown; treasurer, Dr. W. J. Carr, Newburgh. The committee of arrangements for the celebration consisted of Dr. T. D. Mills, Middletown; Dr. J. T. Howell, Newburgh; Dr. W. S. Gleason, Newburgh; Dr. W. L. Cuddeback, Port Jervis; Dr. C. W. Dennis, Goshen; Dr. J. W. Thompson, Goshen; Dr. E. G. Distler, Westtown; Dr. F. Fred. Pitts, Warwick; Dr. A. E. Adams, Newburgh; and the officers.

The Appointment of Insanity Experts.—The attention of the New York public has recently been attracted to the question of expert testimony as regards insanity in connection with the killing of Stanford White, the architect, by Harry Thaw. According to the newspapers nearly all the prominent alienists in the city have been engaged by the counsel on either one side or the other. A further impetus to the interest the public feels in this matter has been given by the disclosures of Martin J. Tighe, who on July 10th pleaded guilty to having murdered his wife. Tighe, after pleading guilty, confessed that he had tricked a commission of insanity experts and succeeded by this means in having himself sent to an asylum for the criminally insane at Matteawan. In a series of interviews published in the daily press several leading lawyers and alienists have warmly advocated a complete change in the methods of introducing experts, not only in cases involving questions of sanity, but in all cases involving expert evidence. The general consensus of opinion seems to favor the creation of a board of State experts retained by the State, who can be consulted by trial judges, and whose evidence will not be subject to the charge of bias, since they are not retained by the prosecution or by the defence, but occupy a wholly neutral position.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending July 7, 1906:

	July 7.		June 30.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	45	10	39	14
Smallpox	..	..	3	
Varicella	28	..	59	..
Measles	370	19	440	12
Scarlet fever	103	6	110	9
Whooping cough	36	4	39	4
Diphtheria	220	27	242	30
Tuberculosis pulmonalis	343	161	362	180
Cerebrospinal meningitis	27	16	29	16
Totals	1,172	243	1,323	265

PHILADELPHIA AND THE MIDDLE STATES.

St. Mary's Hospital.—The annual commencement of the St. Mary's Hospital Training School for Nurses was held on July 1st, and diplomas were awarded to Misses May Haley, Anna Brady, and Anna Murphy.

Auto-Ambulance for the Philadelphia Hospital.—A steam automobile ambulance has been ordered for the Philadelphia Hospital. The machine will be fitted out with complete electric lighting and all medical and surgical supplies. The cost will be about $3,200.

Fourth of July Warnings.—All the papers have lately contained warnings from Dr. Coplin as to the proper attention to any injury occurring from fireworks, together with remarks upon the frequency of tetanus following these burns. All hospitals were in readiness for the unfortunates, and with great need, for the number of injuries reported this year exceeded that of last year.

The Cumberland County (N. J.) Medical Society held its regular quarterly meeting at Millville on July 10th. Dr. E. S. Corson, of Bridgeton, read an excellent paper on the subject, Cooperation Wins, illustrating the business methods by which physicians can be mutually serviceable to each other. An interesting paper was also read by Dr. Tomlinson on Public Hygiene and Legislation. A spirited discussion followed the reading of each paper.

Sanitation of Philadelphia's Meat and Produce Establishments.—The laws which are supposed to control the food supply have been found inadequate and do not supply sufficient authority to carry them out. Many have been in existence for a long time but have not been enforced. Director Coplin will see that adequate laws are passed and that the markets and wholesale places are kept in hygienic conditions. Director Coplin, in view of the vigorous campaign being waged, has asked the mayor for an increase in his force of twenty inspectors. The old market on Second Street, which has been in use for half a century, has been condemned, and will be destroyed. Dr. Coplin has also interested himself in the condition of the public telephone booths, which he considers may be a factor in transmitting disease.

A Crusade Against Tuberculosis has been inaugurated at Wilkes Barre, Pennsylvania, by the forming of a society, to be known as the Wyoming Valley Society for the Prevention of Tuberculosis, and it was decided to open a dispensary on July 13th. A number of local physicians have volunteered to assist in the dispensary, a trained nurse will be employed, and the chief work will be in educating the people to means of preventing the disease. The officers of

the society are: President, Mayor Irving A. Stearns; vice-presidents, General C. Bow Dougherty and R. P. Brodhead; secretary, Dr. Charles H. Miner; treasurer, W. H. Conyngham. The directors are: J. C. Brader, Nanticoke; R. P. Brodhead, Kingston; W. H. Conyngham, General C. Bow Dougherty, J. A. Goldsmith, Dr. F. C. Johnson, Mayor Irving A. Stearns, Fred. J. Stegmaier, Dr. W. S. Stewart, of Wilkes Barre; R. M. Hughes, Pittston; Dr. C. P. Knapp, Wyoming; Ambrose West, Plymouth; Martin J. Walsh, Palins.

Health of Philadelphia.—During the week ending June 30th, the following cases of transmissible diseases were reported to the bureau of health:

	Cases.	Deaths.
Malaria	1	0
Typhoid fever	99	11
Scarlet fever	22	0
Chickenpox	13	0
Diphtheria	54	3
Measles	59	2
Whooping cough	78	11
Tuberculosis of the lungs	86	63
Pneumonia	37	26
Erysipelas	6	0
Puerperal fever	1	1
German measles	1	0
Tetanus	1	1
Mumps	7	0
Cancer	31	21

The following deaths from transmissible diseases were reported: Tuberculosis, other than tuberculosis of the lungs, 8; dysentery, 1; diarrhœa and enteritis, under two years of age, 83. The entire number of deaths amounted to 503, which would mean an annual death rate of 17.80 in 1,000 of population in an estimated population of 1,469,126. The infant mortality was 174, under one year of age, 135; between one and two years of age, 39. There were 36 still births, 15 males and 21 females. The temperature was unusually high, especially toward the end of the week, but despite the fact that the air seemed close the relative humidity was low. Typhoid fever is on the decrease, and has not reached so low a figure in two years.

BOSTON AND NEW ENGLAND.

Bequest to the Cambridge, Mass., Hospital.—By the will of the late Henry C. Houghton, the Cambridge Hospital receives $2,500.

A Memorial Fund.—By the will of Samuel W. Rodman, of Burlington, Massachusetts, $3,000 is left to St. Luke's Hospital for Convalescents in Roxbury, to be known as the Emma Rodman Memorial Fund.

The Centre District and Merrimack County (N. H.) Medical Society.—By invitation of the management of the Margaret Pillsbury Hospital, at Concord, this society held a meeting at the hospital on Tuesday, July 10th. An inspection of the building and apparatus was followed by a collation. The literary exercises consisted of an informal postprandial talk upon the theme: The Practice of Medicine; Its Future as a Business. Each member of the society was asked to contribute of his ideas upon the subject.

The Mortality of Boston.—The number of deaths reported to the board of health for the week ending July 7th, was 168, as against 183 the corresponding week last year, showing a decrease of 15 deaths, and making the death rate for the week 14.55. The number of cases and deaths from infectious diseases was as follows: Diphtheria, 28 cases, 2 deaths; scarlatina, 13 cases, no deaths; typhoid fever, 7 cases, 1 death; measles, 46 cases, 1 death; tuberculosis, 37 cases, 17 deaths; smallpox, no cases, no deaths. The deaths from pneumonia were 9, whooping cough 3, heart disease 16, bronchitis 2, marasmus 3. There were 13 deaths from violent causes. The number of children who died under one year of age was 35, under five years of age 49, persons over sixty years of age 32, deaths in public institutions 57.

The Harvard Medical School.—The desire of many members of the faculty of Harvard College to have the newer methods of teaching represented on the faculty has resulted in the appointment of eleven instructors in the Harvard Medical School as members of the faculty for three year terms. The appointments approved are: Dr. Carl L. Alsberg, instructor in biological chemistry; Dr. J. Bapst Blake, instructor in surgery; Dr. Richard C. Cabot, instructor in clinical medicine; Dr. Elbridge G. Cutler, instructor in the theory and practice of physic; Dr. Henry Jackson, instructor in clinical medicine; Dr. Howard A. Lathrop, instructor in surgery; Dr. James G. Mumford, instructor in surgery; Dr. Charles A. Porter, instructor in surgery; Dr. Edward W. Taylor, instructor in neurology; Dr. Herman F. Vickery, instructor in clinical medicine; Dr. James H. Wright, instructor in pathology. Most of the above named instructors have been on the teaching staff of the school for some years, but not being members of the faculty have had no voice in the management of the school. Ordinarily a man must reach the grade of at least associate professor or demonstrator in anatomy before he has a voice in the school government. The new system of intensive education was begun in Harvard in 1899, and it was the aim of the faculty to secure men who were in sympathy with this system and who had full knowledge of it. Naturally in order to secure men who had come under its influence they must be young men, and these instructors are all young.

The New Boston Floating Hospital.—On Saturday, July 7th, the new boat, the *Boston Floating Hospital,* was launched. The boat is thus described by the *Boston Transcript:* "She is not a heavy craft. Her length is 171 feet and her beam 44 feet. Her hull is of steel and the superstructure of wood, showing three decks above the hull, two of which are enclosed. These enclosed decks will provide the permanent wards and other departments of the hospital work, while the upper deck, canvas covered, will afford quarters for the day wards and for mothers who accompany children on the boat. In addition to the hospital deck, out patients' deck, and main deck, there is also a pilot deck. The hull is provided with seven watertight compartments and the boat is amply supplied with apparatus for use in case of fire. Eventually, or by another year, the boat will be a twin screw propeller, but this equipment will not be installed this year because it is thought to be more desirable to put her into service as soon as possible and not await the delay which would be necessary to make her self propelling this year. She will be taken out under tow, therefore, just as the steamer *Clifford,* the old hospital boat, always has been operated. The boat is heated by steam and cooled by a refrigerating apparatus. The heating system has been so planned that it may be extended economically in event of the boat ever being needed for winter work. The system of ventilation installed is the best possible to be had and thoroughly up to date for its intended purposes."

BALTIMORE AND THE SOUTH.

Change of Address.—Dr. W. P. Lewis, of Topeka, Kansas, to 735 Kansas Avenue.

The Memphis and Shelby County (Tenn.) Medical Society.—The programme for a meeting held at Memphis, on Tuesday, July 10th, included the following papers: Difficulties in Diagnosticating Acute Throat Troubles, by Dr. J. L. Andrews; The Treatment of Some of the Common Forms of Skin Disease, by Dr. Robert G. Henderson.

The Richmond (Va.) Academy of Medicine and Surgery.—The following programme was presented at a meeting held on Tuesday, July 10th: The Lingual Tonsil, Dr. John P. Davidson; Two Cases Showing the Value of the Ophthalmoscope in the Diagnosis of Brain Lesions, Dr. John Dunn.

The Aiken County (S. C.) Medical Society held a meeting at Aiken, on July 3rd. The subject for discussion was: The Relation Between the Doctor and the Druggist. Papers on the subject were read by Dr. H. H. Wyman, Sr., Dr. W. C. R. Turnbull, and Dr. T. G. Croft. The discussion was participated in by several of the local druggists.

The Chatham County (Ga.) Medical Society held its midsummer meeting at Tybee, on Monday, July 2nd. The programme for the occasion included the following titles: Medicine of To-day and Its Promise for To-morrow, Dr. T. J. Charlton, of Savannah; Undiagnosticated Cases, Dr. J. W. Palmer, of Ailey; Infections by Bacillus Ærogenes Capsulatus, Dr. George R. White, of Savannah; The Vaginal Route for the Correction of Certain Malpositions of the Uterus, Dr. T. P. Waring, of Savannah; Treatment of Typhoid Fever, Dr. M. X. Corbin, of Savannah.

Personal.—Dr. Albert A. Tennant, of Richmond, Va., has been appointed first assistant surgeon to the Richmond Hospital.

Dr. Thomas Hunt Stucky, of Louisville, Ky., has resigned the chair of the Principles and Practice of Medicine in the Hospital College of Medicine. The resignation carries with it the surrender of his place as head of the Graystreet Infirmary, an institution allied to the medical school. Dr.

Stucky has been a member of the faculty of the college for twenty-four years. Dr. Walter F. Boggess has been appointed to the chair made vacant by the resignation of Dr. Stucky. Dr. Boggess has been connected with the various medical schools of Louisville for the past sixteen years. He began as assistant to the late Dr. John Galt, at the Louisville Medical College. From there he was called to the Kentucky School of Medicine, where he filled the chair of internal medicine and diseases of children for seven or eight years.

The health commission of Baltimore announced the appointment, on July 2nd, of Dr. W. Guy Townsend, as health warden for the Twelfth ward, to succeed Dr. Thomas L. Richardson, recently promoted to the position of quarantine physician. Dr. Townsend was connected with the department during the administration of Mayor Malster. He is chief surgeon of the Fourth Regiment, Maryland National Guard, with the rank of major.

Resume of Report of the Library of the University of Maryland School of Medicine for the Year Ending June 1, 1906.—Dr. Eugene F. Cordell, Honorary Professor of the History of Medicine, and Librarian, has kindly furnished us with the following *résumé:* The library was founded in 1813. It is connected with the Department of the History of Medicine, its director being the professor of that chair. Total number of volumes, 6,280; number added during year, 1,080; total catalogued, 5,626; number of journals regularly received, 46; total pamphlets, 4,200; number added during year, 200; pictures added, 5; number of registered members, 120; books borrowed, 88; books, etc., consulted, 800; balance on hand, $37.13; total receipts, $89.17; library hours for distribution, 12 to 2. The library is open throughout the year to *all* readers. There is no fee for members of the university, including students. The privileges of borrowing are secured by outsiders by a fee of $2 for active membership. Honorary membership is $5. The largest gift during the year was the Miltenberger collection (late Professor Miltenberger) of 949 volumes, many of great value. Pamphlets were received from Dr. Keen, Dr. Jacobi, Dr. Stokes, Dr. Tiffany, Dr. Caspari, Dr. Kelly, and others.

The Mortality of Baltimore for the Month of June, 1906.—The monthly report of the health department for June, issued by the Health Commissioner on July 2nd, shows a total of 739 deaths. Of this number, 257 were of children under five years of age, being 34.80 per cent. of the whole number of deaths. There were 291 of white males, 238 white females, 101 colored males, and 109 colored females. For the same month of 1903 there were 707 deaths, 774 for 1904, and 878 for 1905. The following infectious and contagious diseases were reported, as compared with the corresponding month of last year:

	1905.	1906.		1905.	1906.
Diphtheria and croup	55	58	Whooping cough	43	39
Scarlet fever	45	35	Varicella (chicken-pox)	14	14
Typhoid fever	37	88	Tuberculosis	73	65
Measles	330	115			
Mumps	1	4	Totals	598	418

The following were the principal causes of death:

	1905.	1906.		1905.	1906.
Typhoid fever	3	5	Lockjaw	2	4
Malarial fever	4	1	Heart diseases	62	70
Measles	17	1	Bronchitis	12	7
Scarlet fever	3	6	Pneumonia	51	36
Whooping cough	5	8	Diarrhœa and enteritis under 2 years of age	108	70
Diphtheria and croup	4	6	Diarrhœa and enteritis over 2 years of age	6	6
Influenza	1	..	Bright's disease	67	53
Dysentery	2	..	Puerperal septicæmia	6	5
Erysipelas	1	3	Old age	14	10
Blood poisoning	..	4	Suicides	9	5
Consumption	106	92	Accidents	42	42
Other tuberculous diseases	24	16	Homicides	..	2
Cancers	36	30			
Congestion of the brain (apoplexy)	22	27			

CHICAGO AND THE WEST.

Physicians Registered in Minnesota.—At the June examinations of the Minnesota State Board of Medical Examiners there were sixty-five applicants for registration, of whom fifty-six were successful. All the applicants save one graduated within the last two years.

The Illinois State Board of Health.—In a letter received too late for publication under its proper head, in this issue, the secretary, Dr. James A. Egan, says: "Permit me to say a few words in regard to the editorial on 'Interstate Reciprocity in Licensing,' which appeared in your *Journal* of July 7th. As to the resolution of the Illinois State Board of Health concerning the licensing of medical officers of the United States Army, Navy, and Public Health Service, without examination, it is true that the Illinois State Board of Health makes it a condition of such licensure that the applicant show evidence of having taken an examination for admission to the public service at least equivalent to that exacted by the rules of the Illinois board. This is a requirement placed upon the licentiates of all sister States with which reciprocal relations are maintained, and I know of no legitimate reason why it should not apply to any other class or classes of physicians applying for licenses. However high the standards of the medical departments of the government service may now be, they are not unalterable, and it is only so long as these requirements of the service have been or remain at least equivalent to those of the Illinois State Board of Health that the provisions of this resolution could be operative.

"In connection with the resolution which provides for evidence of good moral and professional character of those who seek Illinois certificates under reciprocity, it is obvious that, while the examining board which originally licensed such applicant can properly certify as to his educational attainments, as shown by examination, and as to his good moral character at the time of his examination, it is seldom in a position to certify as to the professional reputation attained in his subsequent professional career. The medical student who bore a high reputation a few years ago, is not necessarily the physician of the highest degree of reputability to-day. The Illinois State Board of Health properly desires evidence of good professional standing maintained subsequent to original licensure in another State, before it is willing to license an applicant through reciprocity.

"The Illinois State Board of Health has constantly stood for 'reciprocity without any ifs and ands,' and that sentiment incidentally gave origin to the third resolution with which your editorial deals—the declaration that, after January 1, 1907, Illinois will not reciprocate with those States which require supplemental examinations of Illinois licentiates, or which require that licentiates of other States shall have practised for one year or more in the States in which they were licensed before becoming eligible to certificates under reciprocity.

"The action of the Illinois State Board of Health in withdrawing from the American Confederation of Reciprocating, Examining, and Licensing Medical Boards, was a matter of necessity. The board could not subscribe to one of the qualifications of the confederation and would not subscribe to the other as it stands, and under these conditions could not consistently retain membership in the organization. The Illinois State Board of Health has not, however, severed its connections with the national organization of examining and licensing boards, retaining, as it does, an active membership in the National Confederation of State Medical Examining and Licensing Boards."

Statement of Mortality in Chicago for the Week Ending June 30, 1906, compared with the preceding week, and with the corresponding week of 1905. Death rates computed on United States Census Bureau's figures of midyear population—2,049,185 for 1906, and 1,990,750 for 1905:

	June 30, 1906.	June 23, 1906.	July 1, 1905.
Total deaths, all causes	476	423	439
Annual death rate in 1,000	12.11	10.76	11.49
Sexes—			
Males	293	238	267
Females	183	185	172
Ages—			
Under 1 year of age	89	60	75
Between 1 and 5 years of age	51	33	48
Between 5 and 20 years of age	46	36	30
Between 20 and 60 years of age	195	214	196
Over 60 years of age	95	80	90
Important causes of death—			
Apoplexy	12	6	14
Bright's disease	49	36	44
Bronchitis	9	6	10
Consumption	46	54	57
Cancer	21	23	17
Convulsions	6	1	6
Diphtheria	3	5	11
Heart diseases	30	41	30
Insolation	1	1	0
Intestinal diseases, acute	29	20	24
Measles	5	2	7
Nervous diseases	16	19	19
Pneumonia	52	57	41
Scarlet fever	19	11	3

Suicide	10	6	4
Typhoid fever	7	4	6
Violence (other than suicide)	42	32	46
Whooping cough	1	3	9
All other causes	118	95	92

Statement of mortality in Chicago, for the week ending July 7, 1906, compared with the preceding week, and with the corresponding week of 1905. Death rates computed on United States Census Bureau's figures of midyear population—2,049,185 for 1906, and 1,990,750 for 1905:

	July 7. 1906.	June 30. 1906.	July 8. 1905.
Total deaths, all causes	471	476	420
Annual death rate in 1,000	11.98	12.11	11.00
Sexes—			
Males	272	293	239
Females	199	183	181
Ages—			
Under 1 year of age	99	89	79
Between 1 and 5 years of age	34	51	34
Between 5 and 20 years of age	34	46	41
Between 20 and 60 years of age	199	195	199
Over 60 years of age	105	95	67
Important causes of death—			
Apoplexy	12	12	5
Bright's disease	41	49	45
Bronchitis	11	9	4
Consumption	50	46	58
Cancer	27	21	26
Convulsions	6	6	7
Diphtheria	5	3	2
Heart diseases	34	30	39
Intestinal diseases, acute	56	29	38
Insolation	2	1	0
Measles	5	5	3
Nervous diseases	17	16	22
Pneumonia	32	52	26
Scarlet fever	10	19	1
Smallpox	0	0	4
Suicide	7	10	7
Typhoid fever	5	7	6
Violence (other than suicide)	36	42	33
Whooping cough	3	1	9
All other causes	112	118	85

GENERAL.

The British Medical Association.—The 1906 annual meeting of this association will be held at Toronto, Ontario, on August 21st, 22nd, 23rd, and 24th. This will be the second time within a few years that this great medical body has crossed the Atlantic in order to bring the parent body in closer touch with its Canadian members.

The Bureau of Public Health and Marine Hospital Service makes the following announcement: A board of officers will be convened to meet at the Bureau of Public Health and Marine Hospital Service, 3 B Street, S. E., Washington, D. C., Monday, August 6, 1906, at 10 o'clock a. m., for the purpose of examining candidates for admission to the grade of assistant surgeon in the Public Health and Marine Hospital Service. Candidates must be between twenty-two and thirty years of age, graduates of a reputable medical college, and must furnish testimonials from responsible persons as to their professional and moral character. The following is the usual order of the examinations: 1, Physical; 2, Oral; 3, Written; 4, Clinical. In addition to the physical examination, candidates are required to certify that they believe themselves free from any ailment which would disqualify them for service in any climate. The examinations are chiefly in writing, and begin with a short autobiography of the candidate. The remainder of the written exercise consists in examination on the various branches of medicine, surgery, and hygiene. The oral examination includes subjects of preliminary education, history, literature, and natural sciences. The clinical examination is conducted at a hospital, and when practicable, candidates are required to perform surgical operations on a cadaver. Successful candidates will be numbered according to their attainments on examination, and will be commissioned in the same order as vacancies occur. Upon appointment the young officers are, as a rule, first assigned to duty at one of the large hospitals, as at Boston, New York, New Orleans, Chicago, or San Francisco. After five years' service, assistant surgeons are entitled to examination for promotion to the grade of passed assistant surgeon. Promotion to the grade of surgeon is made according to seniority, and after due examination as vacancies occur in that grade. Assistant surgeons receive $1,600; passed assistant surgeons, $2,000; and surgeons, $2,500 a year. When quarters are not provided commutation at the rate of $30, $40, and $50 a month, according to grade, is allowed. All grades above that of assistant surgeon receive longevity pay, 10 *per centum* in addition to the regular salary for every five years' service up to 40 *per centum* after twenty years' service. The tenure of office is permanent. Officers traveling under orders are allowed actual expenses. For further information, or for invitation to appear before the board of examiners, address the Surgeon General, Public Health and Marine Hospital Service, Washington, D. C.

The Medical Officer in the British Army.—Sir Frederick Treves, physician to King Edward, who has done much to bring about the reform in the personnel and equipment of the British Army Medical Service, says that the following reforms are necessary: "1. The head of the Army Medical Department should be a medical man. At present, strange to say, the head of that department is the adjutant general.

"2. The director general of the Army Medical Department should be responsible for its efficiency and economical administration in all its branches, and should have control of the money voted for the medical service.

"3. The army medical officer should be vested with such authority and provided with such personnel as will enable him to carry out those sanitary arrangements in the field which experience has proved to be absolutely essential to secure the minimum loss of life from disease.

"4. The combatant officer should have as a part of his qualifications some knowledge of hygiene as applied to campaigning and barrack life; and a like knowledge of a more elementary character should be possessed by the private soldier.

"Except for some increase in personnel these reforms involve no increased expenditure. At present the medical department mobilizes—in time of war—for 10 per cent. of sick. Under the conditions named above, it would be possible to enter upon a campaign with a provision for only 7 per cent. of sick, or in time for even less. This would involve not only a great saving of money, but a great saving of life."

In writing to the *London Times* on the same subject, Mr. St. John Broderick says that as recently reorganized the British Army Medical Corps is the equal in personnel and equipment of any similar body in the world. He says further that "the army medical officer is placed in a profoundly unsatisfactory position. In a campaign he is as heavily worked as any staff officer. He has all the organization of hospitals and of the machinery of healing under his charge. He is a health officer, but he has no sanitary staff. He is responsible, but he can give no orders. He can only act through a commanding officer, often junior to him, who has no technical knowledge. How can it be expected that in war, where every officer has his allotted task and the weight of responsibility is very heavy, executive sanitary functions which require constant and unremitting attention will be effectively performed if they are 'thrown in' with a number of other duties? We go to war with an establishment of sixteen per battalion allotted as stretcher bearers for the relief of the wounded. Many medical officers would dispense with half this humanitarian establishment, if they could obtain, in lieu of it, eight men to be trained as sanitary inspectors, refuse burners, disinfectors, and the like. If this be held to be an extravagant suggestion, be it remembered that for every man wounded, twenty sick men are brought to hospital largely from preventible causes. The unopposed crossing of the Modder river lost us from typhoid far more men than the battle of Colenso from wounds.

"One remedy is simple. Why should not the admirable body of army medical officers who have made sanitary conditions a study educate combatant officers in the elements of military hygiene? Every cadet at Sandhurst or Woolwich should be examined on passing out in a problem which he should grasp as easily as tactics or stategy, since upon it the fighting strength by which he is to win his battles depends. A captain before promotion to major might be encouraged to get a special certificate which would excuse him from all such training at the Staff College. Can one officer in a hundred test water, and decide whether it is drinkable?"

Pith of Current Literature.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

July 5, 1906.

1. Principles of Feeding in Typhoid and in Other Fevers, By FRANCIS P. KINNICUTT.
2. The Heart in the Puerperium, By HENRY JACKSON.
3. Tuberculin in Treatment of Pulmonary Tuberculosis, By WALTER A. GRIFFIN.

1. Principles of Feeding in Typhoid and in Other Fevers.—Kinnicutt states that there are at present two methods of feeding in vogue in typhoid fever: The fluid diet, consisting mainly of milk; and, a mixed diet, in part solid. The author gives the dietary prescribed by Shattuck in the Massachusetts General Hospital; of Marsden, used in the Monsall Hospital in England; of Bushuyev, used in the Kief Military Hospital, Russia. A literature of the methods employed by other clinicians are spoken of, and Kinnicutt finally concludes that the statistics seem to point out that intestinal accidents, hæmorrhage, and perforation are less frequent under a mixed, soft, and solid diet than under the restricted fluid diet, consisting mainly of milk. The statistics for relapses, intercurrent and ordinary, seem to point to the view generally entertained at the present day that diet probably has little influence in their causation. The author believes that the influence of diet in causing simple recrudescence of fever is a real one, but due rather to abrupt changes in diet than to its quality, and he pleads for a different dietetic management of typhoid fever, which should be adapted to the individual case, and based upon the recognition, (1) that, while the digestive function in many cases of the disease is unquestionably seriously impaired, frequently the impairment is not a material one; (2) that a clean tongue, a true appetite, hunger, should be accepted as guides for the cautious employment of a more generous diet; and (3) that the individual rather than the disease is to be considered and treated.

2. The Heart in the Puerperium.—Jackson reports a case of acute and fatal dilatation of the heart in the puerperium, without septic infection, and without demonstrable cause, except the effect of labor upon a heart which previously was not absolutely sound, though no previous examination had suggested valvular disease.

3. Tuberculin Treatment of Pulmonary Tuberculosis.—Griffin thinks that patients will do as well or better by receiving rather moderate doses of tuberculin, and since after treatment has stopped for a while it cannot be renewed, except by starting in with small doses, it may be best to give more than one course of treatment, each lasting some months, and with months of intermission.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

July 7, 1906.

1. Uniocular Inflammations of the Optic Nerve and Retina, By ALVIN A. HUBBELL.
2. The Relation of Nerve Impulse to Cutaneous Inflammation, By ERNEST L. MCEWEN.
3. Personal Experience in Preventing Spread of Yellow Fever, By R. H. VON EZDORF.
4. Gastric Ulcer: Some Special Features; Based on the Study of One Hundred Specimens, By MALCOLM G. MACNEVIN and FREDERICK C. HERRICK.
5. Lesions Predisposing to Cancer, By M. B. HUTCHINS.
6. The Injuries of Independence Day, and What Has Been Accomplished in Baltimore Toward Lessening Them. A Further Contribution to the Subject, By ROBERT L. RANDOLPH.
7. Dislocation of the Outer End of the Clavicle, By CHARLES L. SCUDDER.
8. Surgical Treatment of Congenital Hydrocephalus. Report of a Case of Meningocele and Hydrocephalus, By J. SHELTON HORSLEY.
9. The Reflexes of Dentition, By CHARLES HUNTER DUNN.
10. The Relation of the Medical Profession to the Social Evil, By ROBERT N. WILLSON.
11. The Study of Rocky Mountain Spotted Fever (Tick Fever?) by Means of Animal Inoculations; A Preliminary Communication, By H. T. RICKETTS.
12. Rocky Mountain or Spotted Fever, By HARRY N. MAYO.

1. Uniocular Inflammations of the Optic Nerve and Retina.—Hubbell says that ophthalmological textbooks are nearly or quite silent in regard to uniocular inflammation of either the optic nerve or retina, and the cases reported in ophthalmological literature are not numerous. He describes his own clinical observations which extend over fifteen years and include eighteen cases. The history of the cases is then given, they are arranged in three classes: Uniocular optic neuritis, uniocular neuroretinitis, uniocular retinitis. From these cases it will be seen that it is difficult to place any ætiological relation between these inflammations and any other specific disease. One sided nephritis was present in one case; more or less arteriosclerosis existed in five patients, two of whom also had albuminuria, valvular disease of the heart, together with a previous cerebral hæmorrhage was found in one, while the rest of the eighteen were classed as healthy and without cerebral, vascular, or kidney disease. The treatment he used has almost invariably been the administration of potassium iodide. It was beneficial in some, while it seemed to be of no benefit to other patients.

2. The Relation of Nerve Impulse to Cutaneous Inflammation.—McEwen speaks of the relation of the nervous system to cutaneous inflammation. The idea that nerve impulse alone can initiate inflammation is widespread in dermatology and forms the basis of the explanation of the pathogenesis in several conditions. Reflex action is the form of nerve influence most frequently set forth as the originator of inflammation. Such a reflex requires for its production two kinds of nerve fibre, sensory and motor, together with a receiving centre, and a stimulus applied at a sensory termination. When completed, inflammation is a complex, representing the following stages: Dilatation of the bloodvessels, slowing of blood stream, margination of leucocytes, diapedesis of cellular and fluid constituents of the blood, with formation of an exudate, and proliferation of fixed tissue elements. Direct motor impulse can produce dilatation of the bloodvessels and secretion of fluid by the endothelium; but it has no direct relation to the migration of leucocytes and proliferative tissue changes, and hence it is not alone sufficient to produce inflammation. The factor necessary to supplement nerve action must embody the requirements of chemotaxis. This is found in external irritation, and of the four sources of irritation, the chemical is here only of importance. The products arising from the degeneration or destruction of protoplasma may be toxic to living cells, and so furnish the chemical irritation. And this seems to be the *modus operandi* in the various forms of herpes.

4. Gastric Ulcer.—MacNevin and Herrick studied one hundred pathological specimens of gastric ulcer, of which eighty-two were chronic, thirteen acute, and five could not be determined. They found that seventy-three and three tenths per cent. occurred on the lesser curvature or posterior surface. The stomach rotation during digestion, and the adhesions are partial explanation of this fact. Ulcers or scars were symmetrically placed on the anterior and posterior walls in thirty-seven per cent. Fibrin shreds were found in seventy-four per cent. on the peritoneal surface of simple ulcers. Males with gastric ulceration die most commonly after thirty years of age from hæmorrhage; females before thirty of perforation and peritonitis.

5. Lesions Predisposing to Cancer.—Hutchins discusses the various lesions which may produce cancer, such as the rough, horny, scale crusted, irregular points

and patches, varying from pinhead to all sizes and shapes, and seen on the face, neck, and hands; the oily seborrhœic skin with points, discs, or patches, developing in a greasy surface, erosions, new growth, finally full epithelioma; warty, flat roughened patches, as of the senile skin; a persistent fissure of the lip; scars as from burns, cosmetics, x rays, incisions, boils, carbuncles; lupus erythematosus, or vulgaris may degenerate into cancer; malignant freckle spot on foot or leg; suppurative, broken down cysts may be transformed into cancer; a small injury of the tongue from a jagged tooth, and continued irritation; constant irritation from a tonsillary, pharyngeal, or œsophageal lesion may terminate in cancer; finally, ulcer of the stomach; erosions of the gallbladder, ovarian cysts; adenoma of the breast; etc. It is often impossible to diagnosticate the type of these growths accurately without the aid of the microscope. Early and free surgical removal offers the only cure.

7. **Dislocation of the Outer End of the Clavicle.**—Scudder says that while ordinarily dislocation of the outer end of the clavicle is readily treated by pads and simple retentive apparatus, at times it is impossible either to reduce the dislocation completely or to hold it reduced. He records two cases and three experiments made on the shoulders of the cadaver. From these observations and from some fifteen operations recorded in the literature he thinks that indications for operative interference are irreducibility and a failure to maintain reduction. If the retentive apparatus does not hold cases of the first class, thin suture should be employed. The best position for the patient would be on his back.

8. **Surgical Treatment of Congenital Hydrocephalus.**—Horsley is of the opinion that hydrocephalus is due primarily to an excessive secretion from the ventricles of the brain rather than to an obstruction to the outflow of fluid from them. In the matter of surgical treatment the successes have been so few and failures so many that no definite conclusions can be drawn. Aspiration of the fluid has occasionally given excellent results; cases have been reported of actual cures. But the method that appears to offer the best prospect of success in these cases is some form of permanent drainage, especially continuous direct drainage, through some slightly antiseptic material, such as a malleable silver tube, followed after the secretion of fluid has markedly decreased by a permanent fistula between the ventricle and the subarachnoid space.

11, 12. **Rocky Mountain or Spotted Fever.**—Mayo defines Rocky Mountain or spotted fever as an acute infectious disease characterized by a somewhat sudden onset, with purpura hæmorrhagica, terminating by lysis in from two to seven weeks. The disease is also known as tick fever, and occurs also in Montana, Idaho, and Wyoming, and seems to be more common along the course of the Snake River than elsewhere. Some attribute it to the bite of a tick, the men sleeping on the ground, thus exposing themselves; and it is found among bridge builders, carpenters, civil engineers, in short among men employed in building bridges, railroads, canals, etc. The general treatment should be in accordance with symptoms presented; the constipation should be combatted, elimination by the skin, kidneys, and bowels should be promoted. Hydrotherapy should be employed in the same way as in typhoid fever, and nutrition should be kept up. The alimentary canal does not seem to be crippled in this disease as in typhoid or the spotted fever of the cerebrospinal meningitis type. Spotted fever begins in April, and continues through the summer. It is during the early days of April that the tick begins to manifest itself. Ricketts reports his experiments on animals, made in the study of this spotted fever. It was transmitted to guinea pigs and also to a monkey, while white rats and mice remained immune. Ricketts thinks that it is an actual infection rather than a transferred intoxication, because it can be passed through the second generation of animals, and because the filtered serum, which would certainly contain any soluble toxines which might be present, causes no disturbance. The tropical tick fever goes to show that ticks may harbor and transmit pathogenic parasites; and this may be also the case with the Rocky Mountain fever.

MEDICAL RECORD.

July 7, 1906.

1. The Fresh Air Treatment of Acute Respiratory Diseases, with Especial Reference to Pneumonia, By James M. Anders.
2. Independent Medical Journalism a Necessity for the Profession, By Kenneth W. Millican.
3. Infections by the Bacterium Coli Commune, with Particular Reference to the Urinary Tract, By Clarence A. McWilliams.
4. Albuminuria: Recognition of the Albumin Bodies in Urine, By T. W. Hastings.

1. **The Fresh Air Treatment of Acute Respiratory Diseases, with Especial Reference to Pneumonia.**—Anders says that briefly analyzed, the bracing and tonic effect of a steady cold is as follows: The principal influence exerted is that upon the nervous system; this is evidenced by its calming effect and the refreshing sleep induced thereby. The appetite and digestion noticeably share in the beneficial influences of this natural agency. In this connection it should not be forgotten that in the cold climate the system demands more nutritive material than in a warm one, or otherwise there will occur a loss of bodily weight. Fortunately, it is found that patients treated with fresh air can take more nourishment than those subjected to other methods, and readily assimilate it. Under the influence of low temperature the heart's action becomes slower and the pulse tension increased—a desirable object to be attained in the treatment of lobar pneumonia. Cold exerts a tonic influence upon the nerves and vessels in the skin, and indirectly it has an important effect in lessening the tendency to internal congestion. Again, cold acts potently in stimulating the respiratory function, and, as an immediate consequence, more oxygen is absorbed. It is obvious that an atmosphere containing the full complement of oxygen is demanded in pneumonia—a disease in which a large proportion of the air cells are rendered functionless. But the fresh air treatment should not be undertaken without due deliberation upon the peculiarities presented by the individual case. Thus, in certain forms of secondary pneumonia it might be inadvisable. In general terms it may be said that this measure is contraindicated in exceptional instances only. Among the particularly beneficial effects observed from the constant breathing of fresh, cool or cold air are a better general condition and increased strength, an improved appetite and digestion, refreshing sleep, lessened severity of the cough, diminished breathing rate, fever, and pulse rate; in short, a less marked toxæmia than in cases treated by the more usual methods. The nervous system, however, partakes largely in the general favorable effects.

3. **Infections by the Bacterium Coli Commune, with Particular Reference to the Urinary Tract.**—McWilliams reports a case of infection of the urinary tract by the bacterium coli commune. Bacteriuria due to the colon bacilli may be divided into two classes as to origin: 1. Ectogenous, or bacteriuria from external causes. This is always prostatic or vesical in origin, and is due to bladder infections, the use of the catheter or sounds, etc. It is usually benign, and has a good prognosis, therapy being necessarily directed only towards the local lesion. Occasionally we find the infection ascending into the pelves and kidneys, either unilaterally or bilaterally. 2. Endogenous, or bacteriuria from

internal causes. It differs totally from the preceding in that (*a*) the bacteria arise in some other part of the organism and pass into the urine; (*b*) their origin is oftentimes difficult to trace; (*c*) it is very rebellious to treatment because the primary focus must first be treated and cured before the bacteria can be eliminated from the urine. We, therefore, have frequently the following sequence of events: Prostatitis, cystitis, ureteritis, pyelitis, suppurative nephritis. From the kidneys the organism may pass into the general circulation and produce septicæmia or pyæmia. In treating urinary infections it will be admitted at once that we must make the urine as antiseptic as possible. Probably the best agent that we have is hexamethylenamine (urotropin). This when administered by the mouth is broken up into ammonia and formaldehyde gas, which latter is thus liberated in the urine, and to which its antiseptic properties are due. It is the author's opinion, however, that large enough doses are not ordinarily administered in urinary infections. A convenient way to administer it is to dissolve the total amount to be given in the twenty-four hours in a quart of water, and in this way whenever the patient takes a drink of water some of the remedy will necessarily be administered. If the urine be alkaline, it should be rendered acid by giving acid sodium phosphate, sodium benzoate, boracic or benzoic acids, and when the urine is acid, it is best to make it alkaline by administering sodium bicarbonate, or potassium citrate, acetate, or bitartrate (or all three in combination), because the urea decomposing organisms have their growths hindered by an excess of acid, while the microorganisms which retain the acidity of the urine, or render it still more acid, are inhibited in their growth by an alkaline condition of the urine. It must always be borne in mind that, if there be rebellious or recurring infections of the urinary tract, caused by absorption of colon bacilli as a result of enterocolitis, constipation, etc., there will be no cure of the urinary symptoms until the intestinal condition is overcome, to effect which a milk diet, intestinal antiseptics, colon lavage, etc., may be necessary.

4. **Albuminuria: Recognition of the Albumin Bodies in Urine.**—Hastings states that many of the albumin bodies which theoretically might occur in urine may be excluded from consideration for various reasons: serum albumin, nucleoalbumin, serum globulin, and Bence-Jones albumose should be considered. For purposes of excluding false reactions due to bacterial disintegration the urine should be examined within six hours after voiding, unless the reaction is massive. The most reliable test for serum albumin in urine is that of "salting" the urine with a saturated solution of "salt" (sodium chloride), acidulating with fifty per cent. acetic acid, and heating to boiling; this throws down all traces of serum albumin and prevents a nucleoalbumin reaction.

BRITISH MEDICAL JOURNAL.

June 23, 1906.

1. Remarks on the Meaning and Mechanism of Visceral Pain as Shown by the Study of Visceral and Other Sympathetic (Autonomic) Reflexes, By J. MACKENZIE.
2. Remarks on Chorea Considered as Cerebral Rheumatism, By Sir D. DUCKWORTH.
3. An Address on Dilatation and Hypertrophy of the Heart and Some Other Points in Cardiac Pathology, By S. WEST.
4. A Lecture on Congenital Heart Disease, By F. J. POYNTON.
5. Aortic Insufficiency, By S. TAYLOR.
6. Degeneration of the Myocardium in Hot Climates, By W. C. BROWN.

2. **Chorea and Rheumatism.**—Duckworth states that a relationship between chorea and rheumatism has long been recognized. The effects of the toxicity of rheumatism are much more widely spread over the body than on articular or cardiac structures, and the throat, the skin, or the brain may equally be sites for its manifestations. The pathology of choreic endocarditis is identical with that of rheumatic endocarditis. Rheumatism has been clearly proved to be an infective malady, and the specific causative organism has probably been identified—the diplococcus of rheumatism of Poynton and Paine, the micrococcus of Walker, and the streptococcus of chorea of Wasserman, being all three identical. Although chorea is never caused by nervous shock or fright, yet a neurotic factor must be acknowledged in a true conception of its pathogeny. That the young and the female sex afford the greater number of examples of it is probably due to the fact that in these subjects the rheumatic toxine is apt to spread more widely and to act with greater intensity than in adults. The adolescent brain is also more unstable than the fully developed one. Chorea is distinctly more frequently met with in families prone to rheumatism; it may precede by months or years an attack of rheumatic fever or may supervene during an attack. The disease occurs markedly among the nervous or unstable members of a family. It is thus a true cerebral rheumatism. It is certain that there is something specific in the nature of the rheumatic toxine as introduced by the particular infecting microbe. It is probable that the toxine varies in the quality and degree of its virulence. To settle the question careful bacteriological study is required.

4. **Congenital Heart Disease.**—Poynton groups the morbid changes in congenital heart disease under two headings: 1. Those due to malformation; (a) arrest of development in early fœtal life, usually incompatible with life; (b) arrest later in fœtal life—imperfect auricles and ventricles, or of the aorta and pulmonary artery; (c) defects at the end of fœtal life—premature closure of the foramen ovale or of the ductus arteriosus. 2. Those due to intrauterine endocarditis. The most important clinical cases are those in which there is narrowing of the pulmonary artery. Prolongation of life to the adult age is most common in this form. A patent interventricular sæptum is frequently associated with the stenosis. Stenosis of the aortic, mitral, and tricuspid valves is occasionally met with, but is uncommon. Cyanosis is the most prominent symptom, yet it has been overrated. It implicates the skin and mucous membrane, and when extreme attains a mulberry hue. There is a marked increase in the number of red corpuscles in the blood, and the blood itself is concentrated. Important symptoms are labored respiration, paroxysms of disordered breathing, with unconsciousness and epileptiform attacks. These attacks are sometimes prolonged and most dangerous. Clubbing of the fingers, toes, and nose, are important results of congenital heart disease. Cold extremities and a subnormal temperature are often observed. Cardiac hypertrophy is very slight. Arrest of physical development is a prominent feature in some cases. The older children feel cold very intensely. Their lives are very precarious, the majority dying under two years of age. The occurrence of endocarditis is most serious, for it is liable to be malignant in type. Another danger to life is gradual failure of compensation, just as occurs in acquired heart disease. The diagnosis of congenital heart disease is as a rule easy, difficulties being due to an absence of cyanosis or of a reliable history. The general prognosis is very grave. Symptoms are more important than physical signs. The treatment is palliative; the children must be kept warm and properly clothed. A warm equable climate is to be desired. Strychnine is more useful than digitalis. Cod liver oil, iron, and malt often act very beneficially.

LANCET.

June 23, 1906.

1. The Uses of Pessaries, By P. Horrocks.
2. Insanity and Murder, By T. C. Shaw.
3. Aphasia (*Lecture III*), By B. Bramwell.
4. Primary Pneumococcal Arthritis, By W. Pasteur and L. Courtauld.
5. A Case of Congenital Hypertrophy of the Pylorus, By J. W. Rob.
6. Orientalism: Or a Change to an Eastern Appearance, By H. W. Dodd.
7. A Case of Epithelioma of the Tongue, with Secondary Growths in the Glands of the Neck and the Liver Treated by X Rays, with Histological Changes in the Primary and Secondary Growths, By R. Knox.

1. **Pessaries.**—Horrocks states that pessaries are used chiefly to remedy, prevent, or alleviate some form of displacement of more or less of the pelvic floor. Such displacement corresponds closely to a hernia, the pessary acting as a truss. Some form of displacement of the organs in the pelvic floor is extremely common among women. The causes may be divided into seven groups: 1. The first, foremost, greatest, and most important is increase in intraabdominal pressure brought about as a rule by hard work or play, chronic cough, constipation (straining at stool), fits, or accidents. This cause is quite sufficient to produce the worst forms of displacement, even though there be no damage to the pelvic floor. 2. Weakening of the pelvic floor, usually brought about by labor at full term. 3. Getting up too soon after labor; this acts in two ways: (a) The weakened pelvic floor has not had time to recover its tone and to undergo repair; the older a woman, the longer she should remain in bed. (*b*) Until six weeks have elapsed, the uterus is bulky and heavy. 4. Weakness of the pelvic floor from emaciation and weakness, as in phthisis, severe illness, starvation, bad food, bad air, and unhygienic surroundings. 5. The presence of tumors or effusions of lymph, serum, blood, contents of cysts, dragging by contraction of inflammatory products, etc. 6. Alteration in the condition of the uterine wall; the older it is the more rigid it is. As a rule no attempt should be made to correct any abnormal flexion of the uterus after the climacteric. 7. Damage to the pelvic floor or disturbance of parts in it by over distention of the rectum or bladder. In the treatment of displacements all of the above should be considered as possible causes, and attention paid to any that can be eliminated—such as cough, constipation, overwork, etc. Often change of occupation alone will be most beneficial. The commonest displacement of the uterus is prolapse, nearly always associated with retroversion. Such cases should be fitted with a watch spring india rubber ring pessary or with a Hodge's vulcanite or celluloid pessary. The india rubber ring pessary should also have an outer chamber containing glycerin or other fluid. A cup and stem pessary may be necessary in severe cases or even a Zwancke's pessary. When a pessary is removed every night, the bowels should move while it is out. When a rubber pessary is used the patient should always be taught how to remove and reinsert it, otherwise they cause an offensive discharge. Nightly removal of the pessary does away with any interference with coition, and prevents the occurrence of ulceration. The next most common displacement is retroflexion. Where the uterus is fixed, attempts should be made to get it looser; hot water vaginal douches are excellent for this purpose. The uterus can usually be restored to a position of anteversion and anteflexion by the fingers alone; a sound is very rarely required. In the fitting of pessaries it is a golden rule that the forefinger should be able to pass fairly easily between the side frame of the pessary and the vaginal wall at any part.

4. **Pneumococcal Arthritis.**—Pasteur and Courtauld state that while pneumococcal affections of joints secondary some other lesion, such as pneumonia, empyema, or otitis, are quite common. Primary pneumococcal arthritis, in the absence of any other signs of infection, is rare. It is especially rare in adults, being usually met with in children. The channel of infection is the blood stream, and the access of a microorganism to the blood stream implies some injury to the smaller vessels at the point of attack leading to stasis and possibly thrombosis. Through the devitalized vessel walls the organisms make their way, or small portions of infected clot are detached and disseminated throughout the circulation. In primary pneumococcal arthritis we must assume that a slight injury of a mucous membrane or of the skin provides the means of entry. This usually occurs in the middle ear, mouth, nasopharynx, or tonsils, in which places the diplococcus of pneumonia is frequently present. Many cases of sore throat are due to this organism. No hard and fast lines can be drawn between primary and secondary pneumococcal arthritis, but where the arthritis is primary and localized there is no reason to assume any extensive or lasting infection of the blood. Often the trivial initial lesion heals before any considerable number of organisms penetrate into the blood, the supply is cut off, and the tissue cells do not have to contend with a recurring supply, as is the case where the arthritis follows a pneumonia or an empyema, so that the prognosis is better in the primary than in the secondary cases. In the latter there is usually a more or less pronounced septicæmia. In a very puzzling group of cases the symptoms of the joint affection appear some days before the lung trouble. It is not clear why the diplococcus of pneumonia should at times show a selective preference for the tissues of a joint. Injury to a joint predisposes to such infection, but a history of injury is rarely obtainable. It is probable that the records available do not convey an accurate idea of the frequency of this form of arthritis, as many slight cases, which recover without surgical interference, must escape bacteriological examination.

LA PRESSE MEDICALE.

June 6, 1906.

1. The Sleeping Sickness, By E. Brumpt.
2. Opsonines and Phagocytosis, By R. Romme.

1. **The Sleeping Sickness.**—Brumpt describes the geographical habitat of this disease together with a map which shows the geographical distribution of the different varieties of the tse-tse fly, the glossinæ, which are considered responsible for the transmission of the trypanosomata, the animal parasites which are the cause of the disease. After a person has become infected by these parasites there is an interval of about a month before the onset of an irregular fever, which persists for four to six or seven years. At a certain stage in the course of the disease irritation produced by the trypanosomata, or by their toxines, may result in a leptomeningitis, and in young children the clinical picture of acute meningitis may be produced. Somnolence is a characteristic of this disease from which its name is derived. Prophylaxis would indicate the destruction of the tse-tse fly. A satisfactory means of treatment has not yet been obtained. Quinine produces no good effect.

BERLINER KLINISCHE WOCHENSCHRIFT.

May 28, 1906.

1. Pyuria Through Leucocytosis; Leucocytosis Pyæmia, By S. Talma.
2. Experimental Contribution to the Mechanism of the Secretion of the Stomach After a Test Breakfast, By L. Kast.
3. The Demonstration of the Precipitable Substance of Cow's Milk in the Blood of Atrophic Infants, By J. Bauer.
4. Is Hysteria a Nervous Disease? By P. Kronthal.
5. Lupus of the Mucous Membranes of the Upper Air Passages, By M. Senator.

6. The Functional Treatment of Fractures (*Concluded*), By C. DEUTSCHLÄNDER.
7. Pathology and Treatment of Arteriosclerosis, By L. MOHR.

1. Pyuria Through Leucocytosis.—Talma reports two cases of this nature which seem to show that pus may be present in the blood, and that its component parts may be excreted through the organs of the body without inducing any further change in them. He uses the word "pyæmia" in its etymological sense of the presence of pus in the blood. The first case reported is one to which he has been unable to find a parallel in literature. The patient was a man, thirty-four years old, the father of eight healthy children, who had had an attack of rheumatism five years before, which had lasted about five weeks, and had been suffering for the last six weeks from repeated chills followed by fever and sweating. The urine was found to contain pus and the diagnosis of cryptogenous pyæmia was made. The patient died, and on autopsy the pleuræ and pericardium were found to be lined with pus, while pus escaped from the cut surface of the lung. Œdema of the interstitial connective tissue was present almost everywhere, and there was a catarrhal condition of the gastrointestinal mucous membrane, but nowhere could there be found an abscess, or the primary focus of the pyæmia, in spite of the very careful search which was made. The other case was one of atrophic kidney in which pyuria occurred during an acute attack of a chronic tuberculosis of the lungs.

4. Is Hysteria a Nervous Disease?—Kronthal defines hysteria as an easily changing pathological reaction of the cells, which constitute the individual, and asserts positively that it is not a nervous disease.

6. The Functional Treatment of Fractures.—Deutschländer advocates that after fractures of the long bones have been reduced and the fragments fixed in position, the affected limb should be put through certain motions every day and massage applied in order to maintain its functional capacity. In this treatment massage plays only a secondary part and is of importance only in the first stages, while the movements are of the first importance.

MUENCHENER MEDIZINISCHE WOCHENSCHRIFT.

May 29, 1906.

1. Active Immunization Against Infectious Diseases, By Professor DIEUDONNÉ.
2. Contribution to the Cultivation of Typhus Bacilli from the Blood, By FORNET.
3. Use of Formalin in Uhlenhuth's Method, By W. LOCLE.
4. Polycythæmia and a Contribution to the Ætiology of Ophthalmic Migraine, By GEORG KÖSTER.
5. A Case of Cæsarian Section with Adhesion of the Ileus, By G. MARTIN.
6. The History of Spinal Cord Anæsthesia, By AUGUST BIER.
7. Wards for Patients with Gallstone Diseases, By FRANZ FINK.
8. Yearly Report of the Ambulatorium of the Surgical Clinic of Munich, By H. GEBELE.
9. Further Remarks Regarding the X Ray Treatment of Leucæmia, By J. ARNETH.
10. Investigations in Regard to the Metabolism in Leucæmia During X Ray Treatment, By IWAN ROSENSTERN.
11. The Development of the Children's Policlinic of the University and of Dr. Hauner's Children's Hospital in Munich from November 24, 1887, to the Spring of 1906, By VON RANKE.
12. The Trip to the Congress at Lisbon, By OSKAR VULPIUS.
13. Retrospect Over the Fifteenth International Medical Congress, By OSTWALT.

1. Active Immunization Against Infectious Diseases.—Dieudonné gives four ways of obtaining active immunization: 1, Inoculation with living producers of disease of full virulence; 2, inoculation with living producers of disease of lessened virulence; 3, inoculation with dead bacteria; 4, inoculation with bacterial extracts. The first method is of little practical importance, the second is used chiefly in vaccination and inoculation for rabies, the third is employed mainly against cholera, typhus, and the plague, and to the fourth belong tuberculin and other products of metabolism obtained mechanically or chemically from the tubercle bacilli. Specific protective materials are formed in the bodies of the inoculated under the influence of the incorporation of the bacteria, a process always accompanied by a reaction. When the reaction is absent protection will not be secured, perhaps because the dose of the inoculated material was too small. The development of the immunity takes from five to ten days because the protective material must be formed in the organism itself, and during this time the organism is in a condition of increased receptivity toward the disease. The active immunization lasts for several months. The author devotes himself mainly to inoculation with dead bacteria and the treatment of cholera, typhus, and the plague.

10. Metabolism in Leucæmia During X Ray Treatment.—Rosenstern finds that there is a diminution of the leucocytes in leucæmia under the influence of the x ray treatment associated with an improvement of the general condition, and concludes that the cause of this diminution of the leucocytes is not due to an increased destruction of them, while they are produced in the same quantity as before the inauguration of the treatment, but is due to a decrease in the number of these elements formed, and that this diminution in the number formed is to be considered a result of the effect produced by the x rays on the organs where leucocytes are produced.

RIFORMA MEDICA.

June 16, 1906.

1. The Value of Some Clinical Methods for the Determination of Organic Oxidation, By CARLO GUALDI.
2. The Conservative Surgery of Tumors of the Scapula, By G. PASCALE.
3. Researches on Chlorine and on Biliary Acids in the Bile Under the Influence of Sodium Chloride Waters, By P. CASCIANI.

1. Methods of Determining Oxidation.—Gualdi says that the various methods available for calculating the oxidation of organic matter from the examination of the urine, etc., are all more or less inaccurate. The phenol method gives approximate results, but it is also subject to inaccuracies; it gives an index to the amount of oxidation present in the body, provided there is no unusual amount of putrefactive processes in the intestines, which generate an excessive amount of phenol in the urine. The benzol test is a similar test which has similar limitations. The results of this test are, if anything, still less trustworthy. The most accurate method thus far devised is the estimation of the amount of sulphates, or rather of sulphur in its various forms in the urine. Sulphur exists in the urine in one of three forms, as preformed sulphuric acid, as combined sulphuric acid, and as organic sulphur, so styled because the molecule contains one atom of sulphur tied to an atom of carbon. The total sulphur in the urine eliminated in twenty-four hours can be measured by Salkowski's method, as can also be the total sulphuric acid excreted. The difference is the so called neutral sulphur. The relation of neutral sulphur to the total sulphur excreted is an index to the amount of oxidation which goes on in the body.

2. Tumors of the Scapula.—Pascale pleads for the preservation of at least a small portion of the scapula in surgical operations in cases of tumors of that bone. The functional results, when a part of the bone has been preserved, are quite good, as the author demonstrates

in two cases reported. He advocates the conservative resection of the head of the humerus instead of a radical amputation or a wider resection, in cases in which the malignant process has involved the head of the bone. Even when the scapula is totally removed the head of the humerus should always be wired or attached in some other way, instead of disarticulating at the shoulder.

3. **Influence of Salt Solutions on the Bile.**—Casciani reports the results of some interesting experiments which he performed in a woman with a biliary fistula. He kept this woman on a strictly uniform diet, and gave her a mineral water containing about seven tenths of one per cent. of sodium chloride. He examined this woman's bile before and after the administration of this mineral water, and found that the amount of chlorine contained in the bile was slightly increased, while there was a more marked increase in the amount of biliary acids and of biliary salts eliminated. As cholesterin, the principal constituent of gallstones is kept in solution in the bile by the salts of the biliary acids, the administration of saline mineral waters is one of the best preventives against the deposit of gallstones in the biliary tract.

ROUSSKY VRATCH.

May 20, 1906.

1. The Importance of Some Auscultatory Signs in the Differentiation of Pneumonia from Pleuritic Effusions, By A. P. Favitski.
2. Contribution to the Pathology of the Falloppian Tubes, By F. B. Boukoyemski.
3. On Adams-Stokes's Disease, By N. D. Strazhski.
4. Radium in Various Forms of Trachoma, By K. N. Jardo-Syssoieff.
5. Buttermilk: A Food and a Therapeutic Measure, By V. N. Gerasimovitch.
6. The Functional Rest of the Lungs and the Coordination of Respiratory Movements in Pulmonary Tuberculosis (*Continued*), By A. N. Roubell.

1. **Auscultation in the Diagnosis of Pneumonia and Pleurisy.**—Favitski says that auscultation offers the best method of differentiation in cases in which one is in doubt as to the diagnosis between pneumonia and pleurisy. The most valuable auscultative sign is the fact that in pneumonias the bronchial breathing, the alterations in the voice and in the cough appear to be immediately beneath the examiner's ear, while in pleurisy the auscultative phenomena sounds far more distant. The difference between the sounds is so marked that any one who pays attention to this and who becomes accustomed to distinguish the nearness or the distance of the sounds can readily distinguish the two conditions. The râles, too, are heard in pneumonia close to the ear, while in pleurisy they are more distant. As to the rusty sputum, it cannot be considered as a trustworthy sign, as it is often absent in children and in old persons, where the diagnosis is most difficult. Puncture for exploratory purposes should not be abused, and we should study to make the diagnosis without this expedient if possible.

4. **Radium in Trachoma.**—Jardo-Syssoieff employed a tube containing ten milligrammes of radium bromide in the treatment of a number of cases of trachoma including a variety of stages of this affection. One group of patients included those with the granular stage, while the other group embraced cases with other forms of the disease, i. e., with discharge, the presence of scars infiltration of the eyelids, pannus, etc. The lids were everted, and the radium tube was directly applied; the sittings were repeated every two or three days, the length of each exposure being about one minute, while in other cases the exposures lasted from five to eight minutes at a time, but were repeated only once a week. The author treated in all thirty-eight cases, and in nearly all the results were excellent, while the congestion and other symptoms which were at first noted were found to have been results of too strenuous treatment. Radium had no effect whatever on the scars, but in cases of pannus it had most astonishing curative action.

5. **Buttermilk.**—Gerasimovitch considers buttermilk as a food for invalids and as a substitute for mother's milk. The latter phase of the subject is interesting. Buttermilk, as the Russian author shows, has been used extensively by some investigators as a substitute for mother's milk. It is easily borne by infants, and is inexpensive, while it includes a great deal of the nourishing elements of mother's milk. Rickets have undoubtedly developed in children fed exclusively on buttermilk in infancy, but the forms thus far observed in such children have always been slight. The most valuable feature of buttermilk as an infant food is the fact that the infants so fed are not prone to develop acute gastrointestinal disorders.

THE JOURNAL OF NERVOUS AND MENTAL DISEASE.

June, 1906.

1. Multiple Sclerosis: A Contribution to Its Clinical Course and Pathological Anatomy, By E. W. Taylor.
2. Subcortical Cerebral Gumma Accurately Localized in the Comatose State; Death; Autopsy, By George A. Moleen.
3. A Further Contribution to the Study of the "Paradoxic Reflex," By Alfred Gordon.

1. **Multiple Sclerosis: A Contribution to Its Clinical Course and Pathological Anatomy.**—Taylor gives a list of contributions written in this country with the autopsies, on multiple sclerosis, with the report of eleven cases. The diagnosis is often absolutely impossible to make with assurance during life even in advanced stages of the disease. The disease may run its entire course without the appearance of any of the so called cardinal symptoms; in the earlier stages they are very frequently absent, and the question of the significance of other and subordinate signs becomes of increasing importance. Among such signs are to be mentioned: Unexplained spasticity; certain general ocular conditions, such as a pallor of the temporal side of the optic disc, together with transient diplopia or alterations of the fields; the age at onset, usually between the twentieth and fortieth year; absence of the abdominal reflexes, and finally of the cremaster reflexes; apoplectiform attacks; vertigo; forced laughter and weeping; paræsthesiæ; bladder disorders; weakening of the memory, etc. Heredity plays undoubtedly an exceedingly small part in the disease. At best the diagnosis is often impossible, but also not infrequently may be made with probability. The ætiology of the disease remains absolutely obscure. The supposition of a selective poison acting through the bloodvessels is justified as an hypothesis, but remains undemonstrated as a fact. The chief interest, therefore, centres in the pathological anatomy of the condition. The lesions are unique among pathological processes, as regards their location, their method of growth, and their destructive qualities. It seems to be a cerebrospinal disease, the lesions being widely disseminated in brain and cord. The lesions are accepted as multiple gliosis. The author concludes his article in saying: The important pathological questions as they now present themselves may therefore be summarized as follows: 1. Are the bloodvessels important as causative agents of the sclerotic patches, and if so, how are they involved? Are we dealing with a true inflammation in the ordinary sense of the term? The answer can be given as affirmative. 2. Are we dealing with a primary overgrowth of neuraglia, with a primary degeneration of myeline, or with a process which simultaneously affects both neuraglia and myeline. The answer is uncertain. 3. The answer to the third question is also not conclusive, the question of regeneration of nerve fibres in the sclerotic patches. Generally speaking, the present evidence points towards a

primary destruction of the myeline with either a secondary or coincident proliferation of the neuraglia.

AMERICAN JOURNAL OF OBSTETRICS.

June, 1906.

1. The Ætiology of Puerperal Sepsis, By J. D. VOORHEES.
2. The Pathology of Puerperal Infection, By F. A. DORMAN.
3. The Treatment of Puerperal Infection, By E. B. CRAGIN.
4. Two Cases of Bilateral Dermoid Cysts; One Showing Carcinomatous Degeneration, the Second Complicated by the Presence of an Eighty-One Pound Ovarian Cyst, By C. C. NORRIS.
5. The Causes and Treatment of Metrorrhagia, with Special Reference to the Use of Schatz's Metranoikter and Atmokausis, By J. C. HIRST.
6. Tuberculous Infection of Uterine Myomata. By T. G. DICKSON.
7. Conservative Surgery of the Uterine Annexa. By J. N. WEST.
8. Effect of Surgical Operations on the Insane, By L. BROUN.

1. **The Ætiology of Puerperal Sepsis.**—Voorhees shows that there is low mortality and high morbidity in approved maternity hospitals, and that in private practice the reverse is the case. Three causes for high mortality from puerperal sepsis as given by Norris are: 1. The carelessness and ignorance of the midwife. 2. The uncleanliness of the rank and file of the profession. 3. The disregard of and failure to treat with promptness the earliest symptoms of infection. The disease is developed by the agency of germs. The order of their frequency is streptococcus, colon bacillus, gonococcus, and rarely pneumococcus, tetanus bacillus, bacillus aerogenes capsulatus, and various anaerobic saprophytes. Predisposing conditions are dry or protracted labor, and any form of instrumental or operative delivery. Lesions of the tissues during delivery, hæmorrhages, and slow involution of the uterus are favorable to its development. Germs may enter either before, during, or after labor. External infection, imperfect technique is responsible for almost all cases of this disease, but in a few cases it may be attributed to autoinfection.

2. **The Pathology of Puerperal Infection.**—Dorman states that the primary point of puerperal infection is usually the area of former placental attachment. Other points are the traumatisms of the soft tissues necessitated by labor. The rupture of a pus sac during labor may complete a pathological process. The involvement of the uterus may follow a primary vaginal lesion. Lymphatic extension may cause pelvic cellulitis or abscess, and mucous membrane extension from the vagina may infect the endometrium. Extension may also take place by the veins or by continuity. Lymphatic progress may lead to general peritonitis. Venous infection progresses from the thrombosed sinuses at the placental site, and may result in pyæmia, multiple visceral infarcts, and various infectious diseases. Mucous membrane continuity may cause general endometrial infection, and may involve the vagina and vulva when the infection is descending. Tubal involvement from continuity is rare except in gonorrhœa.

3. **The Treatment of Puerperal Infection.**—Cragin thinks prophylactic treatment of the greatest importance. Antepartum douches are objected to except when there is evidence of gonorrhœal infection of the cervix and vagina, or when there is a sinus discharging pus into the vagina. Shaving of the external genitals is considered an important safeguard against infection. The use of rubber gloves during labor is recommended. After labor some of the complicating conditions are suppurative appendicitis, pyelitis, and distended breasts. Infection may imply: 1. A toxæmia due to absorption of the products of putrefactive bacteria, otherwise a sapræmia, or to absorption of the toxines of distinctively pathogenic bacteria. 2. A septicæmia in which bacteria circulate in the blood. Intrauterine treatment is not indicated in bacteriæmia except in the rare instances in which there is a removable false membrane. The intrauterine douche may be given once a day if elevation of temperature is not relieved by elimination of the bowels and breasts as possible sources of trouble. If one or two repetitions of the douche fail to lower the temperature the uterus may be explored under anæsthesia with the finger or the curette if necessary. The treatment of puerperal bacteriæmia or septicæmia is chiefly that of the general condition. Large saline enemata are of value. Antistreptococcic serum and the silver preparations are disappointing. Hysterectomy is only indicated in those cases in which it is fairly demonstrable that the infectious condition is limited to the uterus or appendages. Vaginal incision and drainage are indicated if there is pelvic abscess near the vagina.

ANNALS OF SURGERY.

June, 1906.

1. Affections of the Thyreoid Gland, By G. E. BEILBY.
2. Branchial Fistula, By M. J. CHEVERS.
3. Diagnosis of Œsophageal Lesions, By B. W. SIPPY.
4. Postoperative Ileus, By J. M. FINNEY.
5. Backward Dislocation of the Second Carpometacarpal Articulation, By C. B. LYMAN.
6. Cornu Cutaneum of the Human Scalp, By H. L. METERT and E. A. BABLER.
7. A Self Retaining Trocar and Canula for the Aseptic Evacuation of Distended Viscera, By H. LILIENTHAL.

1. **Affections of the Thyreoid Gland.**—Beilby thinks operation is rarely undertaken for the deformity alone. The severity of the symptoms is the guide for treatment. Inasmuch as secondary changes in these tumors are very frequent, they should be considered on the same basis as similar lesions in other organs. In simple hypertrophy, if the gland continues to enlarge, a portion of it should be removed. If a new growth recurs, especially if it is suggestive of cancer, operation may be imperative for the relief of pressure symptoms. Kocher's vast experience with thyreoidectomy shows that under local anæsthesia as low a mortality as 0.4 per cent. is possible. Partial thyreoidectomy is becoming the method of choice in exophthalmic goître. Good results in this condition have been reported from the use of the milk of thyreoidectomized goats, also from the serum of thyreoidectomized sheep. An early operation is desirable, before damage has occurred to the nervous system. The importance of local anæsthesia for this operation is also noteworthy.

2. **Branchial Fistula.**—Chevers treated a case of this character by washing out with a 1 to 40 carbolic acid solution, with strands of worm gut for drainage. After a few days of such treatment the alternating electrical current was used with the result of practically closing the fistula. The author recognizes that there is some danger in this treatment, but the result seemed to warrant the risk. No differential diagnosis was requisite in this case. The treatment is advocated in preference to operation.

3. **Diagnosis of Œsophageal Lesions.**—Sippy finds hyperæsthesia not infrequently the cause of discomfort in swallowing. Anæsthesia of this organ is of no practical importance. Inflammation of the organ is infrequent except as the result of the ingestion of alkalies, acids, and metallic salts. Ulcer seldom occurs except in connection with carcinoma. The most common and serious disorders of the œsophagus are those which obstruct the lumen of the tube. The discomfort of this condition is located at the seat of the obstruction, in the epigastric region, or in the back. There may be great difficulty in swallowing, and unsuccessful attempts at eating may be followed by regurgitation of the food with much mucus. Stomach tubes and bougies if required must be passed with great care, an olive tip bougie being best to localize an obstruction or stenosis.

Conditions leading to stenosis are extraœsophageal and intraœsophageal, the former being infrequently compared with the latter. The course of stenosis is progressive, though there may be improvement for a time. Emaciation and final cachexia supervene, the average duration of the disease being six to eight months. Diverticula of the œsophagus may be due to pressure, traction, or to traction pressure. Spasm may occur at any point in the tube, but it is especially frequent at the cardiac end and by continued overfilling of the tube leads to fusiform dilatation. The spasm must be overcome or gastrostomy be performed.

4. **Postoperative Ileus.**—Finney gives the following conclusions: 1. Broca's classification into early and late varieties is approved. In the former, which is often associated with peritonitis, the differential diagnosis as to variety is always difficult and often impossible. In the latter the diagnosis is usually easy. 2. Adhesions form the chief factor to be considered in an attempt to prevent the occurrence of postoperative ileus. Efforts directed toward this end are usually productive of good results. 3. Drainage exercises a marked influence in the production of adhesions. 4. Prompt operation is indicated in every case after palliative measures have been given a fair trial and have failed. The character of the operation depends upon the nature of the obstruction and the condition of the patient. 5. The prognosis is unfavorably influenced by the presence of infection. It is excellent if infection is absent.

THE PRACTITIONER.

June, 1906.

1. Some Obscure Cases of Urinary Disorder, By R. C. Elsworth.
2. The Throat and Nose in Relation to Phthisis, By H. Barwell.
3. On Certain Bodies Present in the Chancre, in the Condyloma, and in the Blood During Secondary Syphilis, By W. E. De Korté.
4. The Treatment of Tuberculous Peritonitis, By T. Guthrie.
5. Necrobiotic Fibroids and Pregnancy, By F. E. Taylor.
6. The After Treatment of Cases of Suprapubic Cystotomy, By G. H. Colt.
7. Removal of a Tracheotomy Tube Which Had Become Impacted in the Left Bronchus, By R. Fullerton.
8. Case With Comments. A Case of Bronchiectasis Successfully Treated by Incision and Drainage, Presenting Some Unusual Features, By T. Redmayne.
9. The Treatment of Bronchiectasis, By S. Box.

1. **Some Obscure Cases of Urinary Disorder.**—Elsworth desires to emphasize the following points: 1. Cystitis of long duration, due to a primary lesion of the bladder and accompanied by acid urine is a very common disorder. 2. Urinary disorder with acid pyuria and frequency of micturition does not mean that the bladder is excluded and that the lesion is necessarily in the kidney. 3. There may be extensive disease of the kidney without urinary symptoms and with normal urine. 4. There may be pain, frequent micturition, and acid pyuria, without disease of either kidney, or bladder, the symptoms being due to a lesion in the ureter. 5. The various urinary organs being so intimately connected, the symptoms produced by disease of one may be common to all. 6. Differentiation is possible only by physical examination in which the cystoscope gives valuable aid. 7. In some cases the administration of a pigment such as an aniline dye facilitates the recognition of a more or less obstructed ureter.

2. **The Throat and Nose in Relation to Phthisis.**—Barwell concludes that it is probable that the ætiology of pulmonary phthisis may be similar to that of tuberculous infiltration of the glands of the neck, and that the lungs may be directly infected from disease of the lymphatics in this situation. The source of infection in tuberculosis of the cervical glands is generally through the faucial ring of lymphoid tissue which probably acts, in health, as a defense against microorganisms. When it becomes diseased it is a fruitful source of danger, enlarged glands in the neck being usually associated with hypertrophy and chronic inflammation of the faucial and nasopharyngeal tonsils. If pulmonary phthisis is due to infection by the same paths, careful attention to these structures and their timely removal when diseased becomes a matter of great importance.

3. **Bodies Present in the Chancre.**—De Korté states that the evidence of the infectivity of the blood during the secondary stage of syphilis being very strong and being practically admitted by all syphilologists, it would seem essential that the causative agent should be recoverable from the blood in the course of that stage. He finds that the spirochæta pallida fails to satisfy that essential condition. He examined with great care the blood of a large number of syphilitics, including most of the types of secondary syphilides and did not find a single spirochæta, either pallida or refringens. His conclusion is that if this organism is the cause of syphilis it does not exist as such in the blood. He thinks there is no doubt as to the protozoon nature of this organism, but that it is premature to speak of its causal relation to syphilis. The complexity of the life cycle of the organism, and in certain forms or phases the parasite can generally be found in the blood, though it may require much effort and patience to detect them. The method of his technique, together with a number of very clear microphotographs, are presented with his paper.

4. **The Treatment of Tuberculous Peritonitis.**—Guthrie is favorable to abdominal section for this condition, allowing the fluid to run out. More than one incision may be required. The good results of such treatment may be due to the introduction of light and air into the abdomen, or to the introduction of putrefactive bacteria which lead to the manufacture of toxalbumens from the blood which are destructive to the tubercle bacilli. It is also possible that when the ascitic fluid has been removed its place is taken by serum with antibacterial properties, which arrests the morbid process. Aspiration instead of incision may be effective in some cases. The disease presents itself in three forms, the ascitic, the fibrous or adhesive, and the caseous or ulcerating. In the last form operative procedures are contraindicated, and usually in the second. The first form gives twenty to thirty-five per cent. of recoveries.

5. **Necrobiotic Fibroids and Pregnancy.**—Taylor speaks of the noteworthy changes in uterine myomata which are caused by aseptic necrobiosis or red degeneration. In this condition there are softening and absorption which may result in the complete disappearance of the tumor. The changes begin in the central portion of the tumor, and show marked deficiency in the nuclear staining of the tissue cells. In advanced cases there is an absence of nuclei in the section, leaving only wavy bundles of fibres which have taken up the ground stain. The ætiology is a matter of uncertainty. It is probably due to nutritional disturbance of the tissues toward which pregnancy may exert a predisposing factor. Bland Sutton states that fibroids obtained from gravid uteri show degenerative changes and tendency to softening. The author's conclusion is that pregnancy is not an ætiological factor of prime importance, but that when the two conditions are associated there may be both clinical and pathological relationship.

JOURNAL OF THE ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES.

July, 1906.

1. The Prevention of Disease in the Army and the Best Method of Accomplishing that Result, By Charles E. Woodruff and Frank T. Woodbury.

2. Practical Methods for the Purification of Drinking Water, By WILLIAM H. DEVINE.
3. Transport Model for Conveying Recumbent Wounded Over Rough and Mountainous Roads, By ALEJANDRO ROSS.
4. A Much Needed and Easily Effected Reform in Camp Sanitation, By NORMAN ROBERTS.
5. Some Physical Effects of Gun Fire. By LLOYD THOMAS.
6. Malaria and Mosquitoes at Lucena Barracks, By HENRY PAGE.

1. The Prevention of Disease in the Army and the Best Method of Accomplishing That Result.—Woodruff and Woodbury say that the prevention of any particular disease in the army is based on the same biological laws as in a civil community. The morbidity and mortality rates among soldiers in garrison are markedly less than among an equal number of young men in any civil community. This shows that the systm must be essentially good; certainly the soldiers are a picked lot of young men, of perfect health and under control. The faults, such as they are, appear only when the army leaves the conditions of a civil community and goes into camp. There certain cardinal laws of military sanitation are to be observed. Armies in the field must take measures to insure the burial, cremation, or removal of all excreta. Failure to realize this one necessity was the prime cause of the scandalous conditions of the camps of 1898. The next law is the water supply; at least 125 or 150 gallons of water should be supplied daily per caput. A bath is a necessity after a dusty day's march or drill. The water should be good, and there should be means of boiling it for drinking purposes. Temporary camps should not be crowded without danger of autoinfection; latrines must be far from the kitchen, possible on the opposite side; and such temporary camp should not be used for a longer period than two weeks, and an old camp site should not be used again for a year. Good cooks should be in each company. A company laundry is also a necessity, especially in the tropics. Another basic principle is that no sick man shall be allowed in camp, the hospital should only be a receiving place, and the sick should be sent to permanent buildings in the rear, which should be within one day's travel from the front by rail. As the patients may all be wounded men, there should be plenty of means of transportation. The chief stores are ammunition, dressings, food, and water. There should be abundant means of carrying them to the front, while all such things as bacteriological, chemical, and x ray equipments should be left to the rear. Each division of the army should have four ambulance companies; a separate brigade can take one company, and each regiment should have its own dispensary, or if detached a third of a company. This is the first part of the paper treating with the principles of field sanitation, while the second part is taken up by the principles of organization. The gist of this is, in a very few words, that the commanding officer should give *carte blanche* to the surgeons of his staff as far as hygiene, medicine, and surgery goes, and support them. The surgeons should be properly educated men, and their number should not be restricted.

2. Practical Methods for the Purification of Drinking Water.—Devine is of the opinion that among the four principal methods for the purification of drinking water in military life, distillation, filtration, chemical disinfection, and boiling, the boiling of water is to be preferred. It is simple and inexpensive, and can be done in a practical manner with a durable, inexpensive apparatus.

5. Some Physical Effects of Gun Fire.—Thomas states that up to the present there is no device which will sufficiently protect the ear from the violent concussions caused by the modern gun. To protect the membrana tympani cotton wool is useful as diminishing the violence of the air waves; for some time a doughy substance has been largely used for plugging the external meatus; lastly, it is recommended to keep the mouth slightly open.

Letters to the Editors.

SPECIALIST AND GENERAL PRACTITIONER.

58 WEST SIXTY-EIGHTH STREET,
NEW YORK, *June* 25, 1906.

To the Editors: I wish to call attention to some remarks of Professor Willard's which are misleading. In your issue of June 23rd, page 1270, under the subhead Rheumatism, Dr. Willard gives one to understand that the general practitioner treats every pain as rheumatism and that rheumatism is an insignificant disease in childhood, easy of diagnosis and treatment as compared with the maladies that fall under his specialty. His reference (last paragraph, page 1270) to the general practitioner's maltreatment, criminality, and carelessness is especially regrettable—in form at least. I do not write to palliate neglect or incompetency on the part of the general practitioner, or to create controversy. My sole object is to counteract whatever erroneous impression Dr. Willard's remarks may have created. The specialist of to-day is something of an autocrat. Thanks to opportunities afforded by appointments in colleges, hospitals, and clinics, special students, by devoting all their time to *one* subject, soon acquire a degree of skill and proficiency *in that subject* that inspires them with a sort of contempt for the general practitioner's attainments. They forget that the general practitioner has a specialty, viz., to keep watch on *all* the specialties, and that it is he who is the general philosopher of medicine and not the specialist.

Here are a few short histories that refute some of Dr. Willard's statements and for once put the shoe on the other foot.

CASE I.—A girl, five years old, whose family and personal history were good. Three years ago the mother noticed that the child dragged the left leg and complained of pain in the knee. The child was stripped (children should *always* be stripped for examination), but there were found no marked signs of disturbance in the joint, no spasm, no signs of inflammation, no limitation of movement. Tuberculous osteitis about the knee, hip, and spine was carefully looked for. There was no cardiac murmur, but there was slight gastrointestinal disturbance. The temperature (rectal) was 101° F. The child was put to bed and treated in a rational way on the theory that she was suffering from rheumatism. The treatment consisted of rest, regulation of the gastrointestinal functions, diet, general surroundings, and, lastly, local and constitutional specific measures. The patient improved, but the temperature did not return to normal and the tongue remained coated. The treatment was persisted in for some weeks until the rise of temperature and other signs disappeared. Finally the child was allowed to go around again, the mother being warned about recurrence of pain, limp, etc., and consequent danger to the heart. After a few months the child again had the same train of symptoms. The same rigid examination and treatment were followed by good results. The attacks were repeated again and again at intervals of months. The mother now began to tire of the rigid treatment for what appeared to be so slight an ailment. She justly dreaded tuberculous osteitis, but didn't so much mind "a mere rheumatic pain." The child was now neglected somewhat and allowed to run about even when her knee pained her and her temperature (rectal) was 101° to

102° F. Up to this time she complained only of the knee. There were no other pains; no heart murmur.

In the summer months she had a circumtonsillar abscess, which was opened. She dragged along now sometimes very well, sometimes not so well, but she always had some rectal elevation of temperature. At this time, during an exacerbation, a specialist was consulted about the knee. He diagnosticated the case as incipient tuberculous osteitis and scouted the idea of rheumatism. The patient passed from my care. At present she suffers occasionally from rheumatism affecting the knees, ankles, and other joints, but in addition her heart is so impaired as to unfit her for anything useful in life.

This is a case of uniarticular rheumatism where the symptoms were *not* "frank and positive," as the orthopædist's mistake shows.

Case II.—A man, thirty years old, had well marked rheumatism of the feet and ankles and mitral insufficiency with dilatation and failure of compensation. He was seen by a well known orthopædist, who immediately ordered plates or supports for flat or weakened arches, besides volunteering the information off hand that the patient had no rheumatism. The patient got the plates and kept going around when absolute rest was needed. He died soon afterward.

Case III.—A man of middle age, with an acute gonorrhœal inflammation involving the spermatic cord in the vicinity of the external abdominal ring, went to a well known hospital, where the surgeon stood in front of him and diagnosticated inguinal hernia without touching him or having him lie down. A truss was applied, but not by the surgeon. An hour later the patient had a chill, followed by high fever. He suffered great agony until the truss was removed and proper treatment instituted. Recovery was followed by complete sexual impotence.

My first case shows that rheumatism is not by any means a disease easy of diagnosis in children. My experience has been that it is as often overlooked and improperly treated as the cases mentioned by Dr. Willard, and with even more disastrous results. I think it is also apparent that, while specialists gain much by specializing, they also lose much in a general way and are perhaps less fitted to criticise the general practitioner than he is to criticise them. "Too many specialists and too few doctors" is Jacobi's just criticism of our period. J. Byrne.

THE ÆTIOLOGY OF BALDNESS.

543 Wilcox Building,
Los Angeles, Cal., *June* 25, 1906.

To the Editors: About five years ago I read an article on the ætiology of baldness by an author who advanced the very simple and plausible theory that this unfortunate accompaniment of manhood was caused by the atrophy of the hair follicles of the dome of the head from pressure of the tight fitting hat band. I have forgotten the writer's name, but his theory is so plausible and the subject so important that it would certainly be interesting to hear from him again. By this time he probably has made many careful observations which will enable him to place his convincing deduction again before the profession.

Your editorial in the *Journal* of June 16th, on The Causes of Baldness, in which you quote Jacquet as stating that loss of hair has a nervous origin affecting the intellectual class more often than others, surely cannot bear the light of analysis. Baldness runs in families, affecting the men and passing the women by. If the father is bald and the sons are bald, then invariably one can notice that the sons' heads are shaped like the father's. Then, too, notice how the baldness begins. With some the forehead is the first to show the loss or thinning of the hair, the process gradually extending backward, while with others it begins at the very dome of the head and runs down to the hat band line, but rarely beyond it.

The intellectual theory fails to explain why this zone is perfectly outlined at the level of the head where the hat band binds. Possibly, in the intellectual, it might be because the seething cauldron of ideas in such brains bubbles to the top and overheats the hair follicles! That might be a possible explanation for some! But when we see the nearly total absence of baldness in women, and note the constant zone of baldness corresponding with the hat band zone, in man, it makes the theory of the writer to whom I referred seem far more tenable than Jacquet's. J. O. Cobb.

Proceedings of Societies.

AMERICAN GYNÆCOLOGICAL SOCIETY.

Thirty-first Annual Meeting, held in Hot Springs, Va., May 22, 23, and 24, 1906.

The President, Dr. Richard B. Maury, of Memphis, Tenn., in the chair.

Is Gynæcology Dead?—In a paper thus entitled, Dr. E. C. Gehrung, of St. Louis, said he thought that surgery had done its best to ignore and push aside gynæcology as a separate department of medical science and art. He thought the error was prevalent of endeavoring to accomplish too much by surgical measures. He protested against operative procedures in which no benefit was likely to be accomplished, and in which better results by other measures were probable. He objected to exploratory operations in which exploration revealed nothing to justify such a procedure. He continued to plead for the value of mechanical methods of treatment in proper cases, especially in uterine displacements, all of which were to be classified as ptoses or herniæ. He was still a firm believer in the importance of anterior displacement of the uterus as a pathological condition, and in the value of mechanical treatment for it.

A broad distinction should be made between surgical and gynæcological conditions, and treatment should be changed in accordance with such discrimination.

Dr. Edebohls, of New York, believed that with excessive mobility of the uterus we had an equivalent of retroversion, though the uterus might not at the moment indicate that condition. He preferred to treat such conditions surgically, and his method consisted in shortening the round ligaments.

Dr. Goffe, of New York, did not believe in the existence of anterior displacement of the uterus as an abnormal condition, except when it existed congenitally. If there were symptoms in connection with anteversion, they were usually due to causes other than the uterine displacement.

Dr. Baldy, of Philadelphia, did not endorse a method of diagnosis which consisted in forcible movements of the uterus by means of the fingers. Such a procedure might induce a pathological condition where none had been present previously.

Dr. Gehrung expressed certainty that anterior displacement was a veritable morbid condition, because by suitable treatment bad symptoms were removed.

Enteroptosis.—Dr. R. R. Smith, of Grand Rapids, Mich., illustrated his paper on this subject in a very graphic and convincing manner by means of a series of large photographs followed by an intensely interesting series of large x ray plates. In the series of photographs taken from living women, the normal outlines of the chest, abdomen, and back were demonstrated, also the gradations from the same as disease encroached upon the stomach and intestines. A long thorax and narrow abdomen were shown to be the accompaniments of visceral ptosis, also absence of the normal lordosis

of the spinal column with round shoulders and a downward slant of the ribs.

The x ray pictures taken just after a meal showed the varying positions of the stomach, the tendency of the two thirds contiguous to the pylorus to descend, the upper third necessarily remaining nearly constant at the cardiac end, and the relations of the intestines, especially the transverse colon, when displaced to the other abdominal viscera. The possibilities of relief from these visceral displacements by various lifting, suturing, and anchoring procedures were discussed.

Dr. Noble, of Philadelphia, referred to the relation of loose kidneys to enteroptosis and thought they were seldom associated. He had also observed that in very few instances did they proceed from injury. He then described his method of treating by surgical measures the ptoses of the stomach and intestines.

Dr. Mann, of Buffalo, believed that tight corsets and other unnatural means of compressing the body in the clothing of women at the present time were mainly responsible for the various forms of enteroptosis. These vicious methods of dressing were also responsible for imperfect development of the muscles, and women who were thus deformed were not good subjects for surgical treatment.

Dr. Clark, of Philadelphia, expressed little confidence in the surgical measures which had thus far been devised for the relief of enteroptosis. The results which had been obtained were far from ideal. Constipation and other bad habits in early life seemed to him to be responsible for the morbid conditions which were under consideration. He believed that surgical measures should not be undertaken until the patients were sent from the physician with the opinion that everything had been tried, in the way of medical treatment, and had failed to produce beneficial results.

Dr. Edgar, of New York, saw a potent cause of enteroptosis in getting up too early after confinement. Many women resumed their household duties before the abdominal muscles had undergone suitable involution. He urged upon the society the necessity of keeping puerperal women in bed until such involution had taken place.

Dr. Goffe recommended the use of the straight front corset for women at the end of the puerperium in place of the usual abdominal supporter. He was moderately in favor of operations for gastroptosis and narrated two interesting cases.

Dr. Smith called attention to the fact that enteroptosis might not be due to tight corsets, as he had frequently observed this condition in women who had never worn corsets. He admitted that too much should not be expected from the present methods of treating enteroptosis by surgical measures.

Anomphalosis.—Dr. A. H. Buckmaster, of Charlottesville, Va., defined this condition as one in which the umbilicus was obliterated by surgical measures immediately after a child was born. The present method of treating the stump of the umbilical cord was unsurgical and was prone to result in sepsis of greater or less intensity. It was also followed by the formation of undesirable scar tissue, and frequently by hernia. He proposed the entire removal of the umbilical stump as a routine procedure, and the closure of the wound by sutures. This would usually result in the formation of a simple, firm, linear scar.

Infection of Ovarian Cystomata.—Dr. H. C. Coe, of New York, believed that the channels of infection were as follows: 1. By direct continuity as from adherent intestine and other viscera. 2. By bloodvessels or lymphatics. The most common specific organisms carried by the bloodvessels were the streptococcus and the colon bacillus, while the lymphatics convened the pneumococcus, the tubercle bacillus, and the specific germ of typhoid fever. Illustrative cases showed secondary infection of ovarian cysts by the bacilli of typhoid fever and tuberculosis. The practical deductions were that ovarian cysts should be removed as soon as they were recognized and before complications occurred, also that there should be prompt intervention when the general symptoms indicated that infection had occurred.

Thrombosis and Embolism Following Abdominal Operations.—Dr. Joseph Taber Johnson, of Washington, stated that these conditions occurred most frequently after supravaginal hysterectomy for myomata. They had been observed, however, after other abdominal operations, notably after suspension of the uterus. The femoral vein of the left leg was the most frequent seat of the complication, though both legs might be involved in succession. The symptoms might not appear until two or three weeks after the performance of the operation. There were various causes, including preexisting infection and injuries to the vessels at the time of the operation. These were not essential causes, however, and there might be nothing connected with the operation which would suggest such a possible sequence. Thrombophlebitis was the primary complication. It was rarely followed by suppuration, and recovery, though it might be delayed, was the usual result. Embolism was one of the possible consequences. It might be pulmonary, cardiac, or cerebral, and might be quickly fatal. The possibility of this occurrence at a late period after an operation indicated that weak and exhausted patients should not be allowed to get up for a long time after the operation.

Postoperative Embolism.—Dr. E. Boise, of Grand Rapids, Mich., had found that this condition affected the pulmonary artery and its branches in the majority of cases. Normal blood did not coagulate in normal vessels, and an embolus presupposed a thrombus from which it was detached. For the formation of a thrombus there must be fibrinogen and calcium salts which were normal to the blood, and a nucleoproteid, which was never in normal blood, being formed by the degeneration of blood plates and leucocytes. Anæmia, chlorosis, sepsis, excess of calcium salts, slowing of the blood current, traumatism, inflammation of the walls of the vessels, pressure, and many other conditions might predispose to the formation of thrombi conditions which called for operative measures frequently involved one or another of the foregoing causes. Thus, fibroid tumors, which were most frequently followed by thrombosis and embolism after their removal, might be said to predispose to such complications, owing to their frequent coincidence with excess of calcium salts in the blood, degeneration of the heart muscle, consequent imperfect contractions and residual blood, with retardation of the blood flow and predisposition to heart clot. The latter condition had often been observed in the right side of the heart, and was followed by fatal embolus in the lung. Signs of impending thrombosis were weakness and rise in the pulse and temperature. Precautionary measures for the prevention of abnormal coagulability of the blood consisted in the use of abundance of alcohol and citric acid, the withholding of milk, the avoidance of hæmorrhage at the operation, so far as possible, also the avoidance of motion and excitement after the operation. When pulmonary embolism occurred, oxygen should be freely administered.

Dr. Reynolds, of Boston, regarded a varicose condition of the veins of the broad ligaments as an important predisposing factor in the formation of thrombi. In case congestion was present from this or any other cause, he recommended free depletion by means of glycerin tampons.

Dr. Currier, of Mt. Vernon, N. Y., thought it very important to consider the question of early getting up after severe operations, as this might possibly be a cause of embolism. He deprecated the habit of some surgeons of letting their patients get up within two or

three days after an operation, and sending them home while the wound was yet unhealed. If thrombosis had already developed, it would be easy to understand how embolism, with a fatal consequence, might result from disregard of the physiological requirement of rest after great disturbance of the physical equilibrium.

Dr. WATKINS, of Chicago, was of the opinion that thrombosis was an evidence of infection in all cases, for it was not likely to occur in the noninfectious diseases. It was well known that it was possible for bacteria to penetrate the unbroken tissues; it was therefore unnecessary to premise a wounded tissue as the avenue for their entrance.

Dr. BALDY thought there was a predisposition to thrombosis in operations for myomata, and less frequently in operations for inflammatory conditions. Fibroid tumors were very apt to be associated with bleeding, which would suggest careful consideration of the condition of the blood. While he did not think it wise to let a patient get up too soon after an operation, he had not observed that thrombosis was unusually common in those who had been allowed to get out of bed within a few days from an operation.

Dr. BROUN, of New York, narrated an interesting case, illustrated with photographs, in which occlusion of the left subclavian artery had followed supravaginal hysterectomy.

Dr. CLARK, of Philadelphia, believed there were many causes for thrombosis, including traumatism of the vessels, blood dyscrasia, hæmorrhage, etc. He did not consider sepsis one of the frequent causes, and in many cases it was not present.

Dr. DÜHRSSEN, of Berlin, Prussia, agreed with those who regarded blood dyscrasia as a cause of thrombosis, but not with those who attributed it to sepsis. He was greatly opposed to the plan of allowing a patient to get up within two or three days from an operation.

Dr. EDEBOHLS had met with ten cases of thrombosis in his practice. These were mostly in cases in which the kidneys had been operated upon; hence it was not alone the operations upon the pelvic and genital organs which were followed by thrombosis. He did not regard sepsis as a cause, nor had he observed that those who suffered with it had bene allowed to get up too soon.

Dr. SMITH narrated a case which he had followed with most careful observation from day to day, but at no time could he discover that there was any involvement of the heart.

Dr. NORRIS, of Philadelphia, reported three cases in which he believed thrombosis was due to the violence with which the Credé method of expressing the placenta had been used. He recognized many causes, but did not believe that early getting up was one of them. The theory of blood dyscrasia was most alluring to him, and he believed that an infectious condition of the blood frequently was present before an operation, thus preparing the way for the complication in question.

Dr. NEWMAN, of Chicago, regarded as causes of thrombosis the susceptibility of the patient, traumatism, and the condition of the blood. Infection in such cases was a relative term, and he believed thrombosis could occur after a perfectly clean operation.

DILATATION VS. INCISION OF THE PARTURIENT UTERUS.

Artificial Dilatation of the Cervix Uteri. Indications and Method.—Dr. G. T. HARRISON, of New York, announced as indications local morbid conditions, including chronic inflammation, syphilitic induration, carcinoma, hypertrophy, eclampsia, prolapse of the umbilical cord, partial placenta prævia, a dead fœtus with beginning sapræmia, etc. Causes were also present in faulty presentations, and in premature separation of the placenta with concealed hæmorrhage. As to the methods of dilatation, the manual methods were useful when judiciously practised. Objection was expressed to the combined method of Hicks, unless the os was sufficiently dilatable to admit the hand. Hydrostatic dilators were often effective, but laceration would sometimes occur with any method of dilatation. The metreurynter was a valuable instrument, but in some cases it did not work quickly enough. Bossi's dilator was objected to on the ground that it did not act physiologically, and it was apt to cause laceration if a primary degree of dilatation was not present when it is introduced. The same objection would apply to Harris's instrument. It was impossible to say in advance in a given case how much dilatation would be borne without tearing. The vaginal Cæsarean section was regarded as a most valuable expedient when rapid delivery was required.

Dilatation of the Parturient Uterus.—Dr. P. A. HARRIS, of Paterson, N. J., presented a paper referring to his method of manual dilatation, and also to instrumental dilatation by means of an instrument devised by him. He had used his method of dilatation twenty-two years, and had described it at the Pan-American Medical Congress in 1893. A far greater tonic strain could be applied to the uterine muscle by this than by any other manual method, and with less fatigue to the operator. The dilating force was exerted by the flexor muscles of the fingers and hands. Objections to dilating efforts upon the cervix were to be found in the existence of cancer and in the presence of scar tissue resulting from a previous parturition or from an operation upon the cervix. The average time required for safe dilatation of the cervix to a circumference of eleven or twelve inches was forty-five minutes. If the cervix was not effaced, the average time would be ninety minutes. The hand as a dilating instrument was nearly always available, but the length of time which might be required to dilate effectively was somewhat fatiguing and might entail the introduction of septic material into the vagina and uterus. The instrument which was presented was easily introduced and would dilate any cervix that was dilatable. It had a dynamometer which recorded with accuracy the amount of pressure used, and informed the operator whether the cervical ring was, in fact, dilating. By reason of its safety device laceration was impossible if the instrument was properly used. It should be carefully studied and thoroughly comprehended before it was put to practical use.

Advantages of Bimanual Dilatation of the Gravid and Parturient Uterus.—Dr. J. C. EDGAR, of New York, admitted that no method of manual dilatation could entirely supersede instrumental dilatation and incision, although the latter would seldom be required. Methods of dilatation now in use included the uterine and vaginal tampon, hard dilators and tents, hydrostatic dilators, superficial and deep incisions of the cervix, and vaginal Cæsarean section. All of them were applicable in suitable cases. Dilatation by hydrostatic bags, by the fingers of one or both hands, and by branched steel instruments was usually feasible and was preferable to incisions. The best method of dilatation was that which most closely imitated Nature. The fingers of both hands were preferable to those of one hand in dilatation, and the process might be completed by the aid of the Bossi instrument. This process might also be reversed, and this was preferable to complete dilatation with the Bossi instrument. The vaginal Cæsarean section was defective in that it did not allow for dilatation of the vagina. The bimanual method of dilatation was preferred by the author to all other methods. It could be continued when a part of the fœtus had already been extracted.

Dilatation vs. Incision of the Gravid Uterus.—Dr. GRANDIN, of New York, would consider the subject from an elective and from an emergency standpoint.

Incisions should not be made if delay was possible. Dilatation was indicated in pelvic contraction, in impending toxæmia, and usually in placenta prævia. Incision was indicated in acute toxæmia and urgent placenta prævia. Abdominal incision was indicated in pelvic contraction if delivery by dilatation or vaginal incision was doubtful. The Bossi dilator was to be condemned; the educated hand was preferable. The vaginal Cæsarean section was preferable to cervical incision in the few cases in which either was demanded.

Vaginal Cæsarean Section.—Dr. DÜHRSSEN, of Berlin, stated that he had first described this operation in 1895. A vaginoperineal incision was first made when necessary, and then incisions were made in the anterior and posterior walls of the cervix, extending through the os internum. This was followed by turning and extraction or by extraction with forceps, according to the indications. The indication for the operation was a nondilatable cervix, but skill on the part of the operator was essential. The obstruction to delivery in such cases might be absolute or relative. Eclampsia was an indication for the operation, for it was due to an intoxication and required immediate relief. Placenta prævia was also an indication.

The operation is not attended by excessive hæmorrhage. The author's method of cervical incisions might be used instead of the Cæsarean section if the condition was not urgent. In cases of dying women, or apparently dying women, the vaginal Cæsarean section was a means of saving the life of the child. The Bossi method of dilatation was absolutely repudiated by the author, as it led to dangerous lacerations and exposed to infection. The vaginal section usually resulted in saving the lives of both mother and child, and was recommended in cases in which there was only moderate contraction of the pelvis.

Dr. REAMY, of Cincinnati, believed in the efficiency of manual dilatation of the cervix, using the fingers of the dilating hand as a cone. He had advocated this method since 1872.

Dr. POMEROY, of Brooklyn, presented a series of hydrodynamic bags which he asserted were superior to the hydrostatic bags now in use, the latter having no dilating force. His instrument was a double compartment rubber bag, in two or more sizes. It was introduced like the ordinary hydrostatic bag, and the upper chamber was then dilated, apparently at or within the os internum, being discoidal in form. Below it was the second chamber, which was cylindrical in form, with a slight curve. This was next dilated, and the combined tube might then be drawn through or it might be expelled by the uterine contractions. A larger instrument could then be introduced, and dilatation completed. The experience of the author with these instruments had thus far been very satisfactory.

Dr. FRY, of Washington, objected to all instruments of the Bossi type, the bimanual method of dilatation being preferred by him. The vaginal Cæsarean section was the best operative procedure when rapid delivery was essential. This was especially the case in eclampsia and less frequently in placenta prævia when, for any cause, the Braxton Hicks method was inapplicable.

Dr. GORDON, of Portland, Me., thought a greater degree of skill was required for the vaginal than for the abdominal Cæsarean section, and that in the former there was also a probability of abundant hæmorrhage.

Dr. DAVIS, of Philadelphia, believed that slow methods of dilatation were desirable in certain conditions, as for retained placenta or a dead fœtus. The size of the vagina was also a consideration of importance. He also approved of the slow method of dilatation in most cases of eclampsia, using as additional aids venesection, the tampon, etc. He was not in favor of the Bossi dilator for placenta prævia, and, on the other hand, the pressure from hydrostatic bags was not always favorable. Manual dilatation was to be applied in accordance with the conditions in a given case. He could see no advantage in vaginal over abdominal Cæsarean section.

Dr. NORRIS, of Philadelphia, believed that the conditions in a given case should always indicate the appropriate treatment. Eclampsia, in his opinion, did not necessarily call for rapid delivery. Then, too, it should not be forgotten, concerning Cæsarean section, that either variety might be attended by a high mortality. Placenta prævia, even with a rigid cervix and profuse hæmorrhage, could be successfully treated otherwise than by vaginal Cæsarean section. One of the clear indications for the vaginal Cæsarean section was accidental hæmorrhage with an undilated cervix. He did not object to dilatation with the Bossi instrument to seven or eight centimetres. But beyond that point he preferred the use of bags, delivery being then completed by forceps or version.

Dr. HARRIS thought his method of dilatation would not rupture the membranes if properly used. He believed the vaginal Cæsarean section was most valuable in certain cases. He disapproved of the use of bags, as they were usually too slow in their action.

Dr. EDGAR preferred the Bossi dilator to the one devised by Harris, as the latter was the more complicated. He objected to the use of bags, fearing that they might burst, in which case serious injury might result.

Dr. DÜHRSSEN cited statistics to show that the mortality from the abdominal Cæsarean section was greater than by the vaginal method. The objection that one could not see what he was doing by the vaginal method was not well founded when the operation was properly performed, and it was less dangerous. He reiterated his confidence in the vaginal method for placenta prævia.

(*To be continued.*)

Book Notices.

Surgical Nursing and The Principles of Surgery for Nurses. By RUSSELL HOWARD, M. B., M. S. (Lond.), F. R. C. S. (Eng.), Lecturer on Surgical Nursing to the Probationers of the London Hospital; Surgeon to Out Patients, Royal Waterloo Hospital for Children and Women; Surgical Registrar, London Hospital. London: Edward Arnold, 1905. Pp. xvi-318.

The author has made his lectures on surgical nursing to the probationers at the London Hospital the basis of this book, in which he gives briefly and concisely the principles upon which modern surgical treatment is founded. The work of the surgeon is greatly facilitated by a well trained nurse who can carry out the preparation of a patient for an operation and see to the routine after treatment, and this manual is a good guide for those in training.

A Manual and Atlas of Dissection. By SIMON MENNO YUTZY, M. D., Instructor in Osteology and Demonstrator of Anatomy in the University of Michigan. With 314 Illustrations. With an Introduction by J. PLAYFAIR MCMURRICH, A. M., Ph. D., Professor of Anatomy, University of Michigan. Philadelphia: P. Blakiston's Son & Company, 1906. Pp. xi-256.

This volume is intended to be a topographical index to direct the student in dissection, so that he will obtain from it only a list of the structures he should find and study in the dissection of any part, for a complete description of which he must refer to his textbook. The figures are taken principally from Morris's and Holden's works, and the author's experience as a teacher has effected an arrangement likely to be very useful to the student.

Miscellany.

Wounds in the Field.—Gill, in discussing the immediate treatment of extensive wounds on field service, lays stress on the following points: 1. The immediate application of an antiseptic lotion to large wounds. 2. To provide the necessary antiseptic the addition of tabloids of perchloride of mercury to the first field dressing packet is suggested. 3. Following the first dressing a period of rest may be allowed which is highly convenient to the medical staff and conducive to the well being of the patient. 4. Removal by ambulance transport to field hospital where operation may be undertaken on a patient whose vital powers have largely recovered from the shock consequent on his wounds. —*Lancet*, May 26, 1906.

The General Hospital of Rome.—This institution, the official name of which is "Policlinico Umberto I," was founded by Baccelli and occupies an imposing group of buildings between Porta Pia and Porta San Lorenzo, in the centre of a quadrangle of one hundred and sixty thousand square metres. The institution is ideally situated away from the noise of the city. on an elevated plateau. In the centre of the group is the administration building, containing the offices. To the right is the medical division, which contains four clinics, the medical, the neurological, the dermatological, and the pædiatric. On the left side is the surgical division, including three clinics, the surgical, the nose, throat and ear clinic, and the opthalmological clinic. In a separate building, situated at the northeast angle of the grounds, completely isolated from the rest of the institution, is the obstetrical and gynæcological clinic. There are, in addition, separate buildings for pathological research. Parallel to the group of buildings occupying the front of the grounds is a second group of structures, the centre of which is occupied by the kitchens and the hydrotherapeutic establishment. On either side of this central building are ten hospital pavilions, some of which as yet are not completed, but which when finished will accommodate 860 patients. A third group of buildings, separated from the clinical division, comprises the anatomical institute, the laundry, and the isolation pavilions for infectious cases. Other separate buildings are provided for the pharmacy, the chapel, the heating and ventilating plants, the electric lighting plant, the disinfecting plant, and the morgue. The system of heating is by means of hot air through steam coils, a system which is declared to be the best from the hygienic viewpoint. The stream of steam thus supplied is used also for disinfection, for baths, for kitchen purposes and for driving apparatus in the laboratory, etc. The various buildings are connected by means of convenient galleries, both underground and on the surface.

An interesting feature of the article describing the new institution is the mention of the various prominent hospitals and medical schools of the United States with which the Policlinico is compared. "In order to find an institution comparable to our Policlinico we must cross the Atlantic and examine the medical institutions of the United States, some of which truly reveal the bold initiative and the financial power of the great American Union." Johns Hopkins Hospital shows a construction which closely resembles that of the Policlinico, and so does the Boston City Hospital, an institution situated in the Athens, or rather the Edinburgh of the United States, the city whose medical schools enjoy a reputation greater than those of its rivals, New York and Philadelphia. The Policlinico may also be compared, according to the *Gazetta*, to "the colossal structure of the University of Chicago, which that city owes to the generosity of John Rockefeller, the Petroleum King, who has given 35,000,000 francs toward its foundation, and also with the less modern but none the less imposing buildings of the Cooper Medical College." Cuts representing the buildings of the various American institutions mentioned are included in the article. The legend accompanying the view of the buildings at Chicago reads: "General View of the Rockefeller University."—*Gazzetta degli Ospedali e delle Cliniche*, April 15, 1906.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending July 6, 1906:

Places.	Date.	Cases.	Deaths.
Smallpox—United States.			
Connecticut—Stamford	June 1-30	1	
Florida—Brevard County	June 23-30	1	
Florida—Columbia County	June 23-30	4	
Florida—Duval County	June 23-30	3	
Florida—St. Johns County	June 23-30	1	
Georgia—Sapelo Island	June 29	1	
Louisiana—Shreveport	June 23-30	2	1
Massachusetts—New Bedford	June 23-30	6	
Michigan—Detroit	June 23-30	1	
Nebraska—Omaha	June 8-23	5	
Smallpox—Insular.			
Philippine Islands—Manila*	Apr. 21-28	1	
Smallpox—Foreign.			
Argentina—Buenos Ayres	Apr. 1-30		159
China—Hongkong	May 5-12	8	6
France—Paris	June 2-16	13	
Germany—Bremen	June 9-16	1	
Great Britain—Liverpool	June 9-16	1	
Great Britain—London	June 9-16	1	
Greece—Athens	June 4-11		5
India—Bombay	May 29-June 5		7
India—Calcutta	May 19-26		35
India—Karachi	May 27-June 3	16	6
India—Madras	May 26-June 1		9
India—Rangoon	May 19-26		12
Italy—General	June 7-14	32	
Japan—Yokohama	May 6-20		2
Russia—Moscow	June 2-9	6	4
Russia—Odessa	June 2-9	6	2
Yellow Fever—Foreign.			
Honduras—Pimienta	June 13-16	13	
Mexico—Merida	June 17-23	17	7
Cholera—Insular.			
Philippine Islands—Provinces	Apr. 21-28	17	16
Cholera—Foreign.			
India—Bombay	May 29-June 5		16
India—Calcutta	May 19-26		25
Plague—Insular.			
Philippine Islands—Manila	Apr. 21-28	1	1
Plague—Foreign.			
China—Hongkong	May 5-12	96	89
Egypt—Alexandria	June 8-12	5	3
Egypt—Keneh	June 9-10		3
Egypt—Port Said	June 8-9	2	1
India—Bombay	May 29-June 5		180
India—Calcutta	May 19-26		43
India—Karachi	May 27-June 3	80	73
India—Rangoon	May 19-26		39
Peru—Lima	May 25-31	1	
Peru—Paita	May 25-31	1	1
Peru—Trujillo	May 25-31	1	

* Received out of date.

Public Health and Marine Hospital Service:

List of Changes of Station and Duties of Commissioned and Non-commissioned Officers of the Public Health and Marine Hospital Service, for the seven days ended July 4, 1906:

ANDERSON, JOHN F., Passed Assistant Surgeon. Directed to proceed to Charlotte, N. C., for special temporary duty, upon completion of which to rejoin station in Washington, D. C.

ASHFORD, P. A., Assistant Surgeon. Granted leave of absence for seven days, from June 2, 1906, under Paragraph 191 of the Regulations.

CLEAVES, F. H., Acting Assistant Surgeon. Granted leave of absence for fourteen days, from July 14, 1906.

GIBSON, R. H., Pharmacist. Relieved from duty at Vineyard Haven, Mass., and directed to proceed to New

Orleans, La., reporting to the Medical Officer in Command for duty and assignment to quarters.

LUMSDEN, L. L., Passed Assistant Surgeon. Relieved from duty, U. S. Revenue Cutter Service Depot, and directed to proceed to Washington, D. C., reporting to the Director, Hygienic Laboratory, for temporary duty.

MORRIS, G. A., Pharmacist. Granted leave of absence for thirty days, from August 1, 1906.

OAKLEY, J. H., Passed Assistant Surgeon. Granted leave of absence for two days, from June 29, 1906.

RAMUS, C., Passed Assistant Surgeon. Granted leave of absence for fifteen days, from July 1, 1906.

RICHARDSON, S. W., Pharmacist. Relieved from duty in New Orleans, La., and directed to proceed to Vineyard Haven, Mass., reporting to the Medical Officer in Command for duty and assignment to quarters.

ROWLES, J. A., Acting Assistant Surgeon. Granted leave of absence for nine days, from July 3, 1906.

STILES, CH. WARDELL, Chief, Division of Zoology. Granted leave of absence for three days, from June 25, 1906.

STIMSON, A. M., Assistant Surgeon. Relieved from duty at Ellis Island, N. Y., and directed to proceed to Washington, D. C., reporting to the Director, Hygienic Laboratory, for temporary duty.

Appointments.

Dr. Joseph G. Wilson was appointed an acting assistant surgeon, for duty at Ellis Island, N. Y.

Dr. J. G. Siffer was appointed an acting assistant surgeon, for duty at Port Huron, Mich.

Boards Convened.

A board of officers was convened, to meet at the Hygienic Laboratory, Washington, D. C., July 2, 1906, for the purpose of making an investigation of the origin and prevalence of typhoid fever in the District of Columbia. Detail for the board: Passed Assistant Surgeon M. J. Rosenau, Director of Hygienic Laboratory, Chairman; Passed Assistant Surgeon L. L. Lumsden; J. H. Kartle, Chief of Division of Chemistry, Recorder.

A board of officers was convened, to meet at the Bureau, Washington, D. C., August 6, 1906, for the purpose of examining candidates for appointment to the position of Assistant Surgeon in the Service. Detail for the board: Surgeon D. A. Carmichael, Chairman; Surgeon L. L. Williams; Passed Assistant Surgeon Joseph Goldberger, Recorder.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army for the week ending July 7, 1906:

EKWURZEL, GEORGE M., Captain and Assistant Surgeon. Relieved from further duty at the United States Military Academy, and from temporary duty at Fort Hamilton, N. Y., and ordered to Fort Keogh, Mont., for duty.

GEDDINGS, EDWARD F., Captain and Assistant Surgeon. Relieved from duty at Fort Keogh, Mont., and ordered to report in person to the commanding general, Department of California, for assignment to duty at the General Hospital, Presidio of San Francisco, Cal.

GRAY, WILLIAM W., Lieutenant Colonel and Deputy Surgeon General. Sick leave of absence further extended one month.

MILLER, E. W., First Lieutenant and Assistant Surgeon. Ordered to proceed from Fort Clark, Texas, to Fort Sam Houston, Texas, for temporary duty.

RUFFNER, E. L., Captain and Assistant Surgeon. Leave of absence extended two months.

SCOTT, GEORGE H., First Lieutenant and Assistant Surgeon. Left from temporary duty at San Francisco, Cal., on ten days' leave of absence.

SHIMER, IRA A., Captain and Assistant Surgeon. Left Ancon, Canal Zone, on six weeks' leave of absence.

SMART, WILLIAM M., First Lieutenant and Assistant Surgeon. Ordered to proceed from Fort Caswell, N. C., to Camp Chickamauga Park, Ga., for temporary duty.

WILSON, WILLIAM H., Captain and Assistant Surgeon. Reports for additional duty at Fort Hamilton, N. Y., in addition to present duties in New York city.

The following named assistant surgeons have been advanced from the grade of first lieutenant to that of captain, from June 29, 1906: John H. Allen, Horace D. Bloombergh, Louis Brechemin, Jr., Roger Brooke, Charles Y. Brownlee, Carroll D. Buck, Matthew A. De Laney, John R. Devereux, Wallace De Witt, George M. Ekwurzel, Peter C. Field, George H. R. Gosman, Robert B. Grubbs, Paul S. Halloran, George P. Heard, Conrad E. Koerper, Lloyd Le R. Krebs, Patrick H. McAndrew, John A. Murtagh, Kent Nelson, Robert E. Noble, Roderic P. O'Connor, Robert U. Patterson, William W. Reno, Herbert G. Shaw, Edmund D. Shortlidge, Verge E. Sweazey, Robert M. Thornburgh, James W. Van Dusen, Gideon McD. Van Poole, Clement C. Whitcomb, Eugene R. Whitmore, William P. Woodall.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending July 7, 1906:

BACKUS, J. W., Assistant Surgeon. Ordered to the *Franklin.*

GARRISON, P. E., Assistant Surgeon. Ordered to the Naval Hospital, Philadelphia, Pa.

RENNIE, W. H., Assistant Surgeon. Ordered to the *Lancaster* on July 12, 1906.

ROSSITER, P. S., Assistant Surgeon. Ordered to the Naval Academy.

RYDER, C. E., Assistant Surgeon. Ordered to the Navy Yard, Boston, Mass.

Births, Marriages, and Deaths.

Married.

ALLEN—SCHWARTZ.—In Albany, N. Y., on Wednesday, June 27th, Dr. J. Camp Allen and Miss Lillian Schwartz.

BARTON—DAY.—In Jamestown, N. Y., on Wednesday, June 27th, Dr. S. Taylor Barton and Miss Jean Patterson Day.

EBERLE—EVERITT.—In Brooklyn, N. Y., on Tuesday, July 3rd, Dr. Edward Eberle and Miss Lilly P. Everitt.

HEWITT—KELLER.—In Philadelphia, on Wednesday, April 25th, Dr. Clarence Elbert Hewitt, of Springfield, Massachusetts, and Miss Jane Morris Keller.

MASON—FULLER.—In Washington, D. C., on Monday, June 25th, Dr. Robert French Mason and Miss Frances Louise Fuller.

SOUTHARD—AUSTIN.—In Boston, on Wednesday, June 27th, Dr. Elmer Ernest Southard and Dr. Mabel Fletcher Austin.

Died.

ALLEN.—In Darlington, Maryland, on Sunday, June 24th, Dr. Robert Gover Allen, aged eighty-four years.

CHAMBERLAIN.—In Dunmore, Pennsylvania, on Monday, July 2nd, Dr. G. J. Chamberlain, aged ninety-one years.

CONWAY.—In Millville, Massachusetts, on Wednesday, June 27th, Dr. Charles Conway.

DEVER.—In Clinton, N. Y., on Sunday, June 24th, Dr. Isaiah Dever, aged seventy-two years.

FABER.—In Philadelphia, on Saturday, June 23rd, Dr. Charles F. Faber, aged forty-one years.

FRENCH.—In Chicago, on Monday, June 25th, Dr. Samuel French, aged eighty years.

GEDDINGS.—In Atlanta, Georgia, on Sunday, June 24th, Dr. Edward Geddings, aged seventy-three years.

GOODELL.—In Homer, N. Y., on Sunday, July 1st, Dr. Rollin A. Goodell, aged sixty-five years.

GRANT.—In Washington, D. C., on Thursday, June 28th, Dr. Edwin H. Grant, aged seventy-six years.

HOPKINS.—In Frederick, Maryland, on Tuesday, June 26th, Dr. Howard H. Hopkins, Sr., aged fifty-eight years.

PAUL.—In Philadelphia, on Friday, June 29th, Dr. Comegys Paul, aged fifty-nine years.

SPAULDING.—In Kansas City, Missouri, on Sunday, June 24th, Dr. Charles Lester Spaulding, aged thirty-seven years.

TOWAR.—In New York, on Saturday, June 30th, Dr. Charles G. Towar.

New York Medical Journal

INCORPORATING THE

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Original Communications.

ELECTRICAL ORIENTATION IN SPINAL ANÆSTHESIA.

BY J. LEONARD CORNING, M. D.,
New York.

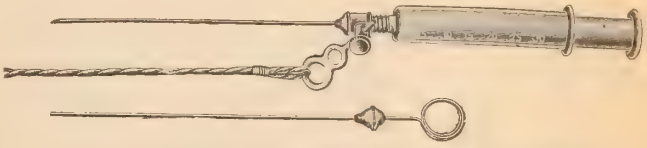
By most physicians who have employed spinal anæsthesia the outflow of the cerebrospinal fluid has been accepted as the only reliable sign that the membranes of the cord have been pierced. This is a mistake. Six years ago, in adverting to my discovery of spinal anæsthesia, I gave with some detail various measurements, by the use of which the deposition of the anæsthetic within the membranes might be assured.[1] I might have added a further method sometimes invoked by me in my more developed undertakings with spinal anæsthesia, *i. e.*, the thrusting forward of the needle, between the third and fourth lumbar vertebræ, till its point is halted by the anterior face of the vertebral canal; then its withdrawal to the extent of about a quarter of an inch, which leaves the point well within the membranes, not far from the centre of the canal. It is not, however, with a view to discussing any of the means of orientation heretofore described either by myself or others, that I have ventured upon this brief writing. What I am here concerned with is briefly to set down a method of orientation involving, so far as I know, quite a different principle from any heretofore recorded in the literature of the subject. This principle makes use of the electrical excitation of the sensory filaments of the cauda equina, or of that of the sensory tract in the posterior columns of the spinal cord, as the means of determining the penetration of the membranes.

My thought, then, broadly expressed, was to stimulate the sensory tract in its continuity and to utilize the sensations referred to the periphery —in the lower extremities—as a signal.

To give practical effect to the principle, I had made a slender, hollow needle, five inches long, provided at the point of attachment of the syringe with an eye and screw, by which means the end of an insulated conducting cord may be secured (see cut). The other end of this cord was attached to one of the poles of a Faradic battery. A wire stylet for the hollow needle was also provided. The shaft of the latter—the hollow needle—was insulated throughout its entire length, save only at the point, where about one thirty-second of an inch was left bare. A coating of shellac of fine quality, employed to achieve this insulation, offered but insignificant hindrance to the introduction of the needle. To make the completion of the circuit possible a broad sponge, attached to the remaining pole of the battery by an insulated conducting cord, was placed upon the abdomen and held in position by an elastic belt. From these dispositions it is obvious that the circuit was closed upon the introduction of the needle.

A brief synopsis of the two cases in which I have tried this method of orientation in the induction of spinal anæsthesia will best serve to bring out the chief points of interest:

CASE I.—In the case of Mr. K., for long a sufferer from sciatica, all the usual means of treatment, both local and general, having been tried to no great purpose, I decided, during a particularly severe access of pain and stiffness, to make trial of spinal anæsthesia,



Showing hollow needle with conducting cord and syringe attached; also stylet withdrawn.

invoking for purposes of orientation the procedure previously outlined.

Placed in a sitting posture, his back bared, his body bent forward, I injected a little cocaine into the skin and subcutaneous tissue between the third and fourth lumbar vertebræ, employing for the purpose a solution of one half per cent. The broad sponge electrode, duly moistened, was then fastened over the abdomen, and the current turned on. Upon this I proceeded with the introduction of the needle, in which I had previously inserted the stylet, thrusting in quite slowly as I neared the canal, till, having pierced the ligament and gone a little way beyond, Mr. K. exclaimed suddenly, "I feel a pain in my leg and foot." The further propulsion of the needle was immediately stopped and the current shut off. I had pierced the membranes, then, according to all foreseeing; but for a double assurance I withdrew the stylet, when suddenly! out ran the cerebrospinal fluid. The injection of the anæsthetic—fifteen minims of a three per cent. solution of cocaine—was then accomplished without incident; and anæsthesia, extending some distance above the point of injection and in other respects as perfect as I have ever been able to obtain, ensued within a few minutes. With its appearance came, of course, cessation of pain in the affected sciatic nerve, this immunity lasting, however, but a short time after the disappearance of the anæsthesia.

I may add that the sudden pain in the leg and foot that

[1] *Medical Record*, October 20, 1900.

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caused the exclamation of Mr. K. could hardly have been due to pricking of the filaments of the cauda by the needle; for on shutting off the current the pain ceased immediately. Nor while there was no current did a further thrusting in of the needle give rise to painful sensations in the extremity; yet, when the current was allowed to circulate once more, the same painful sensations in the leg were again evoked. The point of the needle must, therefore, have slipped between the filaments of the cauda; and, save for the presence of the electric current, could have afforded no reliable signal of its exact position.

CASE II.—Mr. R., an ataxic, of an analytical turn of mind, is given to reading scientific journals, and more particularly those dealing with neurology. Like many ataxics, he is continually questing for some new mode of treatment. Thus, chancing upon certain optimistic reports of ataxics who had been benefited by spinal anæsthesia, he insisted that I should try it in his case, with a view, as he said, to aborting one of the painful crises, which in him persisted for from twenty-four to thirty-six hours. As no conservative outgivings from me could dampen his enthusiasm, and perceiving that he was set in his determination, I at length reluctantly consented. The various steps in the technics were substantially as described in the previous case, save that the injection was made between the eleventh and twelfth dorsal vertebræ, and the needle was introduced without the stylet. In selecting the point of injection, I was actuated by a desire to determine whether stimulation of the posterior columns with the electric current would also give rise to sensations in the lower limbs which might be used as a signal that the membranes had been penetrated, and that the point of the needle was in contact with the cord. To this end I warned Mr. R. to speak out promptly as soon as he should feel any unusual sensations in his legs. There was some difficulty at first in entering the canal, but after several abortive attempts the needle, to my relief, slid in, followed almost immediately by the appearance, at its upper end, of a few drops of cerebrospinal fluid. Coincidently with its appearance, or nearly so, Mr. R. crooked his left leg suddenly, exclaiming, "Ha, I feel it! Stop! It hurts!" Holding the needle in place with my left hand, and reaching toward the battery with my right, I shut off the current. "How now?" I queried; "do you feel it still?" "No," he answered, "not in the leg; but my back feels sore."

Deciding that now I had a sufficient warrant, I proceeded with the injection—ten minims of a three per cent. solution of the cocaine hydrochlorate. In good time—ten or twelve minutes—complete anæsthesia had occurred, extending ultimately more than a hand's breadth above the point of injection. With its appearance, and for some time after its disappearance, there was complete cessation of the ataxic pains—a phenomenon, however, often observed before, and bearing but remotely upon the theme of the present writing.

Realizing the possibility of error through the vitiating influence of suggestion, automatic or other, sometimes present in a case of this kind, and appreciating that Mr. R. might, perhaps, have mistaken a sudden access of the lancinating pains peculiar to his disease for phenomena evoked by the current, I determined to ascertain whether physiological induction afforded any grounds for believing that an electrical current, applied directly to the posterior aspect of the cord could provoke such painful sensations as those which caused the exclamation of Mr. R. My inquiry in this direction, if not entirely conclusive, was by no means fruitless; for in the course of a considerable rummage of the literature bearing on the physiology of the cord, I ascertained that a distinguished physiologist, Dr. Austin Flint, had, as long ago as 1863, demonstrated on a living dog by the application of both mechanical and electrical stimulation that "the surface, at least, of the posterior columns is very sensitive, especially near the posterior roots of the nerves."[2] It is, of course, not explicitly stated that the pain experienced by the dog was felt in his legs; nor in an animal could the demonstration of a fact of that kind well have been attained in default of the aid to be had from interrogation.

It would seem, however, that by supplementing the result of this experiment with the analogical proof adducible from a consideration of the characteristic cord lesion of ataxia and its attendant symptoms, we are justified in concluding, without doing violence to probability, that some of the pain experienced by the dog was felt in its legs. As to the strength of the current to be employed, I would state that it should, in any event, be strong enough to give rise to a considerable degree of frontal pain when the point of the needle is applied above the supraorbital nerve.

As to the fate of the plan of electrical orientation here described it need hardly be observed that further cautious and repeated trials can alone determine its ultimate usefulness. This applies with special emphasis to attempts that, in future, may be made to invoke its assistance when injecting upon the cord. In the lumbar region, at any rate, when the injection is made among the filaments of the cauda, it should prove trustworthy, if properly carried out, quite irrespective of whether the cerebrospinal fluid flows from the needle or not.

53 WEST THIRTY-EIGHTH STREET.

TENDON TRANSPLANTATION AND GRAFTING FOR PARALYTIC DEFORMITIES.

BY STEWART L. McCURDY, M. D.,

Pittsburgh,

Professor of Orthopædic and Clinical Surgery, West Pennsylvania Medical College; Orthopædic Surgeon, Presbyterian and Columbia Hospitals, etc.

No greater advance has been made in orthopædic surgery, or perhaps in any other branch of surgery for that matter, in ten years, than the perfection of the various operations upon tendons and muscles, variously known as tendon grafting, tendon transplanting, and replanting, and other transfers of muscular power from original positions to new ones.

There appears to be a very wide range of application in these operations. It has been successfully practised in almost every part of the muscular system. Its practical application, however, finds its greatest field of usefulness in restoring paralytic deformities of the feet and hands. At these points, where there are so many tendons, any one muscle may be paralyzed, and another tendon with a live muscle transplanted into it, thus restoring the function so perfectly as not to be missed. Indeed, entire primary groups of muscles, such as flexors, extensors, etc., may be dead and new power be furnished them from other groups.

[2] *Handbook of Physiology*, London and New York, 1905, p. 555.

By those who have not studied this subject, it may be argued that a muscle with its cortical projection centre educated to control certain action, as the extensor group, would have difficulty in taking on the new function of abduction. This is a matter requiring no serious consideration, since in no case, either in this country or Europe, has a patient operated on been unable to learn to use the transferred muscle to accomplish the new function without special training.

We have been operating upon these patients for more than ten years, but it is only during the last few years that the technics has been so perfected as to make it a most desirable resort in all paralytic conditions. I did my first operation in transplanting in 1895, and have done many tenotomies and quite a number of operations to lengthen shortened tendons, known as the Beyer's operation, as well as a few operations to transplant and replant tendons and muscles, as

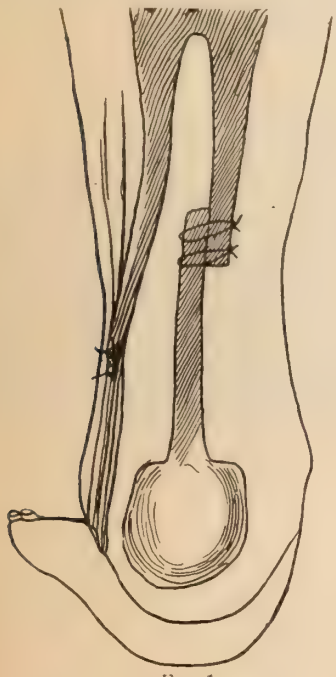


Fig. 1.

Fig. 2.

advised by Vulpius, Hoffa, Cordivilla, Borst, Seggel, Springer, and others.

Case I.—I. H., age eight years, suffering with a talipes equinovarus, as a result of anteropoliomyelitis, dating from early infancy. The desires of the operation were to restore these muscles by transferring the power from other muscles that had power, as well as to lengthen the shortened muscles. The peroneal group was paralyzed. The calf group was much shortened, and since the extensor communis digitorum and exterior proprius hallucis were the only flexors of the foot they, instead of maintaining flexion of the foot, produced a condition of claw toe. The operation performed upon this patient consisted in splitting the tendo Achillis into three portions as shown in the diagram I. The lower end of the outer and inner portions were cut from their insertion into the os calcis, while the upper end of the middle third was cut loose at the upper end quite well up to the muscle. After dissecting out the peroneus longus and brevis tendons as they pass downward back of the external malleolus, they were split through lengthwise. The outer third of the tendo Achillis was now passed through the opening made in the peroneal tendons and secured with fine silk. As the foot is flexed the second and third portions of the tendo Achillis slide upon each other as shown in the drawing. They were then sutured to-

Fig. 3.—Tendon transplanting of exterior proprius hallucis from great toe to outside of foot.

gether in their new position. Silk is always best for all tendons.

The operation upon the dorsum of the foot required a tenotomy of the extensor proprius hallucis at the great toe. An incision was made over the tendon of this muscle just below the annular ligament and dissected out. An incision was then made down to the base of the metatarsal of the little toe, as shown in diagram 2. The bone was perforated with a chisel, or a drill may be used. The tendon of the proprius was drawn from its sheath through the incision at the ankle. After making a subcutaneous channel from the ankle incision to that already made on the outside of the foot, the tendon was bodkined through under the skin where it was carried through the base of the metatarsal bone and secured with a heavy silk, No. 10 being preferred by Vulpius, Hoffa, and others.

Dr. Harry Sherman, of San Francisco, devised the operation of transferring the tendons of the extensor longus digitorum from the toes to the distant ends of the metatarsal bones. This is done by making an incision across the dorsum of the foot over the heads of the metatarsal bones. After severing the tendons they are sutured to the periosteum over the heads of the bones. Dr. Sherman advises that a wire should be passed through the foot and plaster of Paris so as to thoroughly secure the tendons to the

Fig. 4.—Tenotomy of the tendo Achillis and transplanting of all extensors of the toes to the distal ends of the metatarsal bones.—a, before; b, after the operation.

bones until union has taken place. I have not found this necessary. My practice is to split the periosteum and separate it from the bone, tuck

the end of the tendon down underneath this membrane, and thus secure it with sutures.

CASE II.—Practically the same operation was performed on the anterior surface of the foot as in the

FIG. 5.—Transplanting of extensor of great toe to outside of foot. Tenoplasty of the tendo Achillis, where scars can be seen. Range of motion is shown in the two pictures, illustrating how perfectly the transferred tendon performs its new function.

case already reported. This includes the transfer of the extensor proprius hallucis to the base of the metatarsal of the little toe, and the transfer of the extensor longus digitorum from the phalanges to the distal end of the metatarsal bones. The operation, however, on the tendo Achillis was performed substantially in a manner recently described by Beyer, which includes

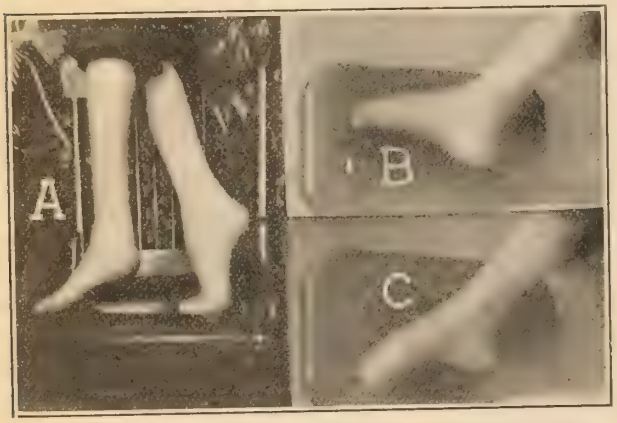


FIG. 6.—Talipes equinus shown in first figure. Second and third figures show range of motion in right foot; while not perfect, the condition is greatly improved.

the severing of the right half of the tendon near the os calcis, and the left half an inch and a half above. The foot is now forcibly flexed, and the tendon is torn longitudinally and the two halves slide upon each other within the sheath of the tendon.

The results obtained in the cases reported are shown in the photographs exhibited and case. The first shows the best flexion before the operation, and the other photographs show what can be done now. As will be observed, the foot is flexed to less than a right angle, and the outer side is elevated more than the inner side, positively demonstrating that the transplantation of the extensor proprius hallucis into the base of the fifth metatarsal bone was successful, and is doing its new duty most satisfactorily.

Three things are very essential: 1. Absolute asepsis. 2. Suturing of tendons under a moderate degree of tension. 3. Perfect retention of the member in the corrected position with plaster of Paris from six to eight weeks.

CASE III.—C. M., age seven years, infantile spinal paralysis involving external sensors of toes of both feet. Deformity, extension of right foot due to contraction of the tendo Achillis, left foot extension and inversion slight. Massage and electricity were tried for several months with but slight improvement. On May 12, 1905, an operation on the right foot was performed, springer elongation of tendo Achillis, and put up in plaster of Paris with inflection. Left foot also springer elongation of tendo Achillis. Extensor proprius hallucis, except below annular ligament, was tenotomized subcutaneously at metatarsal phalangeal joint. An incision was made over the base of metatarsal bone. A hæmostat passed at this point under skin through incision at top of ankle; the tendon of

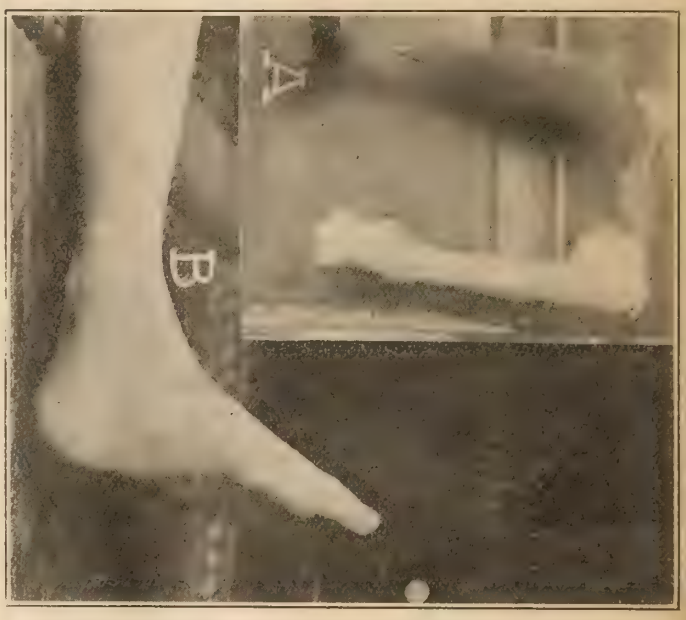


FIG. 7.—Tenoplastic lengthening of the tendo Achillis. Transfer of great toe extensor to outside of foot (see scar). Outside of foot turned up and flexed in second figure, showing action of transferred muscle.

the extensor proprius hallucis was then drawn over its sheath through the incision on top of the foot. It was here grasped by the hæmostat and drawn under the skin through the opening made on the outside of foot. The base of the fifth bone was perforated, and the tendon drawn through. It was here secured, and also secured with the periosteum on the top of the foot, a No. 8 silk being used. Care was taken after

FIG. 8.—Tenotomy of tendo Achillis. Transplantation of extensor proprius hallucis to base of fifth metatarsal bone.

the tendon was sutured to hold the foot in a corrected position for fear that it would be torn loose. The wounds were closed with silkworm gut, covered with dressing pads, cotton, and put up in plaster of Paris.

Further details and report of other cases are hardly necessary here, since routine in practice of tendon transplantations is as variable as any other branch of surgery. It is a question, first of the variety of paralysis, and, second, the power still remaining in other muscles that can be transferred from one side of the foot to another, or from a point where there is too much

Fig. 9.—Transfer of tendons of extensor communis digitorum from toes to the distal ends of the metatarsal bones, the extensor proprius hallucis to the outside of the foot, and a tenoplastic lengthening of the tendo Achillis.

power to another point where power is required.

A thorough knowledge of the anatomy is absolutely necessary before a surgeon may hope to get the best results in tendon transplantation. I desire to submit several groups of photographs to show improvement that has been made, and to emphasize the importance of giving all patients suffering with paralytic deformities the benefit of tenoplastic surgery, rather than to have them go through life an aggravated deformity.

625 Pittsburgh Life Building.

IS NEURALGIA A FUNCTIONAL DISEASE?*

A Study Based Upon the Pathological Findings of Eight Cases.

By Alfred Gordon, M. D.,
Philadelphia,
Associate in Nervous and Mental Diseases, Jefferson Medical College; Examiner of the Insane at Philadelphia General Hospital, etc.

As is well known a painful affection of a nerve may be due not only to an evident injury or to a direct inflammation of a nerve caused by pressure, tumor, hæmorrhage, toxic condition, etc., otherwise speaking, of neuritis, but also to a morbid condition in which none of the mentioned causative factors are present; we then speak of neuralgia. While the first term gives a clear idea of the morbid process, the latter implies only a subjective symptom.

In both conditions the element, pain, is present, and there is no possibility in making a practical distinction of the two forms of nerve pain. On the other hand, in a number of cases described as neuralgia the pain was found to be the result of neuritis.

A sharp distinction between neuralgia and neuritis cannot be established. Even in recent cases of ordinary neuralgia there are great presumptions in favor of a material basis. Surgery has contributed considerably to the elucidation of the pathogenesis of neuralgia. Microscopical examinations of excised peripheral nerves and Gasserian ganglia have shown that in a number of cases degenerative changes were present. More or less intense alterations of a chronic inflammatory character have been found in the ganglion, as well as in the peripheral branches. The point of contention lies in the difficulty of explaining where the primary inflammatory process is and which of the two is involved secondarily. Krause (*Die Neuralgie des Trigeminus*, 1896) believed that the changes in the Gasserian ganglion in some cases were secondary and in some primary. That an inflammation may begin in a peripheral nerve and assume an ascending character is a possibility. Kowalevsky (*Monatsschrift für Psychiatrie und Neurologie*, v. ii, p. 147, abstract) has shown that after cutting a sciatic nerve in an animal and injecting a few drops of a 5 per cent. chromic acid solution into the central end, changes in the cells of spinal ganglia were found at the end of four days.

Besides a peripheral and a ganglionic, so to speak, origin of pain in neuralgia there may be also a central. That this is true can be seen from the history of those cases in which pain is felt in another region than that of the nerve irritated; the irradiation of the pain to neighboring nerve areas is undoubtedly a central phenomenon. In the pathological studies of trifacial neuralgia some observers called attention to a third element as a possible cause of pain. Dana particularly (*Medical News*, 1891) speaks of the great rôle played by the condition of the bloodvessels of the peripheral nerves. According to him an arteritis is the chief cause of the neuralgia. Thomas (*Deutsches Archiv für klinische Medizin*, v. xliii, p. 188) and Rose (*Transactions of the Medical Society of London*, v. xv, 1892) corroborated to a large extent Dana's views.

Sifting all the recorded data concerning the pathogenesis of trifacial neuralgia one must say that while some authors place the initial lesion in the peripheral nerves, others place it in the Gasserian ganglion and still others in the bloodvessels of the nerves. The views of the majority of them are extreme. Keen and Spiller (*American Journal of the Medical Sciences*, November, 1898) are very conservative. Their careful studies of the Gasserian ganglia in eleven cases of tic douloureux led them to believe that no absolute view in favor of one or of the other possibility can be adopted, but they are inclined to believe that the primary condition is probably a neuritis.

The object of the present report is to put on record the pathological findings of eight cases of trifacial neuralgia, in which only the peripheral branches were removed. While the Gasserian ganglia were not operated upon, and it is therefore impossible to draw positive conclusions as to relative involvement of both parts of the fifth nerve, it nevertheless shows the frequency of an organic origin of the so called idiopathic neuralgia.

Case I.—A woman of sixty-five. Neuralgia for four

* Read before the College of Physicians, March 7, 1906.

years in the inferior dental nerve. Operation was performed in 1902. The nerve appeared larger and thicker than normally; it was also congested. Transverse and longitudinal sections were stained by Marchi and Weigert methods. The degeneration was marked in some sections at the periphery of the nerve bundles, in some in the centre. Some bundles were found to be completely degenerated, some only partly. Endarteritis was very much pronounced in the bloodvessels of the epineurium; the intima of some vessels was so thickened that it closed up almost entirely the lumen of the vessels. Where the endarteritis was marked, the nervi nervorum were totally degenerated. Degeneration of the latter was found in all sections. Staining with ammonium carmin shows that a great many axis cylinders have totally disappeared.

CASE II.—The same patient was operated two years later for neuralgia of the auriculotemporal branch which existed only about five weeks. The bloodvessels presented marked changes; intima thickened, torn, lumen almost entirely occluded. Adventitia was also thickened. The nerve bundles only in the vicinity of the altered bloodvessels show distinct degeneration.

CASE III.—Woman of fifty-four. Neuralgia of the superior maxillary nerve of seven years' duration. Operation in 1903. Here only the nervi nervorum showed marked degeneration, while the main nerve bundles appear to be intact. The bloodvessel changes are considerable. The intima is irregularly and markedly thickened, the elastica is torn in many places. The adventitia is also thick. The lumen is narrowed. The vasa vasorum are only to some extent involved.

CASE IV.—Man fifty-eight. Neuralgia of the inferior dental branch of two years' duration. Operation in 1904. The bloodvessels show very marked changes; the inner membrane is much thickened, the lumen is narrowed. The epineurium is also thickened. As to the nerve fibres, only those at the periphery show degeneration. With Marchi method no recent degeneration could be seen.

CASE V.—Woman of forty-three. Neuralgia of inferior dental branch of three years' duration. Operation in 1905. Only a few bloodvessels show thickening of their walls. In the immediate vicinity of these vessels some small nerve bundles are degenerated. In some places the epineurium is thickened and there the nervi nervorum are degenerated.

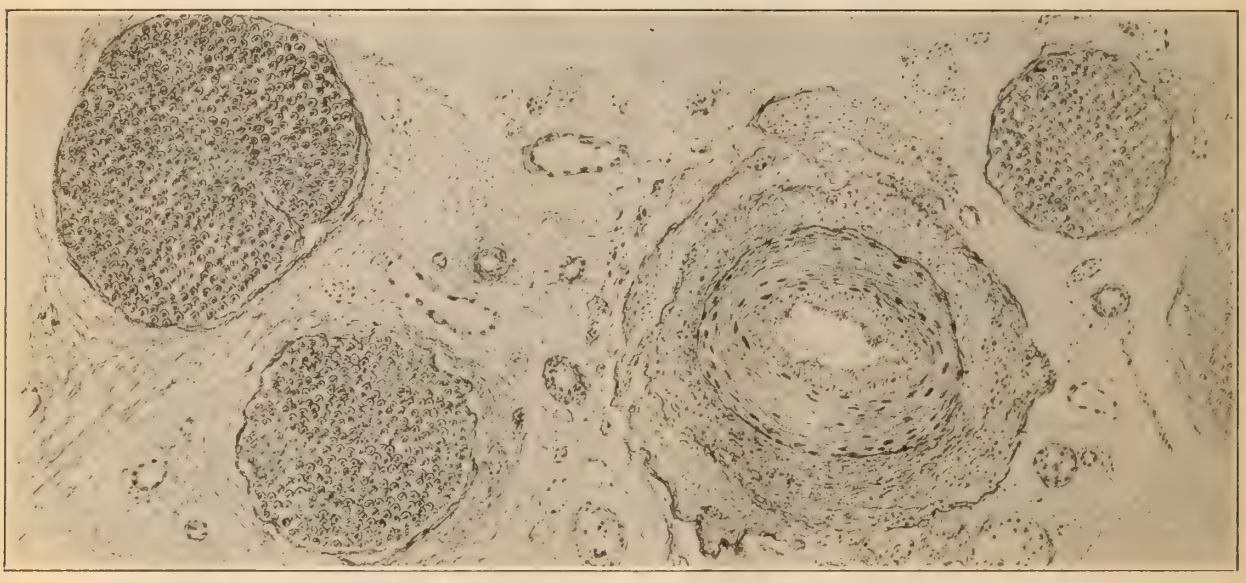
CASE VI.—Man of thirty-four. Neuralgia of the superior maxillary branch of three months' duration. Very few bloodvessels show thickening of their walls, and these changes affect only one side of the vessel. On the same side in the immediate vicinity of those bloodvessels some very small degenerated nerve bundles are

CASE VII.—Woman of thirty-six. Operated on in 1900 for neuralgia of the infraorbital nerve of seven years' duration. At the beginning, 1904, the supraorbital nerve was excised. The inferior dental nerves became painful in the middle of the same year. Six months later the latter nerve was excised. Its microscopical examination shows degenerative changes of the nervi nervorum and some thickening of the walls of the neighboring bloodvessels. The majority of the bloodvessels were normal.

CASE VIII.—Man of twenty-nine. Neuralgia of the supraorbital nerve of five months' duration. Nerve removed in 1904. A great many sections were examined and in all of them only some of the nervi nervorum showed degenerated fibres, and similarly to the last two cases they are situated in the vicinity of small bloodvessels, which presented some thickening of their walls.

RÉSUMÉ OF THE PATHOLOGICAL FINDINGS OF EIGHT CASES.

In the first four cases, viz., in patients of sixty-five, fifty-four, and fifty-eight years of age, respectively, the bloodvessels are uniformly thickened, and present a very narrow lumen; these changes are marked and found in every bloodvessel of numerous sections. In the last four cases, viz., in patients of forty-three, thirty-four, thirty-six, and twenty-nine years of age, respectively, only a few bloodvessels showed some thickening of their walls. The minimum of vascular alteration was seen in Case VI, in which an operation was performed three months after the onset of the neuralgia. As to the nerve bundles themselves, those situated in the immediate vicinity of the altered bloodvessels always showed a distinct degeneration. The degree of alteration of the bloodvessels generally speaking is in proportion with the degree of nerve degeneration and with the number of degenerated nerve bundles. Exception is found in Cases II, III, and IV, in which in spite of the generalized marked arteritis only the nervi nervorum or a few peripheral small nerve bundles were involved.



CASE VI.—See description in the text.

The duration of the disease has no special bearing upon the degree of involvement of the nerves, as it can be seen from this table:

Case I. Four years' duration; degeneration marked.
Case II. Seven years' duration; degeneration slight.
Case III. Seven years' duration; degeneration slight.
Case IV. Two years' duration; degeneration slight.
Case V.. Three years' duration; degeneration slight.
Case VI. Three months' duration; degeneration slight.
Case VII. Six months' duration; degeneration slight.
Case VIII. Five months' duration; degeneration slight.

In the light of these findings can we draw any inference as to the pathogenesis of neuralgia?

First of all, in each of the eight cases there was a peripheral nerve degeneration; in some of them the nerve bundles themselves were more or less involved, in some only the nervi nervorum was affected.

Is this nerve degeneration a primary affection or secondary to an involvement of the Gasserian ganglia? The latter were not removed from my patients. It is therefore impossible for me to ascertain their condition. Judging from the researches of others and particularly of Keen and Spiller, it is to presume that at least in neuralgias of long standing, as in Cases I, III, and V of my series, the Gasserian ganglia are affected. On the other hand, we cannot assume the position that in every case the Gasserian ganglion is primarily affected and the peripheral nerve involvement will necessarily follow. Against this view speak Cases III and V in which the neuralgia existed seven and three years, respectively, and still the peripheral nerve changes were about as moderate as in the other cases in which the neuralgia had been of only several months' standing. The history of Case II is very significant from the latter standpoint. The patient suffered for four years from a neuralgia of the inferior dental nerve. The nerve being removed showed a very pronounced state of degeneration. About two years later pain appeared in the area of distribution of the auriculotemporal nerve. Five weeks later this nerve was removed and showed some degeneration only in the vicinity of those bloodvessels which show thickening of their walls. Assuming that the Gasserian ganglion is the original cause of the excruciating pain, the pain in the auriculotemporal branch would have existed long ago. Here the pain lasted only five weeks and a degenerative peripheral condition was found.

The objection may be made that the reason of a late involvement of the auriculotemporal nerve was due to a late involvement of the cells of the Gasserian ganglia corresponding to this nerve. It is not likely that the lesion of the group of cells corresponding to the inferior dental nerve lasting four years would not spread to other neighboring cells during that period of time, and give rise to neuralgia of other branches emanating from the same ganglionic body. As the patient was free from pain during two years, I am justified to presume that the pain which appeared in the auriculotemporal nerve and lasted five weeks was due to a primary degenerative state of the nerve itself.

There is another factor which must be taken into consideration in discussing the pathogenesis of neuralgia, viz., the state of the bloodvessels. Referring to my cases I see that changes were found in the bloodvessels of each of them. Arteriorsclerotic changes were seen in the patients of advanced age, but thickening of the adventitia was found even in the man of twenty-nine. While the degree of vascular change is not at all parallel to the degree of nerve degeneration, nevertheless wherever the latter was present it was inevitably in the immediate vicinity of the altered wall of the bloodvessel. In Case II, for example, in which the patient of sixty-five presented a marked arteriorsclerosis the fibres of the auriculotemporal branch were only slightly degenerated, and not near each vessel. Consequently, one can draw this conclusion that while the condition of the bloodvessel has a certain effect upon the neighboring nerve fibres, nevertheless their mutual relation cannot as yet be considered as the unique cause and effect.

From a critical study of my cases, also of those of other investigators, the following conclusions, I believe, can be drawn:

(1) The occurrence of degeneration of the peripheral nerve is frequent if not constant in neuralgia.

(2) That this nerve degeneration is very probably a primary condition, which as a neuritis assumes an ascending course and involves secondarily the Gasserian ganglion. Although this contention is still debatable, there is great probability in favor of the above view.

(3) The bloodvessels undoubtedly play a certain rôle in the causation of a degenerative state of the peripheral nerve.

(4) That it is difficult if not impossible to draw a sharp distinction between neuritis and neuralgia, as accumulated facts show an anatomical basis in the latter affection.

(5) In view of these anatomical facts, it is highly important to remove surgically a nerve affected with so called neuralgia as early as possible after a short trial of medical treatment is given.

The specimens were supplied to me for microscopical examination by Dr. Roe and Dr. Eckel to whom I acknowledge my indebtedness.

Northeast Corner of Eleventh and Pine Streets.

CANCER OF THE RECTUM.

(Classification, Symptoms, Diagnosis, and Prognosis.)

By Samuel G. Gant, M. D., LL. D.,
New York,
Professor of Diseases of the Rectum and Anus, New York Postgraduate Medical School and Hospital.

Cancer of the anus, rectum, and sigmoid is encountered by the proctologist very much more frequently than is generally suspected by the profession at large. In fact, carcinoma of the rectum represents four per cent. of cancers encountered in the different parts of the body. These neoplasms are rare in childhood, not common between the ages of twenty and forty, are seen most often between forty and sixty, and thereafter they rapidly diminish in frequency. Malignant neoplasms of the lower bowel occur about as frequently in one sex as in the other. The statistics of the writer show that fifty-two per cent. of his cases have been men and the remaining

forty-eight per cent. women. A careful analysis of these statistics, together with those of other surgeons, shows that eighty per cent. of all intestinal cancers are to be found in the rectum.

Classification.—Malignant tumors encountered in the anorectal region may be classified as sarcomatous (see Fig. 1) when composed of connective tissue, and carcinomatous when epithelial tissue predominates. Owing to the limitation of the paper, the writer will confine himself to a discussion of some of the more practical points concerning carcinoma and will not consider sarcoma further than to mention that statistics show that malignancy in the anorectal region is in the ratio of sixty carcinomata to one of sarcoma.

Two distinct types of carcinoma are encountered in the anorectal region. The squamous (flat pavement) called carcinoma, or epithelioma, and the cylindric (columnar) celled (adeno) carcinoma. The former is always found at, or in close proximity to, the anal margin, while the latter is usually located in the anal canal, upper rectum or sigmoid.

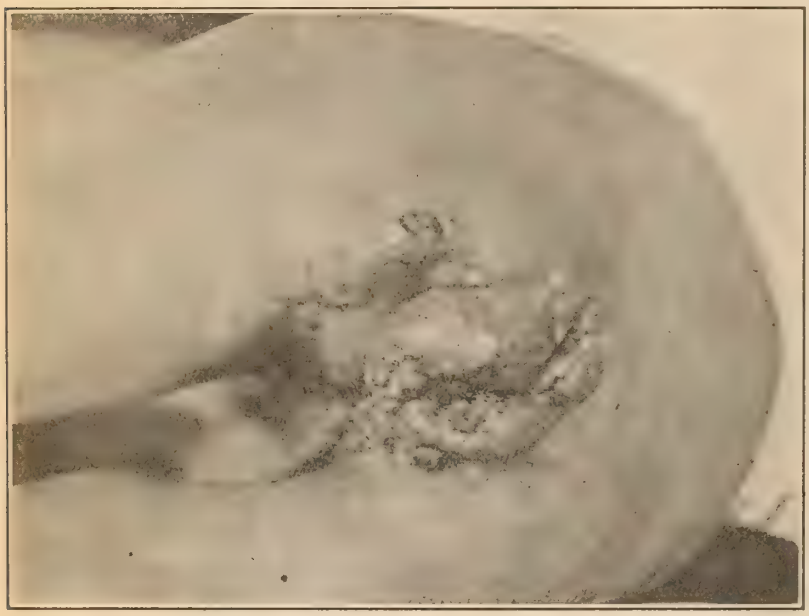


Fig. 1.—Fibrosarcoma involving the anus and rectum (author's case).

Of one hundred cases of carcinoma of the rectum reported elsewhere by the writer,[1] five per cent. were of the squamous celled variety and located at the anus, the remaining ninety-five per cent. being of the cylindric celled type and were situated as follows: Fifty per cent. in the ampulla, twenty per cent. in the upper rectum, fifteen per cent. in the upper rectum and sigmoid, and ten per cent. in the anal canal.

Squamous celled carcinoma, or true epithelioma, usually begins in the superficial epithelia, or the sudoriparous or sebaceous glands, but may originate in a fissure, ulcer (lupoid), abrasion, cicatrix, wart, or other new growth or psoriatic patch occurring about the margin of the anus. Gradually it manifests itself as a hard, dry, wart like nodule, or as an ulcer with sharply defined, firm, infiltrated edges. Ordinarily it is of the former variety and does not ulcerate until later in its course. The growth may be superficial, involving the skin and mucosa about the anal margin, or may be of the deeper variety, not only attacking these structures, but may extend without limitation and destroy all, or a part, of the perinæum, scrotum, vagina, or other tissues with which it comes in contact (see Fig. 2). Sometimes epithelioma in this region has a tendency to heal and glistening scars may be seen on one side of the wound, while the cell proliferation and ulceration continue in another direction. The histological appearance of the squamous celled carcinomata shows that the superficial type is made up of small, epithelial cells, and the deep seated growths of large, flat, and small cells. In this form of epithelial cancer, the masses of cells which extend from the superficial epidermis into the deeper structures often assume a concentric, or onion like, arrangement, forming epithelial pearls.

Cylindrical celled carcinoma of the rectum. Adenocarcinoma, in its incipiency bears a close resemblance to adenoma, in that it produces in its growth, gland like formations, histologically related to the normal epithelial structures. Moreover, simple adenoma in the intense frequently undergoes a clear transition into carcinoma. For these reasons this variety of cancer is often described as adenocarcinoma.

Cylindrical celled carcinoma is very malignant, is most frequently situated in the anterior or posterior rectal wall, and originates in the tubular glands or crypts of Lieberkühn. The resemblance of the newly formed tubules to the healthy glands of the bowel may persist—that is, their lumina remaining distinct, the lining epithelium closely resembling the normal cylindrical epithelium of the intestine, constituting the typical glandular carcinoma, or so called malignant adenoma. On the other hand, in the atypical form of the growth which is most common, the epithelium is unnatural and the lumina of the newly formed tubules are obliterated completely by the rapidly proliferating cells.

When examined early, the gross appearance of a cylindric celled carcinoma of the rectum is that of a small, movable, rounded, or flattened, indurated swelling with elevated centre in the submucosa. As it increases in size, the neoplasm involves and becomes inseparable from the mucous and muscular tunics of the bowel. The growth may extend in any direction, and from the form it assumes may be classed as annular, tubular, or protuberant cancer. Again, owing to the predominance of the cells, or connective tissue, or alveoli containing cells and mucoid material, or to the deposit of pigment within the cells, these forms of malignant neoplasm of the rectum are

[1] Gant, *Diseases of the Rectum and Anus.* Third edition, 1905.

sometimes designated as medullary (soft), scirrhus (hard), colloid, and melanotic cancer.

Mestastatic deposits in near, or distant parts are common to both forms of rectal carcinoma. It is to be noted, however, that in the cylindric celled type, the retroperitoneal, sacral, and lumbar glands are attacked, while in the squamous celled, or anal variety, the inguinal nodes are involved.

Symptoms. In the earlier stages of malignant disease of the rectum, the symptoms are extremely vague. At first, there is no pain, bleeding, discharge or obstruction; and the only warning the patient receives of the existence of trouble is an indescribable sensation of uneasiness, which usually occurs some little time after the beginning of the growth.

For this reason, the patient is, in most cases, unable to give an intelligent idea of the onset of the malady. As the disease progresses, the sensation described shortly gives way to symptoms of a more pronounced character, such as weight and fullness in the bowel, or in the pelvis when the growth is high up. At this time there is some uneasiness during defæcation and discomfort in the sacrococcygeal region and sometimes in the limbs, which is frequently attributed to hæmorrhoids, fissure, or sciatica. These manifestations are followed by a frequent desire to stool, or a sensation of something in the bowel which it is impossible to expel. Defæcation becomes less frequent, prolonged, and difficult. Constipation later alternates with diarrhœa. Because of the frequent desire to defæcate and the constant excessive straining, the liquid and semisolid fæces are discharged around the solid fæcal mass which is retained by the growth until softened by cathartics or washed out by enemata. Semisolid fæces are discharged in the form of long, grooved, flattened, or rounded pipe stem like strings.

When the obstruction is high up in the bowel, fæcal matter sometimes collects below it, and in such cases the dejecta may be well formed. At this period, the growth usually commences to break down, and ulcerate, and this, together with the irritation of the retained fæces, excites a proctitis.

As a result of ulceration and inflammation, the fæces are now discharged mixed with mucous, pus, and blood, the amount of hæmorrhage being slight or profuse, depending upon the extent of the ulceration and the size of the vessels involved. The evacuations sometimes contain portions of the growth which have sloughed off, or, in the colloid variety, jellylike masses may be voided. When the cancer is melanotic in character, the dejecta may be dark and discolored with pigment. This is extremely rare, however. The discharge increases in amount and, not infrequently, has an extremely foul odor, but the latter is a symptom of less importance than some writers would imply. Owing to the irritating discharge, the anal margin becomes the site of vegetations, elongated tags of skin and excoriations, causing a most intense pruritus. When the rectum is not kept properly cleansed, and the discharge is allowed to accumulate, abscesses and fistulæ are formed which open upon the external surface, or into the bladder, urethra, or vagina. Except in cases where the cancer is at the anus, or an extensive ulceration exists, these patients experience but little pain until the growth encroaches upon the nerves and attains such a size as to produce a high degree of obstruction, at which time suffering becomes intense. They then complain of constant, bearing down pains, and a never ceasing desire to empty the bowel. In addition, there may be reflected pain in neighboring organs or down the limbs. The irritating discharge produces a most disagreeable burning sensation in the lower bowel, and the retention of gases above the obstruction gives rise to very distressing, colicky like pains in the abdomen.

When the disease extends to and involves neighboring organs, or the sacrum, or coccyx, the pain is most excruciating. In cancer of the anus, involving the skin and sphincter muscle,

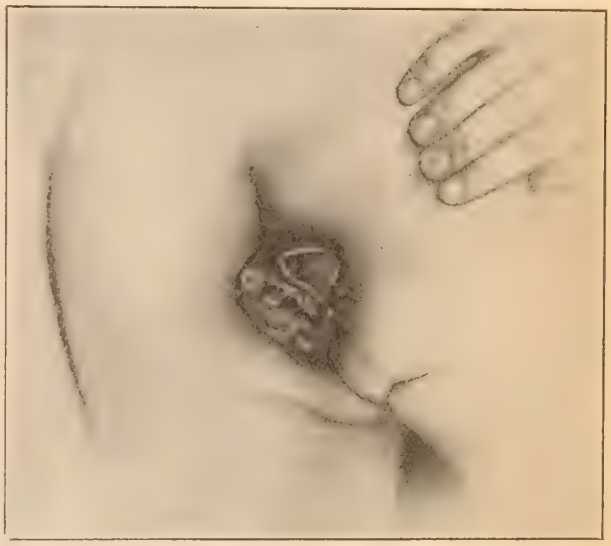


Fig. 2.—Epithelioma involving the anus and rectum (author's case).

the pain is constant, and much more severe than when the growth is located above the anal canal. Some of the more frequent symptoms encountered in the later stages of this disease are: Tympanites, fæcal impaction, complete obstruction, involvement of the other organs, œdema of the legs, abscesses, fistula, exhaustion, and not infrequently perforation and septic peritonitis.

Diagnosis. The diagnosis of rectal cancer is not difficult to the surgeon who obtains a systematic history and who makes a thorough digital and proctoscopic examination. The majority of malignant growths of the anus or rectum are within reach of the finger, and are readily recognized by their irregular, hard, nodular, formation, or when they have begun to break down, by their superficial, or deep, craterlike ulcers. When these neoplasms are situated very high up in the rectum or sigmoid, one must rely upon bimanual palpation, insertion of the hand into the bowel, exploratory incision, or, better still, by means of the proctoscope, or sigmoidoscope, and a proper light, by the aid of which, after effective inflation, the bowel can be inspected and the size, location, and nature of the neoplasm can be accurately ob-

served and differentiated from other tumors occurring in this region.

Prognosis. As in other parts of the body, the prognosis of malignant neoplasms situated in the rectum, is extremely grave. Nothing can be expected from palliative (including the use of the x ray or radium), or surgical palliative treatment, beyond alleviating suffering and prolonging life. Much, however, can be accomplished in this class of cases by means of radical operation at the hands of competent surgeons.

Statistics show sixteen per cent. of permanent recoveries in cases where the growth has been removed by means of amputation or resection. It may be authoritatively stated that only about sixty-six per cent. of the cases of rectal cancer when first seen by the surgeon, are operable and the rate of mortality is, approximately, twenty-one per cent. following complete extirpation. Even though these operations are extremely difficult, the mortality high, and the proportion of cures small, the writer considers it the duty of the surgeon to do a radical operation wherever and whenever this is possible.

43 WEST FIFTY-SECOND STREET.

HIGH FREQUENCY OSCILLATING AND HIGH PERIODICITY PULSATING CURRENTS IN MEDICINE.*

BY ROBERT WILSON, M. D.,
Montreal,
Professor of Therapeutics in the University of Bishop's College, Montreal; Physician to the Western General Hospital, Montreal.

Out of the large field of practical applications of electricity, I have selected that one subject which will best serve your purpose and mine in meeting you to-night, our mutual benefit and the opportunity to learn something to our mutual advantage. The Röntgen ray is, thanks to our enterprising journals, pretty well understood; the less known radiotherapy of radium and its allied minerals, is in the judicial balance, and while much is available on its extraction and powers, the general practitioner will hardly care to invest four or five hundred dollars for occasional use. Of the ordinary faradic and galvanic currents, the textbooks have almost said the last word: But it appealed to me that the method of using the electric current which was popular, and deservedly so, was little understood, and yet much used—I refer to high frequency currents. Outside of a few among the electrotherapeutists and radiotherapeutists, scarcely anyone can be found of the thousands using this current, to explain its rationale, what the conditions necessary for its generation, what the physiological action and how it attains this action, and what the uses to which it may legitimately be put. With your permission I will to-night as briefly as I may open the subject, and ask for a free and full discussion on points which may be obscure or to which you may take exception.

Let me briefly remind you of a few terms used to designate the varying conditions of pressure, quantity, resistance, capacity, and kind of current used. Let me premise that all electric currents are the same; you may change its shape, but you cannot alter its primal constitution. Just as clay is clay, whether in the form of a brick, a bowl, or a pipe, or in its plastic form, so electricity is electricity, whether generated by a copper coin under your tongue and a silver on top, or from a battery cell, a large dynamo, or a glass plate static machine. The difference is only in its form. This current is in its essence the expression of interatomic stress. We have good reason to believe that there is only one kind of electricity, that which we call negative, and that the positive is the absence of negative electricity, just as darkness is not an entity, but the absence of light. It is, we believe, a motion, the movement of electrons, negatively charged masses of infinitisimal size, 800 to 1,000 times smaller than the mass of the hydrogen atom, and that consequently this motion may be excited by chemical or mechanical means; chemically in the breaking down and subsequent reorganization of atoms into new groups of molecules, mechanically by induction and movement and the expending of mechanical energy. This stress may be easily conceived to vary in intensity or power, according as the molecules are chemically more easily broken down and recombined, or as the motion mechanically imparted is more or less rapid. The unit of this difference of stress or potential has been called the volt, and is sufficiently small for general use. You will thus see that difference of potential, or voltage, is independent of the size of elements or machine, and varies, other things being equal, only with the ease with which this interatomic interchange takes place.

On the other hand the quantity of this stress is clearly in proportion to the mass or size of chemical or mechanical elements. This quantity has been named intensity, and the unit is the ampère, far too large for medical work, so the 0.001 is taken, the milliampère. The resistance of an indifferent carrier (say, copper, iron, or silver wire) to the transmission of this energy—in other words, the friction generated by and retarding the movement of these electrons is called resistance, and the unit is the ohm. For a direct current, or an alternating current of comparatively low frequencies, the ohm is sufficient, but when very high frequencies are used, amounting to a million or more per second, another factor analogous to inertia is encountered, this is called inductance and its unit is called the henry. The quantity of electricity which may be carried by any object as a stationary quantity is called its capacity, and its unit is the farad; a unit far too large, so the millionth is used and called the microfarad.

More important by far is the difference in the character of the current used. When the difference of potential is excited by chemical means, the current is truly unidirectional and of constant and equal voltage (the direct current). When steps are taken to rectify the reversals of a dynamo current, or the current from a static machine is used, the current is unidirectional also, but comes in jumps, so rapid it is true, as not to be perceptible, and with all the effects of a true, unidirectional current; but if no steps are taken

* An address delivered before the Androscoggin County Medical Association, Lewiston, Maine, February 16, 1906.

to correct the reversals of current, you can easily understand how any number of reversals from two to a number limited only by the mechanical difficulties of construction may be obtained. Tesla, in his original experiments, used dynamos, some with 384 and some with 480 poles in their periphery, giving reversals of 80,000 and 100,000 per minute. This current, reaching its maximum gradually and as gradually going to zero, going below and up again for one cycle, is called an alternating current. The speed with which it makes its reversals per second is called its frequency; half a cycle is an alternation (usually reckoned by the minute). When a current does not reverse, but comes in equal jumps all above the zero line, each wave commencing where the other left off, it is called pulsating, and the number of jumps or waves per second is called its periodicity. The alternating current is thus an oscillating current, alternately swinging above and below the zero line. When the time, intensity, and frequency are properly proportioned we get perfect sine wave forms, and a sinusoidal current is simply a properly proportioned alternating current of rather low frequency and potential, but high intensity or quantity.

Let us study briefly the phenomenon of a condenser charge and discharge. A condenser may be a single sheet of glass with two tin foils, one on either side (Franklin plate), or a jar with tin foil inside and out (Leyden jar), or a series of sheets of lead foil and dielectric. When charged, the inside is full, as it were, and the induction of the opposite sign on the outside prevents any more being taken in, and the jar is charged. Now on its discharge, a rush of current takes place from the inside and the induction is lost, and a quantity of the opposite sign goes in, this induces also an opposite sign on the outside, and a reflow takes place back from the outside to the inside, thus there are alternately positive and negative sign electricities on each side of the jar till the swing, becoming less each time, comes to a stop. Theoretically they should go on indefinitely; practically we know they come to rest more or less quickly, depending on the circumstances of resistance, induction, and capacity. These surges or rushes back and forth, or oscillations of the current, take place at incredible speeds. Assuming a resistance of 500 ohms in the circuit, comprising spark gap, patient and jars, with a frequency of 6,360,000 per second with an inductance of 0.000,006 henry with a capacity (patient) of 0.000,05 microfarads, and a quantity in the patient of 0.000,006,575 coulombs, and discharges between knobs of 76 per second, the four or five waves before dying out, take place in 0.000,000,060,4 seconds, or graphically, if the time of oscillation for four waves be represented by 1 inch, the interval between oscillations equals 18,000 feet (more than three miles!)[1] And the maximum instantaneous current value is 170.96 ampères. By decreasing the resistance to 100 ohms, the frequency becomes 9,092,500, the time of oscillation is 0.000,000,11 seconds, the maximum instantaneous current value is 308.2 ampères, and if four oscillations equal 8 inches, time between discharges equals 19,920 feet (or nearly 4 miles!). This property of a condenser or Leyden jar of emptying, or over emptying, as it were, itself, first on one side of coating and then on the other, till an electric equilibrium is attained, is taken advantage of to obtain currents reversing or alternating (or oscillating) at a tremendously rapid rate. If we join the outside coatings of two Leyden jars, or the opposite sides of a condenser of any number of sheets by a wire, it is very evident this oscillating current of high frequency will travel along this wire, and if at any point in this wire we interpose a body such as a patient, it is equally clear these high frequency oscillating currents will traverse this body. In effect, this is what took place when W. J. Morton, of New York, first used his "static induced current" and established his claim to be the first to use high frequency oscillating currents.

Having explained the rationale of their generation in their simplest form, let us see what are the physical conditions under which they may be produced, always remembering that a high frequency current differs in no particular from any other form of current except in its high voltage and tremendous frequency of alternation or oscillation. With the apparatus at our disposal so far, it is strictly speaking an interrupted alternating current, the alternations caused by the condenser discharge, and the interruptions by the time it takes for the condenser to receive a full charge and overflow. Theoretically, it would seem possible to so increase the quantity of current, or decrease the capacity of the condenser, or both, as to give a continuously alternating current of infinite frequency without interruptions, but in practice the phenomenon of self induction or electric inertia prevents this, and it is (at least so far as our knowledge now goes) very doubtful if any apparatus can be devised to accomplish this.

I presume the phenomenon of induction is sufficiently known to you, that property which an electric current flowing through one wire has of inducing in another contiguous and parallel wire, a sudden flow of electricity in the opposite direction and generated only at the moment of making or breaking the flow in the first wire, or what amounts to the same thing, at the moment of reversal of flow in the first wire. It is on this principle the Ruhmkorf coil depends for its action. If now instead of a regularly interrupted direct current of low intensity or ampèrage being used for the primary coil, an oscillating discharge of high voltage and great ampèrage be passed through it, and instead of a large number of layers of secondary wire, only one layer, well separated be used, we will have a resulting phenomenon on precisely the same lines as the ordinary coil, but of infinitely greater power, due to the greater ampèrage (800) and frequency (10,000,000). This is in effect all that a Tesla coil is. That this great power and frequency may have time to exert its influence outside this primary wire and so form an electric field, it must be kept just the right length of time in this wire, and it is here that the inductance (impedance, or

[1] Jenks and Clarke. *Third Report of the Committee on Current Classification of the American Electrotherapeutical Association.*

inertia) of conductors to high frequencies comes in. The ordinary resistance of the circuit also is most important, for if to the impedance, an ordinary resistance be added which is too great, the current will be kept too long and will become damped or choked out too soon, does not oscillate below the zero line, and becomes a pulsating unidirectional current. In physical appearance the resulting pulsating unidirectional current will have a very high voltage or potential, and be indistinguishable from an oscillatory discharge, but the physical character is different, and the physiological effect may be, and probably is, different. Of this more later. Thus to get a true oscillating high frequency current, the inductance, capacity, and resistance must be properly proportioned. The current is oscillatory when $\frac{1}{\text{inductance} \times \text{capacity}}$ is greater than $\frac{\text{resistance}^2}{4 \times \text{inductance}^2}$, that is, capacity and resistance must be small, and inductance large.[2] The frequency is calculated from the formula

$$F = \sqrt{\frac{4.L.C. - R.^2C.^2}{4.^2 L.C.}}$$

Or $F = 0.159155 \sqrt{\frac{1}{L.C.} - \frac{R^2}{4.L^2}}$ where F = frequency, L = inductance, c = capacity. The impedance or inductance of a circuit is independent of its resistance and depends only on its geometric shape, and the presence or absence of magnetic substances, especially iron. The formula is $L = 2.l(\log\hat{e}\ \frac{4.l}{d} - a)\ 10^{-9}$, where L is inductance; logê is the base of Napierian logs (2.71828); l is length in centimetres; d is diameter in centimetres; "a" is a constant and is taken as 1 for straight and 2.5 for circular loops. The resistance to high frequencies is greater than the resistance to ordinary frequencies, the formula is $R = .000056.l \sqrt{\mu f}\ R$. Where R = resistance in Ohms; f = frequency in cycles per second; l = length of conductor in centimetres; μ is a constant for the average permeability of conductor and is taken at 900 for iron, and unity for ordinary substances.

The capacity of a conductor varies, but it may be obtained by the following formula:

$C - 0.000225 \frac{A.n}{t} k$. Where "A" is the area of dielectric between two conducting plates in square inches; "n" is the number of sheets of dielectric; "t" thickness of dielectric in mils; "k" the specific inductive capacity of dielectric, and is taken as 5 for average good glass. The capacities of the jars of a Waite and Bartlett machine are 0.000,8, 0.000,4, 0.000,26, and 0.000,08 microfarads. Of a patient on an insulated platform 0.000,05—and standing on a sheet of vulcanite one quarter of an inch thick with a plate of brass on the other side, it is 0.000,2 microfarads. Where jars are used, the capacity of the patient may be neglected.

[2] Sheldon, *The Report of Committee on Current Classification of the American Electrotherapeutical Association.*

The induction effect of coils may be and has been taken advantage of by d'Arsonval in his high tension high frequency apparatus. A long coil of fine wire with adjacent helices not touching is surrounded by a movable coil of four loops of heavy copper wire, through which the condenser discharge travels, giving in the secondary or fine coil an equal frequency, but a much higher potential than that of the primary current. Oudin found that by causing the high frequency current from a condenser to pass through a proper number of helices of copper wire, and proportioning the number of loops in the primary circuit, he obtained in the continuation of these loops resonance effects; that is, when the period of oscillation or frequency, due to inductance, capacity, and resistance were balanced, he obtained from the free end of the remaining helices of his resonator a high frequency higher potential current vibrating in syntony with the high frequency lower potential current of the first few loops. From the formula I have quoted you

$$(f = 0.159155 \sqrt{\frac{1}{L.C} - \frac{R^2}{4. \times L^2}})$$

you will see how easily you may have an oscillating current transformed into a pulsating unidirectional current by simply increasing either the resistance or capacity or decreasing the inductance. and this without your being at all aware of the change. It is precisely this difficulty which makes one skeptical of some of the results obtained and lavishly published by those not in a position to know, and therefore to appreciate the kind of current they were using, and makes it so difficult to rightly interpret the physiological results obtained.

Of its physiological action not much can be authoritatively said, simply because no systematic laboratory experiments are available where the data are unimpeachable, at least on human beings. We are all aware how fallacious experiments on the lower organisms are when one would make deductions applicable to the larger and more complex human being, witness the experiments classic in their completeness, recorded by Freund, on the influence of high potential unidirectional currents, and high potential oscillating currents of high frequency, on bacterial growth and on epilation, with the known results of these currents on the human body. Much more satisfactory are the records of experiments on the human subject of these oscillating high frequency currents with reference to its metabolism, although even here details are lacking to show whether the currents used were really oscillating or pulsating currents, especially in the autoconduction cage, with its large self induction factor. For instance, in a cage 12 inches in diameter and having 60 helices ⅜ inch apart, with a total length of 188½ feet and $^1/_{10}$ inch thick, the inductance is 0.001,661 henrys, and the frequency drops from 10 millions per second (with 8 loops) to 138,000 per second. With a cage 3 feet in diameter, with 30 loops, and a length of 565½ feet, the inductance is 0.000,0762 henrys and the frequency a little over 180,000 per second—dangerously close to the complete damping out of

any oscillation. With the autocondensation couch the results are much more reliable as to the true oscillatory character of the current.

Here without doubt great benefit has been obtained in diseases due to malnutrition or defective metabolism. As to the primal causes of these physiological effects, I am not prepared to agree with Freund when he says they are all attributable to the derivative or irritative action of a current of high potential alone, and to classify the physiological effects as on a par with faradic, galvanic, and high potential unidirectional currents of a Ruhmkorf coil. Much more acceptable and more in line with logical sequence is Tesla's explanation of a molecular massage effect. The reports of Klemm, Pfeffer, Roux, Hodge, and especially Valenza (quoted by Freund), on the effect of the current on the cell substance and in the latter's case on the torpedo fish, where the high potential and high frequency currents produced important retrogressive changes in the nerve cells, especially in the nuclei as a chromatolysis caryorixe and hyperchromatosis, the cells adjacent to the electrode contracting with irregular outlines and hyperchromatosis of its contents, the nucleoli becoming absent, parts remote showing an increase in the volume of the nucleus, hyperchromatosis of nuclear wall alone, while the nucleous still remaining in evidence (Valenza, quoted by Freund). This, I think, would tend to disprove those who believe that the high frequency current resides chiefly on the surface of the body and penetrates but little. We lack here a series of experiments on large animals (say, dogs) with properly guarded electrodes to penetrate the body, and so determine whether the current density varies much within and on the surface. Nor must we, in considering the physiological effects of these currents, forget the possibility of a synchronous vibratory effect or the possible effect of these almost inconceivable high frequency alternations on the natural contractility of protoplasm.

Therapeutics.—Of the therapeutical applications, I purpose saying but little, as these have been pretty well gone over and the literature available is large. Briefly, however, I may remind you that it is chiefly in diseases due to malnutrition or defective metabolism, such as neurasthenia, diabetes mellitus; giving increased urea excretion, increased energy, improved appetite, better sleep, and better digestion. In the arthritis group, subacute and chronic rheumatism seem to respond better than the acute condition, although in my own experience I have come across two cases of acute rheumatic arthritis of the wrists and elbows where the high frequency current applied locally yielded splendid results. Oudin reports effects similar to those obtained by autoconduction by using local methods (which, outside of the couch, I prefer myself). In my own practice I have obtained excellent results in the local treatment of subacute and chronic arthritis combined with general condensation. In pulmonary tuberculosis, my results have not been so happy, nor have I had the courage to depend solely on this means when a tuberculous patient comes to me. In conjunction, however, with other methods, I cannot speak too highly of its effects in the remission of cough, night sweats, and on the evening rise of temperature. I have had no experience with its use in the treatment of obesity, and can only quote the experience of others in saying that the thyreoid extract seems to work better in conjunction with a course of treatment with the high frequency current. In nervous diseases, as one would expect, it is in the functional derangements where the best results are obtained. No one expects to regenerate destroyed nerve tissue by the electric current or any other means, although even here one has to go slow in view of the reports by Dr. Shirres, of Montreal, on the regeneration of the axones in a case of injury to the spinal column under his care. In neuralgias, sciatica, lumbar myalgia, and true hysteria, the results of treatment are often little less than marvelous. In the more complex nervous disorders, such as paramyoclonus multiplex, paralysis agitans, opinion is divided. Of the former disease I have recently had two cases, one distinctly functional with a rapid cure, the other with marked improvement. In disseminated sclerosis I have also had two cases recently; in neither of which was there the slightest improvement in the disease itself, but there was a most marked improvement in the general condition of health, while in one the speech was very noticeably improved. In the diseases of the skin, it is especially in the chronic forms that one looks for benefit. Psoriasis, chronic eczema, alopecia areata—here local treatment is of undoubted and great benefit.

Apparatus.—I desire to say something to-night of the apparatus used in generating these currents, because I believe that far too expensive outfits are recommended to the general practitioner. While to the specialist it is not only advisable, but even necessary that he have the most powerful apparatus available, to the general practitioner it is only essential that he have such means at his command as will, at a reasonable cost both in first outlay and subsequent use, enable him to feel that he cannot afford to be without such a therapeutical means in his office. It is not necessary to have a $500.00 static machine or a $400.00 coil and accessories. For my own satisfaction and as an experiment I recently built a static machine, consisting of twenty revolving discs of 10 inches in diameter, glass, and twenty stationary discs, 14 inches in diameter, also glass. This machine was built on the Voss principle, is operated by a small ⅛ horse power electromotor, and revolves at a speed of 1,800 revolutions per minute.

This machine, according to the formula given by Dr. Sheldon in the *Third Report of the Committee on Current Classification* ($I = V.n.l.r. 10^{11}$) yields an output of .00266761 ampères, or a little over 2½ milliampères. As the current output is directly proportional to the speed, an output of 2½ milliampères at 1,800 revolutions is equal to about 1 1-5 milliampère at 800 revolutions, the speed at which I use it. This is equal to $^{6}/_{10}$ milliampère at 400 revolutions, comparing very favorably in point of efficiency with Van Houten and

Ten Broeck's 8 plate 30 inch machine. While with the large machine it is of course quite possible to obtain large voltage, one cannot increase the quantity without unduly increasing the price beyond all bounds. Such a machine with two large Leyden jars and a Oudin resonator gives one all the command of high frequency currents needed in general practice and gives better results both in local application and general condensation by the couch to those obtained from a large 30 inch disc machine operated at a slower speed and giving less quantity of current output. I cannot distinguish either in appearance or physiological results between the current generated by this apparatus and that obtained from a 16 inch coil and Tesla high frequency coil, while the item of cost would, I think, be very largely in favor of the smaller machine. My reason for choosing the Voss principle in the construction of this machine was because it is practically self exciting. I should estimate that an efficient equipment could be put upon the market at a cost not exceeding $150.00, and when one remembers that one can use such a machine for very efficient x ray work (I myself use my little machine for everything except radiographs of the hip joint, and find it invaluable for the therapeutical tubes), I think you will agree with me that the up to date practitioner of medicine should have no excuse for lagging behind the van guard of those of his brethren who have not forgotten the old injunction "to prove all things and to hold fast to that which is good."

In concluding, I would remind you of this, that you are dealing with a current of very high potential and at each spark of an enormous quantity, often not less than 800 ampères, with a voltage running up into the hundreds of thousands; and that it is only the enormous frequency of the alternation or periodicity of the pulsation that enables you to handle these otherwise dangerously large currents. I would also remind you of the ease with which alternating currents may be transformed into pulsating currents, and would ask you to note the conditions of the circuit and report for the benefit of your fellow practitioners what are the conditions under which each yields its best results.

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THE EARLY DIAGNOSTIC SIGNS OF TABES DORSALIS.*

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Probably the most common of the organic diseases of the spinal cord is that usually known as locomotor ataxia, but which is better termed tabes dorsalis. When it is known that in many cases ataxia does not develop until the disease has been present for a long time, and in others never occurs, the reason for the use of the latter name will be readily understood. These also are the cases in which the diagnosis is frequently either not made at all or else not until it is too late to be of any service to the patient. In this connection it may be stated that much can frequently be done to arrest the progress of the disease if the proper treatment is instituted early. It is therefore to the symptoms by which such cases may be recognized that I wish to direct your attention. The picture of a patient with the typical, fully developed disease is familiar to all of you.

Before considering symptoms it may be well to review a few points in ætiology which may prove of service in solving a doubtful case. In the first place it must be borne in mind that while syphilis is undoubtedly the underlying cause in the vast majority of instances, the proportion given by different authors ranging from thirty-six per cent. to over ninety per cent.; it is to my mind much nearer the latter than the former, tabes very probably may rarely occur in those who have not had syphilis, and alcoholism, sexual excess, exposure, trauma, metallic poisons, and infectious diseases other than syphilis, may be considered as possible ætiological factors. It is also well to remember that it usually appears between the ages of thirty and fifty years, and is more common in men than women, in the proportion of about ten to one.

The early symptoms of the disease may be divided into two classes: 1. Those which attract the attention of the patient and concerning which he complains. 2. Those which are discovered by examination. Of the first group it is safe to say that pain is the earliest and most frequent sign. Thus in eighty-eight per cent. of 400 cases analyzed by Erb (1) this was the first symptom noticed, and either alone or in company with some other symptom it was first complained of in 59.3 per cent. of Bramwell's (2) series of 151 cases. As illustrative of the relative frequency of this to other first symptoms, the next most frequent in this series was diplopia in 8.6 per cent. and ataxia in 8.6 per cent. Other writers who have analyzed large numbers of cases are Bonar (3), who found pain to have been the first symptom in 78.67 per cent., Thomas (4) in 54 per cent., and Riley (5) in 88.6 per cent. These pains are usually, but not always, severe and characteristic. They have been classified by Gowers (6) as follows:

"A. Brief momentary pains succeeding each other after a short interval in the same place. 1. Superficial. These seem on or just under the surface, and are usually felt at one spot. They are most common in the limbs, especially the lower legs and feet. They are extremely brief, but recurring; from their shooting and darting character has arisen the name 'lightning pains.' They leave the skin very tender. 2. Deep seated. These pains cannot, as a rule, be definitely located, but sometimes are referred to the joints. They have the same characters as the superficial pains, but are not so momentary, usually lasting several seconds. They are usually felt in the limbs and are not followed by hyperæsthesia. B. Prolonged pains, lasting for days or hours in the same place. They are most common in the trunk and are usually deep seated, an exception being the girdle pain or sensation. They sometimes closely simulate sciatic neuritis. A common variety is a sense of distressing tension on the muscles or tendons. Very intense pains have often a burning character.

* Read by invitation before the Northern Medical Society of Philadelphia, February 23, 1906.

Widely diffused distressing sensations also occur, such as numbness, tingling, swelling, etc."

These prolonged pains are frequently mistaken and treated for rheumatism or neuralgia, especially as they are apt to be worse in damp or stormy weather, and Gowers remarks that in a number of the cases seen by him such pain was the symptom which caused the patient to see a physician. The girdle pain and the so called "lightning pains" are the most common. They may occur in unusual locations. I have seen several cases of tabes affecting the cervical region of the cord in which they were confined to the arms, and Fragstein (7) has reported a case in which the first symptom was pain of a peculiar, sudden and lightning like character, confined to the branches of the fifth nerve,[1] no other symptoms were found for eighteen months when characteristic tabetic symptoms appeared. Oppenheim (8) says that the lancinating pains may precede the development of other symptoms from ten to twenty-five years. Goldflam (9) has recently reported a case in which it was ten years, and Hutchinson (10) one in which it was twenty-five. Such long periods are exceptional, but as has been said many a patient has been treated for some form of rheumatism or neuralgia for several years before the true cause of the trouble was suspected.

Other symptoms first complained of, and their relative frequency, as shown in Bramwell's series, which may be taken as a type (*loc. cit.*), are diplopia 8.6 per cent., ataxia 8.6 per cent., loss of vision 5.9 per cent., derangements of urination 3.9 per cent., gastric crises 3.3 per cent., numbness of the feet (paræsthesia) 0.6 per cent., ataxia and loss of sexual desire and power 0.6 per cent., weakness 0.6 per cent., ataxia and bladder trouble 0.6 per cent., affection of a joint 0.6 per cent., numbness of the feet and catching of the toes 0.6 per cent., ataxia and cramps in the hands 0.6 per cent., noise in the ear 0.6 per cent., loss of sexual power and desire 0.6 per cent. It should be noticed particularly that in only twenty-five out of 151 patients was ataxia a symptom first complained of, and in six of these pain was also present. In emphasizing the statement that all such symptoms should be carefully investigated and the true cause found, it may be stated that diplopia and especially loss of vision, which in these patients is due to atrophy of the optic nerve, have been frequently treated by those who have not made a careful examination or by the quacks found in jewelry stores, with glasses and much valuable time thereby wasted, such being known as ocular tabes. It is a peculiarity of these cases that ataxia frequently never develops.

Gastric crises (paroxysmal attacks of gastric pain and vomiting) have been frequently treated as some form of disease of the stomach, thus I have had under my care a patient who was treated for two years for gastric catarrh before the proper diagnosis was made, and Mathieu (11) has reported a case that was treated for bilious attacks for twenty years. Other crises as the laryngeal, etc., may more rarely be first indications of the disease. The painless swelling of the joints (Charcot joint or arthropathy) has been mistaken for arthritis. I have seen one case in which this error had been made. The general weakness and loss of sexual power may be mistaken for simple neurasthenia. Special stress has recently been laid upon the significance of this symptom by several writers. Thus Patrick (12) has reported a case in which the first symptom was a sense of fatigue out of proportion to the amount of exertion, associated with a sense of drawing or tension in the calves and popliteal spaces, this latter symptom being a form of tabetic pain. It was not until years later that other symptoms developed. Pritchard (13) says that one of the most constant early symptoms is that of unusual and excessive fatigue out of proportion to the exertion and to the previous endurance of the patient. This has not been my own experience, and was only complained of in one of Bramwell's cases, but the fact that it may be the case should teach us not to pass by patients with supposed neurasthenia without a careful physical examination for symptoms to be detailed later.

Other symptoms which rarely have been the first to be noticed are perforating ulcers, falling out of the teeth, herpetic eruptions, onychia, some form of paræsthesia, such a feeling as if walking on velvet, and fractures occurring from slight cause.

Our suspicions having been aroused by the occurrence of one or more of the symptoms above mentioned, we pass to a consideration of the second class, viz., those discovered by examination, and it is the finding of one or more of these which establishes the diagnosis. The most frequently present of these symptoms is loss of the knee jerk, this was the case in ninety-two per cent. of Erb's 400 cases (*loc. cit.*), and it was present in eight per cent. Remember, therefore, that the knee jerk is not always absent as is commonly supposed. Those cases in which it is present are usually those in which the cord is first affected, either above or below the second, third, and fourth lumbar segments, i. e., bulbar, cervical, and sacral tabes. Another deep reflex, usually lost early, is the Achilles jerk, and it is a practical point that cases occur (sacral tabes) in which it is absent, while the knee jerks are more or less active. Such was the case in two of Bramwell's cases (*loc. cit.*). In cases of cervical tabes the biceps jerks are usually absent, while the knee jerks may be present. While one or more of the so called tendon jerks or deep reflexes are usually lost very early in the disease, the superficial or skin reflexes in this stage are usually present, the abdominal especially, being frequently exaggerated. Riley (*loc. cit.*) mentions a case in which this preceded all other symptoms by two years. Von Bechterew (14), Dana (15), and Rosenbach (16) have laid stress upon this symptom in connection with lost knee jerks as an early manifestation.

Sensory paralysis usually manifested as either analgesia or hypalgesia is one of the earliest symptoms that can be discovered by examination. It is usually first apparent in one of two locations, sometimes in both, viz., either on the

[1] Such pains may be the earliest symptom of the so called bulbar tabes.

chest in the shape of a rectangular area at about the nipple line, or on the soles of the feet. Of course other areas may also be affected. Frequently may be found what is known as a retardation of sensation in these areas. By this we mean that the patient feels the stimulus, but is slow in doing so, there being an appreciable interval, often as much as several seconds, between the stick of the pin and its recognition. This phenomenon is very characteristic. As illustrative of the frequency of sensory paralysis, Marinesco found analgesia of the thoracic region at the nipple line in forty out of fifty cases, and Oppenheim (*loc. cit.*) says that analgesia and anæsthesia in the mammillary region and on the legs are frequently the only signs.

Von Bechterew (17) has recently called attention to the fact that diminished sensitiveness of the muscles to pressure is a constant symptom, and may be present before disturbances of muscle sense or of cutaneous sensation. It is most marked in the leg muscles. Sometimes insensitiveness of the nerve trunks to pressure is associated with this symptom or may occur independently. The ulnar is especially prone to be so affected.

The pupillary symptoms found frequently in tabes usually appear early and should always be searched for. The most common is the Argyll Robertson pupil, which was present in 77.2 per cent. of Bramwell's series (*loc. cit.*). It is important to remember that this symptom sometimes may be only present in one eye, that instead of complete loss there may be merely a sluggish reaction to light, and that rarely it is intermittent, being present sometimes and absent others. In 8.9 per cent. of Bramwell's series response to both light and accommodation was lost. Cassirer and Strauss (18) have reported a case in which loss of the response of the iris to light was the only symptom, beginning tabes being found at the autopsy. Inequality of the pupils is a rather frequent early sign, and is of value in connection with other symptoms. It was found in 58 per cent. of Bramwell's cases (*loc. cit.*). In 44.5 per cent. of this same series the pupils were contracted.

Rarely muscular hypotonia may be an early symptom, and Sachs has reported three cases in which it was present, while all other symptoms were so indefinite as to make the diagnosis doubtful.

A corroborative symptom of some value which occurs early is the finding of an excess of leucocytes, especially the small lymphocytes, in the cerebrospinal fluid which has been withdrawn by lumbar puncture. As this may also occur in other chronic inflammatory conditions of the cerebrospinal tract, it is only useful in connection with the presence of other symptoms.

From a study of the facts first detailed we should learn the following: That ataxia is not an essential symptom of tabes dorsalis, in many instances the disease being present for a considerable length of time before it appears and more rarely in others it remaining absent. That persistent pain, especially of the lancinating and girdle types; of paroxysmal attacks of gastric pain, and vomiting, or other symptoms characteristic of the various crises which may occur in the disease; of painless swelling of one or more of the joints; of transient attacks of diplopia; of primary atrophy of the optic nerve; of paræsthesia, such as numbness, tingling, sensations as if walking on velvet, etc.; of difficulties in urination; loss of sexual power without apparent cause; and of physical exhaustion produced by slight cause, or any of the other symptoms above mentioned should arouse our suspicions, and lead us to examine for the presence of some of the symptoms belonging to the second class, viz., condition of the reflexes, pupillary symptoms, sensory paralysis, muscular hypotonia, etc. It may be stated that when not apparent, slight degrees of ataxia may be discovered by using delicate tests, such as standing on one leg, walking backwards, standing on the toes, performing five movements with the fingers, as buttoning clothes, touching the end of the nose, etc., all being performed with the eyes closed.

Only the coexistence of a few of these symptoms is necessary to justify the diagnosis. For instance, such combinations as lancinating pains, loss of knee jerks, and Argyll Robertson pupil; weakness of the bladder, lost knee jerks, girdle sensation; loss of sexual power, lancinating pains, lost Achilles jerks, optic atrophy, loss of knee jerks or of biceps jerks; paroxysmal attacks of vomiting and gastric pain, loss of knee jerks, Argyll Robertson pupil; paralysis of ocular muscles, causing diplopia permanent or transient, optic atrophy, and areas of analgesia, and so on, would all justify a probable diagnosis of tabes dorsalis.

In closing let me remind you that all who may complain of such symptoms as have been detailed in the first class, will not have tabes, and it is only when one or more of the second group are found that the diagnosis becomes justified. It must also be remembered that there are other diseases of the nervous system which may simulate tabes dorsalis, and that multiple neuritis, combined sclerosis, syphilis of the cord, and cerebellar tumors might be confounded with it. These affections all, however, present characteristic symptoms, a knowledge of which usually enables the distinction to be made. A description of these, however, is not within the limits of the present paper.

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A GENERAL CONSIDERATION OF THE DIFFICULTIES IN DIAGNOSIS OF CARDIAC DISEASES, WITH SPECIAL REFERENCE TO CHILDREN IN THE PUBLIC SCHOOLS.*

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The difficulties in diagnosis of the various cardiac diseases manifest themselves strongly in our examination of children in school. With the patient undressed and every facility at hand, it is not infrequent for the diagnosis to be uncertain or erroneous. Given the method we generally adopt in our examination of children for the department of health, when clothing always and sometimes abundantly covers the chest, the difficulty becomes much greater, and, at best, an approximate diagnosis only can be aimed at. This likelihood to error is furthermore enhanced because of the nervous susceptibility of the young heart to psychic influences, and its normally variable state, both as to apical position and rhythm. Barring deformities of the chest and intrathoracic abnormities, when the apex beat in the adult is anywhere away from its usual position (in the fifth interspace within the nipple line) an ætiological factor is sought with the probable ultimate recognition of some operating pathological condition, while such abnormal factor in the child, with much greater heart variance, may and as often may not exist. Besides this, we must also bear in mind that the child has a relatively larger area of superficial and deep cardiac dulness, that the apex beats less forcibly against the chest wall and is apt to be diffuse, that murmurs have a wider range of transmission and that the second pulmonic is normally louder than in the adult. Having a general idea of the difference between the child and the adult heart, which difference in detail it is not the purpose of this paper to describe, the stumbling block to diagnosis becomes less, just as a hindrance to a knowledge of a pathological condition is moderated by a proper conception of the physiological state.

My discussion of the subject proper begins with cardiac neurosis, a condition which practically does not exist in very early life, appearing from about the seventh year and becoming rather frequent at puberty. It is certainly more difficult to make a diagnosis of cardiac neurosis than organic disease, particularly when the neurosis is associated with a hæmic murmur and some hypertrophy. Inasmuch as a neurosis is fundamentally a disturbance of function in the absence of any demonstrable lesion, and that such lesions may be plentiful though obscure, a recognition of this fact becomes evident. Of course, the presence of a presystolic or diastolic murmur at once lifts the disturbed heart from the category of neuroses. But abnormal heart action when associated with atypical systolic murmurs, may be, at times, perplexing and misinterpreted. There is no cardiac irregularity, however slight it may be, whether of rhythm, sound, or murmur, apparently unassociated with any other abnormality, which may not, after all, be due to some structural change. And it depends solely upon the thoroughness of our search whether the diagnosis is going to be justifiably that of a mild or serious nature.

There is no disease in which an observation of concomitant conditions is more urgent than in all forms of neurosis. And despite accuracy, after due importance is given all phases, our opinion, nevertheless, must frequently be held in abeyance for a time. The axiom that the negative is more difficult of proof than the positive is well exemplified here. When a child in school presents the slightest divergence of heart action, nothing short of a complete removal of clothing above the waist will suffice to make the examination satisfactory. What auscultation cannot determine, inspection may, and if that prove futile, palpation may succeed. Subjective manifestations, such as headache, vertigo, spots before the eyes, noises in the ears, and other symptoms, though usually more distressing than in organic disease, are unreliable as an aid to diagnosis. Prolonged observation is sometimes necessary, for even with the removal of the apparently exciting cause, whether coffee, tea, tobacco, nerve strain, etc., and the institution of treatment, we often fail to get an immediate response. The possibility of physiological cardiac irregularities, however extreme, must not be lost sight of. People have gone through life to an advanced age with these physiological eccentricities. But this aspect is the last one to be considered in the process of elimination.

For convenience and as an aid to diagnosis it is well to divide cardiac neuroses into those of direct and those of indirect origin, and again subdivide the latter into those of functional and those of organic nature. The direct form applies to a primary neurosis of the heart, the indirect to a secondary neurosis as a part of the symptom complex significant of some other disease, functional or organic. Besides this, a systematic arrangement, or grouping in one's mind, of the many causes occasioning abnormal heart action is advantageous. Thus we have those of central origin, of reflex origin, of toxic origin. We may find the ætiological factor in the heart, the pericardium, the ascending aorta, in mediastinal tumors, the lungs, pleura, brain, spinal cord, stomach, intestines, kidneys, thyreoid gland, blood, etc. Recognizing these possibilities we look for a precise one among them, and the more exhaustive our search, the more satisfied we can be with our finding. Add to this an association of the various cardiac irregularities with such diseases or conditions in which they

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are common, and we have, to my mind, an ideal method for making the best diagnosis.

For instance, a bigeminal or trigeminal pulse is usually associated with mitral lesions or the administration of digitalis. The paradoxical pulse of Kussmaul would call to mind chronic pericarditis, adhesions about the root of the aorta. Embryocardia suggests the latest stages of fever and extreme cardiac dilatation. Gallop rhythm is often associated with interstitial nephritis, arteriosclerosis, early mitral stenosis. Tachycardia is common in exophthalmic goitre, acute febrile diseases, cardiac dilatation, degeneration of heart muscles, neurasthenia, stimulating beverages. Brachycardia often accompanies the puerperal state, convalescence from acute fevers, fatty or fibroid changes in the heart, ulcer or cancer of the stomach, jaundice, diabetes mellitus, anæmia, chlorosis, epilepsy, cerebral tumors, pachymeningitis, plumbism, alcoholism, the excessive use of coffee, tea, tobacco. The ordinary intermittent heart is occasioned equally by any of the enumerated causes and often in combination with one of the other forms of irregularity. Thus, we see the vast number of causative agents productive of heart disturbance.

A large number is at once ruled out when the disturbance occurs in a child because of their unlikelihood at an early age, such as those consequent upon degenerative changes. Others are readily ascertained and the nervous heart consciously ignored because of the graver factors absorbing our attention. But there are times when the innervation of the heart only seems to be functionally at fault while serious lesions exist. The only way to minimize the difficulty of diagnosis is to properly comprehend physiological possibilities, the many causes of arythmia, slow and rapid heart, and coexisting conditions, with a rigid observance of systematization. That form of cardiac trouble which is designated the Stokes-Adams syndrome significant of slow pulse with syncopal attacks needs but mention here. It occurs almost exclusively in advanced life and is invariably associated with a marked degree of arteriosclerosis. The pulse in this disease is permanently slow, falling as low as even ten or five to the minute. Attacks of cerebral symptoms temporarily simulating apoplexy or repeated fainting spells associated with slowness of pulse are diagnostic of this disease.

We have practically nothing to do with pericarditis in our work in the schools. A few words, however, with reference to it will not be amiss. Both the acute and the chronic form frequently escape us. Its occurrence is uncommon in childhood, very rarely idiopathic, and usually secondary. The greatest obstacle to diagnosis of this disease is overcome in our consciousness of its possible presence. Like many of our obscure diseases, particularly cardiac, it is often only found when sought irrespective of exclusively relevant symptoms. The presence of an acute infectious disease, pleurisy, pleuropneumonia, rheumatism, tuberculosis, and pyæmia should put us on our guard. The adhesive form, whether of pericardial or epicardial nature, often has more post mortem than ante mortem significance. When epicardial, it occurs as an extension of inflammation of contiguous tissue. Signs of a large and weak heart, in other words, a dilated heart, particularly without murmurs, should arouse our suspicion as to the presence of adhesive pericarditis. The diaphragm phenomena, indicated by visible systolic tugging about the region of the seventh and eighth ribs in the left parasternal line, or on the same side behind between the eleventh and twelfth ribs, has great diagnostic value. The same may be said of the diastolic shock or rebound felt when palpating the heart. The pulsus paradoxus, as already mentioned, has its significance.

Like this form of pericarditis, both the plastic and that with effusion may complete their course undiscovered. When sought, however, they are usually easy of detection. Localized pain and tenderness, an embarrassed heart, precordial distress, palpitation, arrhythmia, dyspnœa, dysphagia, aphonia, venous engorgement in the vessels of the neck and general cyanosis are predominant features. These are often occasioned by the causative disease, but their existence makes a search for this complication imperative. The physical signs, when present, are usually convincing. In the plastic variety we usually get the nontransmissible, blubbering presystolic rub near the apex, or the to and fro rub best heard at the base of the heart. The former should not be confounded with the murmur of mitral stenosis, nor the latter with those of aortic disease. A careful consideration of concurrent conditions obviates such error. Precordial bulging, more apt to occur in children, the exaggerated and pear shaped contour, with base downward, of a cardiac dulness extending upward not changing with position of patient, an obliteration of the cardiohepatic angle, a weak, diffuse, and but partly visible and palpable impulse with displacement upward, distant and muffled heart sounds, and diminished vocal fremitus with a tympanitic note over adjacent lung tissue, constitute the main diagnostic features of the effusion type.

It is beyond the scope of this paper to delineate in detail the many difficulties that may arise in differentiating this disease from obscure possibilities. It is mainly to be differentiated from cardiac dilatation, and some mediastinal and pleural affections, none of which give sufficiently the distinctive characters enumerated. However, half the battle is won with our consciousness of the possibility of its existence. Having that, with our partly pathognomonic signs at hand, pericarditis will not go undetected.

Acute endocarditis, also usually secondary and very rarely primary, presents *its* difficulties of diagnosis. In very early childhood, that is, before the third year, this disease is extremely uncommon. After that, however, it increases with advancing age, and should be looked for in every febrile condition. But often, despite effort, it escapes us, and the diagnosis is either made post mortem or when the chronic form has supervened upon the acute. When primary, the symptoms may be merely those of acute febrile disease with

the associated cardiac phenomena, such as exaggerated heart action and a slight blowing systolic at base or apex. One cannot make a diagnosis on this alone. The important second pulmonic does not help us in an early case, as it remains unchanged in the beginning, only becoming accentuated with cardiac hypertrophy consequent upon beginning loss of compensation. Even with an evident predisposition to rheumatism, chorea, or repeated attacks of tonsilitis, we are little aided, especially in the presence of anæmia. When, however, the accentuated second pulmonic appears, or, though very rarely, the second aortic becomes decidedly weak, and hypertrophy, thrill, and significant murmurs develop, we are safe in our conclusion as to the endocardial nature of the malady. When this disease is a complication of or secondary to other fevers, as it almost invariably is, the difficulty of diagnosis is increased, and at best, often tentative, inasmuch as the symptoms of the causative affection masks those of the complicating one.

Thus, we have innumerable pros and contras to contend with, and our only safeguard lies in a logical deduction from a study of coexisting and correlated conditions. In every acute disease a thorough examination of the heart should not be omitted. Of course, we may find an impurity of the first or second sound, with or without hypertrophy, whether accompanied by a short systolic murmur or not, and feel that we have sufficient ground to suspect the presence of an endocardial inflammation. But I think it behooves us to hesitate before imparting our opinion lest we have cause later to regret our impractical haste. Combine these, however, with an accentuated second pulmonic, barring pulmonary disease, and our chance of being in the wrong is strongly improbable.

Myocarditis will only engage a moment of our attention. Like the preceding, it is rare in childhood and often goes unrecognized. In physical signs it resembles merely a weak heart, with a faint apex beat, a weak and irregular pulse, dyspnœa, and attacks of syncope. An advanced myocarditis can, however, exist without symptoms or physical signs. When dilatation accompanies myocarditis we have the same signs plus an extension of cardiac dulness. The chronic form belongs almost exclusively to adult life. But stenosis of the coronary arteries consequent upon a local or general arteriosclerosis, the most common cause of myocarditis in the adult, may exist in the child, giving us the aged form of this disease. The presence of congenital or acquired syphilis and chronic interstitial nephritis should arouse suspicion in that direction. Cases of this sort, with but a weak and irregular apex beat, may present themselves to us in school. I remember just one such instance of irregular and weak heart in a girl, ten years of age, which turned out to be a case of acquired syphilis derived from her mother, who was infested with its active secondaries. The first intimation of myocarditis may be the sudden death of the patient. The presence of an infectious disease, especially diphtheria and scarlet fever, should prompt caution. Inasmuch as signs here are by no means conclusive of this trouble our diagnosis must rest upon concomitant conditions. When myocarditis, however, is associated with endocarditis or pericarditis, as it usually is, proof of its existence is both unnecessary and impossible, though we may assume some myocardial involvement in almost every case.

Chronic valvulitis is that form of heart disease most commonly met with by the medical school inspector in the public schools. Some of these school children are fortunate in having their disease already known to their parents, while others are also fortunate in not having to wait, through continued lack of diagnosis, for a greater destruction of tissue before going under treatment. This variety of disease has its obstacles in the way of diagnosis not easily overcome. In the very early and very late stages definite diagnosis is often impossible. The former has its doubt and the latter its confusion. It is as far fetched to make even a general diagnosis of cardiac lesion because of an accentuated second pulmonic and moderate hypertrophy or weak second aortic with pulsations in the vessels of the neck, as it is to ascertain the original left sided lesion in a heart in the late stage of tricuspid regurgitation. The books tell us that hæmic murmurs are systolic in time, soft and blowing in quality, weak, not transmitted beyond the anterior axillary line when at the apex, and heard in the vessels of the neck, often accompanied with a venous hum when at the base. In the absence of hypertrophy such signs are fairly conclusive. I say fairly, for here also we must register a doubt until our observation is sufficient to warrant a positive opinion. Even a coexisting hypertrophy does not necessarily preclude functional disturbances, inasmuch as the hypertrophy may be purely physiological, the result of anæmia, neurosis, or the habits of the patient. Should the murmur happen to be inconstant and possess the already mentioned phases of hæmic type, one may be satisfied with its nonorganic character. But I have found hæmic murmurs quite constant, only intermitting before their complete disappearance after lengthy treatment. The murmur may be somewhat loud and not quite so soft, yet hæmic; or very soft and blowing, yet organic. It may be transmitted either to the anterior axillary line or somewhat beyond in children, whether hæmic or organic.

Often theoretic definiteness is at variance with practical experience. This is here well illustrated by the clear book shading of one as distinct from the other, while practical experience merges them both so much as to allow only prolonged observation to place the line of demarcation in each individual case. Of course, given a systolic murmur at the apex, whether soft, harsh, loud, musical, or blowing, of a lifting character, transmitted beyond the anterior axillary line, with marked cardiac hypertrophy, a decided accentuation of the second pulmonic, with perhaps a thrill, and mitral insufficiency stands unassailed. But in the absence of reliable data it is better to postpone diagnosis and consequently prognosis, the latter so important to our patient, to a time of certainty. Many of us doubtless have had occasion to pon-

der for a long while over a suspected mitral insufficiency.

Several cases occur to me just now in which an apical systolic murmur very closely simulated the murmur of mitral regurgitation, and only after many months assumed the character of the hæmic type, finally disappearing. Appearances conversely have also evidenced themselves. Cardiac hypertrophy and an accentuation of the second pulmonic are the determining factors in many cases and sometimes erroneously, inasmuch as both may exist without valvular lesions, due to extracardial disease. Pulmonary emphysema may give us a moderate cardiac hypertrophy with an accentuated second pulmonic. Combine this with a hæmic murmur, particularly atypical, and note the confusion. There are also other possibilities producing signs simulating valvulitis. The bugbear exists only in our ignorance of these conditions. With knowledge the path to diagnosis may be long, but nevertheless, clear and decisive, and we follow this path with the confidence of ultimately meeting the object of our search.

Another phase to be considered with regard to diagnosis of mitral regurgitation is as to whether the insufficiency is the result of a valvular lesion or a relative hypertrophy of the left ventricle with an enlargement of the auriculoventricular orifice, and consequent inefficient coaptation of the mitral valves. This latter may be of a compensatory nature following aortic disease or to an extracardial obstruction to the circulation such as chronic interstitial nephritis and general arteriosclerosis. It is important to recognize the exact nature of the trouble, that proper treatment may be resorted to. In order to accomplish this, however, one must be extremely careful, deducing largely from concomitant conditions. The murmur in itself is not significant except that in the relative variety it is apt to be of the softer and blowing kind. The presence of an aortic lesion plus a very large heart extending downward and to the left beyond the nipple line would be significant of the aortic cause. While the absence of any aortic lesion, more moderate hypertrophy, an accentuated second aortic, chronic interstitial nephritis, arteriosclerosis, would indicate the extracardial one—safety thus lying in our reasoning from cause to effect. Occasionally a systolic murmur is heard at the apex transmitted from the aortic area, but much changed in quality. It should not be confounded with mitral disease or that of hæmic significance. The absence of anæmia, accentuated second pulmonic, and its transmittability to the left of the apex, distinguishes the character of this murmur.

We have less to contend with in our recognition of mitral stenosis. Its murmur and thrill are simulated by the Flint phenomena and pericarditis. The former exists only as associated with aortic insufficiency, and its signs are at times not so easily distinguished from those of mitral stenosis. A mental picture of the mechanism of this condition will always facilitate its recognition. Its murmur is echoing and rumbling, late diastolic, variable, and intermittent, with the character of the first sound unchanged, not affecting the second pulmonic nor the typical pulse of uncomplicated aortic insufficiency. While in true mitral stenosis we have the rough, purring, or vibrating murmur, accentuated second pulmonic, a short, sharp, first sound, with a mixed character to the pulse. The pericardial friction sound of presystolic time extends into the systole of the heart instead of ceasing with it, as does the murmur of mitral stenosis, and neither gives the characteristic stenotic pulse nor an accentuated second pulmonic. The difficulty also presents itself when an attempt at an early diagnosis is made. It is well to remember that the mitral presystolic murmur is always more pronounced in the upright posture, while the contrary holds good with all other murmurs. Therefore, when in doubt we must not forget to examine in the favorable position. When under those circumstances the murmur is absent palpation may reveal the presence of the pathognomonic thrill. Even when the latter is also wanting a problematic diagnosis may be made on the existence of a short first sound, an accentuated second pulmonic, forcible pulsations over the left auricle, and a feeble pulse. The presence of these signs should make one very cautious and cause repeated examinations, as occasionally both thrill and murmur are temporarily absent. Usually the pure stenotic murmur begins appreciably after the second sound and ceases with the first sound, and has a limited area of transmission about the apex beat. Occasionally this murmur is transmitted to the extent of being heard behind in the interscapular region. But it is not uncommon for it to be connected with a systolic murmur in consequence of a complicating mitral insufficiency, when the double murmur may occupy the entire time of the heart cycle, exclusive of that of the second sound. In the child this murmur, because of the relatively shorter pause between the first and second sounds, is, at its beginning, so intimately bound to the second sound that it may be mistaken for a diastolic murmur. This difficulty is obviated by bearing in mind that presystolic murmurs, however intimately connected with the second sound, always occur after it, while diastolic murmurs, though occupying the entire pause between the first and second sounds, must also be concurrent with it.

It is really remarkable to what degree these valvular lesions may exist without symptoms. Aside from such demonstration of this that most of us get in our private and institutional work, the public school offers an abundance. Many school children with "parent cards" bearing the diagnosis of some heart lesion have come to my clinic at the Good Samaritan Dispensary. In some of these the parents were unaware of the serious condition of their children, and were loath to believe it. One case, unknown to the parent, was that of a double mitral lesion advanced to the stage of tricuspid regurgitation, as evidenced by the tricuspid murmur, the pulsating liver and jugulars. I think Dr. Marscheider sent me this case. Another child, not quite so badly off, yet in a precarious state, came with its indignant mother, who loudly insisted on my disproving the diagnosis of the medical school inspector and de-

nouncing him for his ignorance. Before she left me she was very grateful to the health department and medical school inspector for giving her information whereby the life of her child might be prolonged. Many instances of this nature have come under my observation. But I am digressing.

Aortic stenosis presents its share of indefiniteness. In this disease we probably have more to contend with in the way of diagnosis than in any other valvular affection. Of course, in children aortic murmurs are usually hæmic, as morbid changes of the aortic valves are uncommon in early life. But even in the adult it cannot be emphasized too strongly that obstruction to the flow of blood at the aortic orifice, due to diminution of its calibre, is indeed rare. However, we may have signs similar to those produced by narrowing of the orifice when the orifice remains of the same diameter as in health. A roughening of the surface of the valves by vegetations, calcarious deposits, dilatation of the aorta causing relative obstruction, aneurysm, and hæmic impoverishment are productive of a systolic murmur. The murmur in itself has little diagnostic value, except that it is prone to be soft and blowing when hæmic, loud and harsh when organic. Both are heard in the vessels of the neck. The former, as a rule, has its maximum intensity over the second left intercostal space, no hypertrophy, is associated with the characteristic *bruit de diable* and the anæmic state—also having a short, soft and compressible pulse; while the latter usually has its maximum intensity in the second right intercostal space, has a cardiac impulse which is slow, labored and sustained, terminating with a short, sharp recoil, associated with a small pulse of slow rise, extended summit and slow decline, at times a systolic thrill, a weak second aortic, and marked cardiac hypertrophy. The second pulmonic is not affected in this condition except when the mitral valves are unable to close because of dilatation and compensatory hypertrophy of the left ventricle. When there is a mere roughening of the valves the murmur may be softer, approaching the hæmic type, shorter, the second aortic remains unimpaired, and a thrill is less likely to be present. Besides this, in the absence of other valvular lesions, the heart is only moderately hypertrophied. Aneurysm of the ascending aorta and relative obstruction would give a loud, ringing second sound, the former associated with the significant diastolic shock and other physical signs.

With pulmonic obstruction the maximum intensity is to the left of the sternum, the second aortic is unchanged, and the murmur is not heard in the vessels of the neck. A patent ductus arteriosis also has a somewhat similar murmur, but with greatest intensity to the left of the sternum, late systolic in time, and carried through the second sound. But extracardial signs of doubtful congenital lesions are as important for consideration as the direct ones. But the discussion of prenatal diseases is not within the scope of this paper. Adducing from what is already said, we cannot but concede that there are many possibilities to ferret, varied objective conditions to interpret, and numerous associations to bear in mind to give proper weight to diagnosis in this perplexing region.

Aortic regurgitation is not so much besieged with conflicting similarities. Aside from that of pulmonary regurgitation or pericardial friction sound, its murmur has neither hæmic nor other counterpart. This form of valvulitis is, therefore, usually easy of diagnosis. Its murmur is always diastolic, soft, occasionally somewhat harsh, and heard with maximum intensity in various parts from the aortic to the mitral region. Though the lesion may be congenital, or acquired during childhood, it belongs more to adult life. Given a straightforward case, there is no cardiac disease more easily recognized. Pulmonary regurgitation, with its synchronous murmur, though heard more to the left instead of to the right of the sternum, is differentiated by its extracardial congenital concomitants and the absence of other physical signs essentially concurrent with aortic regurgitation—such as, the bovine heart, forcible heaving over the precordia, a weak second aortic, marked pulsation in the carotids and more distant vessels, capillary pulsations, and a Corrigan pulse. We must not forget that a complicating valvulitis will modify some of these signs, but with careful search enough is usually elicited for positive diagnosis. The pericardial friction has its localization and allied manifestations. It is necessary for a knowledge of the pathological condition, prognosis and treatment to ascertain whether this regurgitation is relative or true. When true, it signifies moderate or severe destructive changes in the cusps, is associated with some stenosis and probable coronary artery disease with consequent myocardial changes. When relative, the aortic valves are intact, but are unable to coaptate because of dilatation of the atheromatous aorta immediately above them, and a myocardial complication, though still very possible, is less likely to occur. While the latter may ultimately prove serious, the former is a more immediate menace. The quality of the second aortic sound determines the character of the insufficiency, whether true or relative. The presence or absence of a general arteriosclerosis is helpful, but does not clinch the differential diagnosis. A loud, ringing, musical, or metallic second aortic with the diastolic murmur precludes destructive changes in the cusps and indicates the relative form of insufficiency. It is well to note here that, pathologically, stenosis and insufficiency, whether mitral or aortic, almost invariably coexist and that our diagnosis bears particularly upon the predominant lesion—the one requiring our attention. The sphygmograph and the sphygmomanometer are of decided value in diagnosis of cardiac diseases and should be used when opportune. But they belong to the refinements of office and hospital work, and despite their aid, are not to be considered indispensable. The stethoscope, however, should always be employed.

Tricuspid regurgitation, as an acquired primary lesion, is so rare that we can well afford to discard it as such. But it is by no means uncommon as a late development upon a left sided

lesion, and may occur with dilatation from a chronic adhesive pericarditis. It is the natural termination of all the usual forms of chronic valvulitis, and would be much more common if intercurrent affections or sudden heart failure did not carry off these patients. Its recognition is comparatively simple, and made more positively by indirect or extracardial than by direct or cardial signs. The presence of a soft, blowing systolic murmur, loudest over the lower part of the sternum, with a limited area of transmission, points to its existence. But this is not always clearly defined, inasmuch as a mitral murmur may either overshadow it or be transmitted sufficiently to the right to give the heart the appearance of a tricuspid involvement. Enlargement of the right ventricle, or extension of cardiac dulness to the right, has but relative importance. The same may be said of epigastric pulsations, commonly occurring with pulmonary emphysema. However, a pulsating liver, pulsating jugulars, presystolic systolic in time, and general venous obstruction, with perhaps a diminished second pulmonic, are accounted pathognomonic. Given the cardiac plus the extracardiac signs and we have a convincing physical picture of the disease.

This paper has by no means exhausted the difficulties in diagnosis of cardiac disease. Nor has it touched on cardiac dilatation and hypertrophy *per se*, on some of the rarer cardiac troubles, and congenital cardiac anomalies and lesions. A continued discussion of this subject may be desirable at some future time.

My conclusions pertaining to what has already been said are as follows: That no examination of the heart is perfect without employing every means at our command before concluding the diagnosis; that cardiac neurosis and hæmic murmurs should be decided upon only after an exhaustive search for a lesion; that in every febrile disease the heart should be examined; that impurities of sound are merely suggestive and not conclusive of the presence of a lesion unless corroborated by additional evidence; that no murmur, despite apparent typicalness, should in itself be considered pathognomonic of a special disease; that all murmurs are variant and may, in the early and late stages of heart disease, be absent temporarily—posture also affecting their intensity, appearance, and disappearance; that there is no disease more likely to escape detection for a long time or through life than disease of the heart, though easy of detection when attention is directed thereto; and that repeated examinations of all people in early life, as is at present done in the schools of New York by the department of health, will disclose such cardiac diseases as exist, and by instituting treatment, check or postpone their development, prolonging life, comfort, and happiness.

70 LENOX AVENUE.

Fæcal Fistula.—Fæcal fistula, if uncomplicated, small and situated in the vicinity of the ileocæcal valve, will often close spontaneously. Operation should therefore be postponed until it seems certain that a cure cannot be hoped for by Nature's unaided efforts.—*International Journal of Surgery.*

MORBID PROCESSES IN THE RIGHT ABDOMINAL AND PELVIC REGIONS OF THE FEMALE AND THEIR DISTINCTION.

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The diseases which originate in the region between the diaphragm and the pelvic floor, on the right side in women, offer many points of interest to the student. Their number and the variety, as well as the similarity of their symptoms, are so great, that we can well understand the difficulties in diagnosis and fully appreciate the work done by three great branches of medical science, to elucidate this subject. It is true, that in the majority of cases, a good clinical history and a careful examination, including cystoscopy, ureteral catheterism and x ray transillumination, will enable us to arrive at a correct diagnosis; but this may certainly be lessened, when abdominal or pelvic disorders coexist, or an acute affection with alarming symptoms calls for a quick diagnosis and immediate action.

In this communication only those abdominal and pelvic diseases will be considered, which may be mistaken for one another. They may be conveniently divided into acute and chronic cases, although a sharp line between them cannot be drawn, as the former may become chronic and the latter take the form of an acute exacerbation.

Let us, for example, take the case of a woman suddenly attacked with pain in the right inguinal region, accompanied by fever, vomiting, etc. This may point to an appendicitis, but not necessarily so. It may also be an ascending pelveoperitonitis or cellulitis, or an ileocolic invagination, or a calculus passing through or impacted in the ureter. It seems to me that all these conditions differ sufficiently in their history and the symptoms to which they give rise, to allow of an accurate differential diagnosis.

With reference to appendicitis, we will first consider those cases where the appendix lies in the abdomen and the inflammatory process tends to selflimitation. The pain is spontaneous, constant, localized, and aggravated by pressure. The abdominal muscles are rigid on the affected side; the ascending colon is distended; meteorism and tenderness in the further progress of the disease extend over the abdomen. Gastric disturbances, fever, and general prostration are present, the pulse is accelerated, etc. A swelling can be felt in the right inguinal region, which cannot be reached through the rectum or vagina.

The symptoms are entirely different from those produced by the impaction of a calculus in the lower portion of the ureter. Here the pains are much more violent, remittent and spasmodic in character. The patient changes position constantly, and writhes in pain, in contrast to the quiet attitude shown in peritonitis. The abdomen is soft; we can press the fingers deeply toward the spine and find the painful spot; the pulse is full and slow, the fever absent unless inflammation of the renal pelvis coexists. Here, as in other parts of the body, the direction in which the pain radiates is of great significance—radiating from the kidney in renal calculus or extending into the epigastrium, the chest, and to the right shoulder in hepatic colic.

In acute ileocolic intussusception, the pain is also

spasmodic, but becomes continuous when peritonitis is added. It is marked by tenesmus, the passage of bloody mucus, and the presence of a sausage shaped tumor on the right side.

An ascending pelveoperitonitis may be mistaken for an abdominal exudate due to appendicitis, but only on superficial examination. History and symptoms point to a puerperal or gonorrhœal infection, the exudate in the inguinal region is continuous with that in the small pelvis, a thickened tube and ovary can usually be found on the right side of the uterus, or both sides may be diseased. Much more difficult is the differentiation from inflammatory residues, which have remained in the right inguinal region after the inflammatory products in the pelvis have been absorbed. The connection with pelvic disease here no longer exists. Thus we find occasionally inflammatory cysts, the size of a man's fist, in the right, lower abdominal region; they have become rounded by the dragging and rolling movements of the intestines and are the remnants of previous pelveoperitonitis. They are adherent to their surroundings and therefore immovable and only slightly tender. They may be taken for a cystic appendix, and especially for an ovarian cyst; the latter is, however, very movable and is connected with the uterus by a palpable pedicle.

Tuberculous peritonitis is apt to produce similar cysts, containing serum or pus. Their shape is more irregular, and besides the general condition of the patient, the presence of fever and the pulmonary disturbances have to be considered. Whenever we meet with cysts of obscure origin in the right abdominal and inguinal regions, we should search for further signs of tuberculosis, i.e., scattered, hard swellings, ascites, and especially for a rolled up and retracted omentum, which usually lies in the epigastrium as an oblong or square, plate like, indurated mass. A parametritic exudation extending from the pelvis to behind the cæcum may leave here a chronic induration which is very difficult to distinguish from paratyphlitic inflammatory products, because the connection with the uterus may have been absorbed. This condition, together with inflammatory cysts, come under the head of chronic diseases, which I have reserved for the second part of this paper. Not to break off too abruptly this topic, I may as well continue and conclude its description.

In women suffering from chronic constipation, the ascending colon can frequently be palpated distinctly. In thin persons with relaxed abdominal muscles the appendix can also be felt as a more resistent, cord like structure. Intraintestinal disturbances, referable to the colon, atrophy of the walls of this viscus, stercoral ulcers, local tympanites of the ascending colon, irritation of the adjacent peritonæum, and slight exudations into the retrocæcal connective tissue, are conditions which occur more frequently than we are inclined to believe. They are confounded with a slight attack of appendicitis from which they are in fact difficult to differentiate. A retrocæcal exudate (paratyphlitic) stands in intimate relation with the cæcum and colon, it encloses the same, and makes the impression of a columnar mass, upon which the soft intestines rest. The pain is often referred to the back and extends upwards to the lumbar region. The exudation in parametritis, which has become isolated and disconnected, may also rest on the iliac fossa, behind the cæcum, but its shape is more flat, expanded, and irregular. The history in the one case points to intestinal, in the other to pelvic derangements.

A carcinoma of the cæcum also produces an indurated swelling in the inguinal region, but it is hardly possible to mistake it as intestinal disorder. Increasing size of the tumor and general discrasia are prominent symptoms.

Of great interest are those cases in which the patient, after a sudden, acute attack of pain in the right lower abdominal region, passes into a state of collapse. You are called to the bedside to give your advice as to the diagnosis and the propriety of surgical interference. What may be the cause of the evident catastrophe? Perforation of the appendix, acute intestinal obstruction, rupture of a tubal gestation or of a pus sac, or strangulation of an ovarian cyst? Let us scrutinize and begin with an elicitation of the history, which however is often very unsatisfactory. Follow this with an abdominal, vaginal, and rectal examination. All diseases in which the abdominal cavity is suddenly flooded with infectious material, present intestinal symptoms, principally produced by a combination of acute intoxication with nervous shock. We have a rapid, weak, and irregular pulse, clammy perspiration, sunken eyes, yellowish conjunctivæ, cold extremities, rapid and superficial respirations, and frequently subnormal temperatures. These symptoms may occur in strangulation of an ovarian cyst, the bursting of a pelvic abscess, and in perforation of the appendix. In the first two diseases, however, we can always detect a tumor or infiltration in the pelvis, with local tenderness. An ovarian cyst may of course have encroached upon the right inguinal region, the more so because it increases in size after strangulation; but its connection with the pelvis can always be ascertained, whereas in perforating appendicitis such a massive exudation does not develop in so short a time, nor has it such a regular, rounded form. When the uterus is freely movable and the pelvis free from inflammatory swelling, or growths, we are justified in considering the abdomen the seat of the disease. The pain in perforating appendicitis spreads very rapidly over the entire abdomen and diminishes in intensity at the seat of origin; meteorism may be very pronounced and even fæculent vomiting from an intestinal paralysis may set in. The pain in an acute intestinal strangulation remains severe and constant at the same point; even after the entire abdomen has become tender from complicating peritonitis, the area of strangulation can still be made out, by its higher degree of sensitiveness. Incessant vomiting, absolute constipation, excessive tympanites with local pain, and tenderness over the entire abdomen, are the chief symptoms of an acute intestinal strangulation. A collapse at the beginning is not so marked; pulse and general condition may even remain good, until peritonitis and stercoracious vomiting set in.

The collapse following rupture of an extrauterine pregnancy in the early months is not due to absorption of infectious material but to acute hæmorrhage. A woman is suddenly seized with sharp pain in the iliac region, faintness, coldness of the extremities, rapid and feeble pulse, etc., features which closely resemble those caused by the affections mentioned

above. Still, some discriminating points can be made out. The face is deadly pale, the lips are blue, repeated attacks of syncope and dimness of vision are present. The patient takes a deep breath now and then, she gasps for air. The dyspnœa in the other diseases is different. The respiration is rapid and superficial. The original agonizing pain subsides and the patient complains of a feeling of heaviness and fullness in the pelvis. The mental faculties remain clear, the patient recognizes her critical condition, while in resorption of infectious material after perforation, strangulation of ovarian cyst, or rupture of a pus sac, she is apathetic and frequently in a condition of stupor. Often signs of abortion or other symptoms referable to ectopic pregnancy are present.

The discovery of fluid blood in the pouch of Douglas is, in most cases, impossible; only when the quantity is very large can a bulging of the posterior vaginal wall be felt. A palpable tumor in the pouch of Douglas, with displacement of the uterus, i.e., a true retrouterine hæmatocele, is the result only of coagulation and encapsulation of the blood, brought about by a serofibrinous peritonitis.

As is well known, an acute rupture of a tubal gestation with dangerous hæmorrhage is of rare occurrence as compared with tubal abortion, in which the fœtus dies in the tube, and slow and gradual hæmorrhage into the abdominal cavity takes place, with the formation of a retrouterine hæmatocele. German gynæcologists base a difference in treatment upon this distinction. In acute rupture, with dangerous internal hæmorrhage, they advise prompt surgical interference; in tubal abortion, with slow and gradual loss of blood, and the formation of a retrouterine hæmatocele they advocate expectant treatment. It is true that in the latter event, the symptoms are not so urgent, but, I maintain, that in many instances such a standpoint is fallacious, for the following reasons: Hæmorrhages after acute rupture may also occur gradually and give rise to a bulging of the vaginal vault. A serofibrinous pelveoperitonitis with a retrouterine hæmatocele may very rapidly develop; furthermore, tubal abortion may be followed by dangerous loss of blood; the contents of the tube and abdominal cavity may become infected, and even without infection, several months may elapse before absorption of the blood be accomplished. These are, indeed, sufficient reasons for preferring the surgical to the expectant treatment.

When the appendix dips into the small pelvis and becomes the centre of suppuration, conditions may be produced which are most likely to be confounded with an acute peritoneal exudate, pelvic abscess, or a collection of pus in the tube or ovary. But these are usually preceded by pelvic disorders of long standing and can be traced to an infection. Not too much reliance should be placed on the statement that in infection both sides are involved, as the infectious process may be active on one and latent on the other side. When a healthy woman is suddenly seized with pains in the right inguinal and pelvic regions, with chills, fever, vomiting, etc., and presents a rapidly developing, inflammatory mass to the right of and posterior to the uterus, the outlines and fluctuation of which can be more easily determined by a rectal examination, we may reasonably assume the presence of a peritoneal abscess due to acute appendicitis within the pelvis. An appendix may be attached to the diseased annexa; such an occurrence is not uncommon, especially when it hangs down in the true pelvis. It represents thus a pelvis viscus itself, and by its close proximity to the ovary, the Falloppian tube, the broad ligament, participates in the pathological changes of these organs.

Three conditions may be possible:

(1) The annexa are the primary seat of the inflammatory changes; the appendix is passively involved, and bound by adhesions to the surrounding parts. Inflammatory action is principally manifested in thickening of the peritonæum and the tubal wall, i.e., periappendicitis.

(2) The appendix is primarily affected; the changes of the annexa are of secondary nature—perisalpingitis.

(3) In the course of a chronic salpingoophoritis with pelveoperitonitis, a genuine appendicitis may develop.

This last variety may be disposed of at once by the statement that when a primary inflammation develops in an appendix within the pelvis, a discrimination from inflammatory exacerbation due to other sources is wellnigh impossible; on the other hand, if the appendix lies in the abdomen, a diagnosis may be more easily made.

I will not attempt to point out the means of differentiating these three varieties; it is easy to lay down wise rules and difficult to apply them correctly at the bedside. In general terms, it may be said that primary affections of the uterine annexa can usually be recognized. The coexisting periappendicitis may not materially aggravate the condition and from the failure of its discovery, no harm will result. The same applies to the second variety, where an appendix in a chronic state of inflammation causes perisalpingitis and pelveoperitonitis.

In appendicitis, rigidity of the abdominal muscles on the right side is noticeable; uterine hæmorrhages and anomalies in menstruation point to a pelvic derangement. Even if appendix, ovary, Falloppian tube and omentum be matted together in one mass, the condition of the mucous lining of the appendix or of the Falloppian tube should decide in determining the primary character of the disease. This can frequently be ascertained only after laparotomy. We should not forget that appendicitis is a disease per se with distinct symptoms, taking its origin in the mucous lining, which shows catarrhal and ulcerous changes; if the mucous membrane be intact and periappendicitis be present, we may safely assume that the irritation proceeds from the outside. The same may be said of salpingitis.

Having considered inflammatory affections, I shall take up tumors, which by their size, fill out the right abdominal and inguinal regions. Mesenteric and omental cysts, myxomatous and sarcomatous tumors of retroperitoneal glands, come under this head; but I pass them over, not to unduly extend the scope of this paper. Distended gallbladder, echinococcus cyst of the liver, may likewise be omitted, as their origin can generally be traced by the ordinary methods of examination.

The occurrence of all these tumors should not be forgotten, to determine the nature of obscure

growths within these regions. The most important are the cysts of the kidney and ovary. Hydronephritic cysts have occasionally been mistaken for those of the ovary, but with the perfected methods of investigation at his command, the practitioner can hardly fail to form a correct opinion. If an operation is planned and the pathological condition not thoroughly cleared up, cystoscopy and ureteral catheterization are indispensable, in order to recognize the function of each kidney. But even without these aids, we are frequently enabled to distinguish an ovarian from a hydronephritic cyst by palpation and percussion.

I need hardly emphasize that in establishing the diagnosis, all the rational and physical signs should be taken in consideration and that the purpose of this communication is fully answered by the description of those diagnostic factors which appear to me of greater interest. Hydronephritic cysts are extraperitoneal tumors, which develop laterally and with increasing size fill out the flank, pushing the ascending colon to the median line. They represent fluctuating tumors, situated in the lumbar region and extending from behind forward and in immediate contact with the lateral abdominal wall. They have the colon in front or on the inner side, the outline of which can readily be recognized on inflation. Middlesized ovarian cysts lie in the inguinal region and have the cæcum on the outside; large ovarian cysts occupy the centre of the abdomen from the pubes upward. They form the greatest prominence of ovoid outlines in the middle of the abdomen, lie in direct contact with abdominal walls, and leave a small zone of tympanitic resonance in the flanks.

In hydronephritic sacs, the flank is bulging and no resonance can be elicited here. In retroperitoneal and mesenteric cysts, small intestines are usually interposed between tumor and abdominal parietes. If we succeed in mapping out the ovaries, or in palpating by rectal examination, and pulling down the uterus with a forceps, a pedicle connecting the uterus with the tumor, characteristic diagnostic points of positive value are furnished. If we fail to discover those structures, the exclusion of an ovarian tumor would be unwarranted. The same restrictions must be placed on the interpretation of the mobility which is usually the greatest in those parts of the cyst which are the remotest from the starting point.

Quite in contrast to the direction, which hydronephritic cysts take, wandering kidneys tend to move either behind or rather to the inner side of the ascending colon. They seem to follow the path laid out by the ureter, and are occasionally discovered in the iliac fossa and even in the true pelvis, where they may be mistaken for uterine and ovarian tumors. Hydronephrosis, symptoms of incarceration, may develop and the difficulty of recognizing the true state of affairs can well be imagined. When an excessive mobility, a peculiar consistency, shape and sensation excited in the patient by grasping the kidney, can be elicited, much is gained; but, unfortunately, the kidney, when extremely displaced, is more or less fixed in its abnormal position and altered in its shape. A pelvic kidney, to use a short designation, may be situated posteriorly and on the side of the uterus, thus pushing this organ out of its place in the opposite direction, or it may, a very rare occurrence, occupy the space between bladder and uterus laterally, dislodging the uterus backward and to the side. The symptoms are not at all characteristic; they consist of radiating pains on the affected side and the presence of a solid tumor on the side of the uterus, which is usually attributed to the ovary. To eliminate errors, x ray transillumination and ureteral catheterism have been advised.

One of the most interesting chapters on differential diagnosis refers to inguinal pains. At a point or rather an area where the line connecting the anterior superior spine crosses the external borders of the recti muscles, tenderness and pain are often experienced by women. They are of rarer occurrence on the left than on the right side, but only the latter concerns us. The pain may be so obstinate, extending even over years, and so annoying as to excite suspicion of an existing organic disease. In fact, a great number of ovaries and appendices were sacrificed under the assumption that inflammatory changes in these organs were the cause of the suffering. But the operation would bring a temporary relief only, because the expected inflammation did not really exist, and the hysterical character of the disease had been overlooked. Errors, however, may be made just as well in the other direction, namely, to pronounce a patient suffering from inguinal pain, hysterical or neurasthenic, while in fact, a chronic appendicitis or a chronic oophoritis is existing. Only a careful examination of the sexual organs and the nervous system will furnish us diagnostic points for a correct conclusion. It must be admitted that without narcosis, the investigation is sometimes hampered by contracted abdominal muscles, which cause dulness on percussion and the impression of inflammatory swellings. Furthermore, inguinal pain is sometimes the only manifestation of a nervous derangement. In any event, chronic inflammatory processes must be differentiated from nervous disorders; their presence must be excluded before we accept the diagnosis, inguinal pain due to hysteria.

In chronic oophoritis (small cystic degeneration) we must be able to palpate the swollen and painful ovary on the right side; in appendicitis, we have the history of preceding attacks with fever, gastric disturbances, etc.; besides, the thickened appendix may be felt in suitable persons; in chronic pelveoperitoneal attacks, caused by chronic gonorrhœal salpingitis, we are able to map out the thickened tube, and have the history and signs of a previous infection. If the inguinal pain is of hysterical origin, usually other nervous disturbances are manifest. The character of the pain sometimes reveals unnatural features. The patient shrinks from the slightest touch, while a firm and deep pressure is well borne; or the pain is not experienced at all when the patient's attention is distracted. In inflammation, pressure increases the pain. The inguinal pain of which patients afflicted with movable kidney so often complain, is in most instances a nervous symptom and has in only a small number of cases the significance of a chronic appendicitis.

Of late attention has been directed to inflammatory products which surround the diseased appendix or gallbladder, and give rise to pains and other disturbances far more formidable than the original affection. On the other hand, instances have been reported of obscure abdominal disorders, in which

cords or membranous adhesions have been discovered after laparotomy, and which, in the absence of organic lesions, could plausibly be explained only by the supposition of an infection from the intestinal tract. They are usually not palpable. A fixed pain, local meteorism, and an obstinate constipation alternating with mucous stools, may be mentioned as prominent features, though sufficiently ambiguous to warrant an exploratory laparotomy.

The right abdominal region is indeed a field of unlimited possibilities, and no severe criticism should be administered to the erring practitioner, for even in hospitals mistakes will occur, and a patient, suffering from typhoid, occasionally be operated upon for appendicitis.

132 EAST SEVENTY-THIRD STREET.

LUMBAR PUNCTURE IN DIAGNOSIS AND THERAPEUTICS.*

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The possibilities of lumbar puncture in diagnosis and for relief of intracranial pressure were first pointed out by Quincke in 1891. In the same year Koplik reported five cases of cerebrospinal meningitis in which it was used in a therapeutical way, with a recovery of four of these patients. A leading perodical of that date commented that "as a therapeutical measure the operation seems destined to rank with aspiration of the pleural cavity." While this destiny has perhaps not been realized lumbar puncture has established itself both in diagnosis and therapeutics.

Familiarity with the operation occasioned by its use for spinal cocainization has been recently greatly extended by its employment in epidemic meningitis. It would not be of interest, I think, to discuss the technique of the pocedure, suffice to say that the recent extensive experience with it has proved that the operation is attended with very little risk. Careful asepsis eliminates the greatest danger, that of infection. The few well authenticated cases of alarming symptoms or of sudden death reported as following the withdrawal of fluid have been in cases of brain tumor, so that in these cases if used at all extra precaution should be taken, i. e., tapping in the recumbent position, allowing the fluid to come away slowly and in small quantities.

The normal amount of cerebrospinal fluid has been variously estimated, the consensus of opinion, however, is that it is about 10 c.c.; under pathological conditions, this may be increased to 200 c.c. or more. The normal fluid is always absolutely clear and colorless, of a specific gravity of 1,001 to 1,010. It contains a small amount of albumin and a sugar like substance which reduces Fehling's solution. It normally contains a few lymphocytes.

In inflammations of the meninges the fluid loses its normal clearness, its appearance varying from the slight opalescence of a low grade inflammation to the turbid fluid of the acute infections. The degree of turbidity depends upon the amount of leucocytes and fibrin contained. The fluid sometimes has the consistency of thick pus, too thick to flow from the needle, and it may be bloody from a subdural hæmorrhage, or the first few drops may be bloody from the puncture of a small vein. The presence of blood makes a differential count of the leucocytes valueless. Cryoscopy is of no practical value. Chemical changes in the fluid are of minor importance; the amount of albumin increases with inflammations, and the sugar like substance diminishes, is entirely absent in the acute inflammations, and usually disappears early in the tuberculous cases. The presence of cholin is said to attend degenerative changes in the brain and cord. Cytodiagnosis, a differential count of the white cells is of value. While normally there are but few cells present in the fluid, with inflammations of the meninges they may be present in great numbers. With the acute microbic infections an increase of the polynuclears predominates, supposedly because of their greater phagocytic powers. In the low grade inflammations a lymphocytosis occurs; it is the rule in tuberculous meningitis, and nearly always accompanies the meningitis which is associated with certain organic diseases of the brain or cord, tabes, paresis, the syphilitic or postsyphilitic affections, excepting the hereditary. While in hydrocephalus, epilepsy, abscess of the brain, paralysis agitans, tumor, poliomyelitis, hysteria, or the peripheral palsies, cells are absent or but few in number.

Almost all of the pathogenic bacteria of which we know have been reported as the exciting cause of meningitis, the most common, however, are the meningococcus of Weichselbaum, the tubercle bacillus, the streptococcus, and the pneumococcus. Bernstein reports the results of examination of 265 specimens of cerebrospinal fluid. Forty of the cases bore a clinical diagnosis of tuberculous meningitis and in thirty-eight of these the tubercle bacilli were found. He calls attention to the constantly increasing percentages of positive findings reported in tuberculous cases due to the improving technique in examination. The turbidity of the fluid is often slight, only discernible when contrasted with a tube of distilled water. He emphasizes the importance of noting the fibrin mesh which forms after the fluid has stood for a few hours. This is always indicative of an exudative inflammation of the meninges, and is never present in tumor, abscess, sinus thrombosis, hydrocephalus, or meningeal irritation. This fibrin net is utilized in the search for the organisms, as they are often enmeshed in it. Painstaking search is often required, and positive findings only are conclusive. Examination of cerebrospinal fluid has disproved the dictum that tuberculous meningitis is invariably fatal, as a few well authenticated cases have been reported in which the tubercle bacilli have been found, and the patient gone on to recovery.

My personal experience with lumbar puncture has been almost wholly in epidemic meningitis. During the months of March, April, and May, 1904, sixty cases of epidemic cerebrospinal were treated in the wards of Gouverneur Hospital, N. Y. A clinical study of these cases has been reported by Dr. Francis Huber and myself in the *Bellevue and Allied Hospital Report* for that year. In forty-nine of these cases lumbar puncture was performed and in forty-four an intracellular diplococcus negative to the Gram stain was found in a smear of the sediment. In other series of cases several of which have been reported during the past eighteen months, even

* Read before the Sangamon County, Ill., Medical Society, March 12, 1906.

higher percentages of positive findings have been obtained, where cultures as well as smears have been resorted to in routine examination. As a rule the organisms are readily found.

The fluid early in the disease is usually quite turbid and spurts out or flows freely from the needle. After standing a short time a deposit of leucocytes and fibrin occurs, and in these cells, chiefly polynuclear, are found the characteristic diplococci. After a few days the fluid at time of withdrawal will often contain flakes of fibrin, these at times clogging the needle and stopping the flow so that manipulation, drawing it out or pushing it in a little way or gentle aspiration, is necessary to again start the flow. It was never our custom to insert a stylet in the needle after it had been introduced, the ordinary steel aspirating needle was used and the possibility of forcing a bit, or rust, or unabsorbable material into the canal to act later as an irritant, was always kept in mind. If the course of the disease is prolonged these fibrin flakes may disappear, the fluid becomes almost clear containing few cells and the bacteria found only after prolonged search or by culture. Occasionally, in the severe cases only a drop of thick grayish pus will ooze from the needle, and at times a "dry tap" will be experienced. When this occurred it was usually in restless patients with marked lordosis, the hyperextension of the spine or struggles of the patient making entrance to the canal more difficult.

A frequent cause of a failure to obtain fluid I found was that the needle if it strikes the bone or cartilage instead of the interlaminal space may bite out a bit of fibrous tissue which plugs the mouth so that fluid can not flow even after entrance is effected. But in cases where this does not occur sometimes no fluid will be obtained possibly because of thickening of the membranes or a very thick exudate. In fact, there were instances when after withdrawal of the needle a small drop of pus would be found in its mouth not passing through because of its thick consistency or possibly lack of pressure in the canal. In none of our cases were any unfavorable results of the puncture noted.

Lumbar puncture has been of value in the diagnosis of intracranial complications of otitis. The absence of fibrin and leucocytes from the fluid is said to absolutely exclude the presence of a meningitis although an increase in the amount of fluid—a so called serous meningitis—may be present. A sinus thrombosis may give a blood tinged fluid. As a help in determining the nature of intracranial injuries it has been of service. The diagnosis of subdural hæmorrhage has its verification in a bloody fluid.

As a therapeutical measure the status of lumbar puncture is less well defined. In the treatment of eclampsia it has had some enthusiastic advocates, however the evidence that it is of value in this disease is not conclusive; results have either been indifferent or other measures have been used in conjunction with the puncture to which the improvement in symptoms might be attributed. In uræmic conditions and for the relief of the headaches of Bright's disease, while in the most cases the results hoped for have not been attained, there are some instances in which amelioration of the symptoms has promptly followed. This has usually been attributed to the relief of the excessive intracranial pressure. Legraine reports a case in which after every other method had been tried unsuccessfully to relieve the headache 12 c.c. of fluid were withdrawn; this was repeated seven times, each puncture being followed by a considerable period of relief. In this case evidence of excessive pressure was not always present, and he thinks that the relief may have been due to the removal of a toxic fluid.

The headaches of syphilis and chlorosis are reported as having been relieved by lumbar puncture.

Deraigne advocates its use in the new born, when as a result of difficult labor the infant shows cyanosis, contractions, convulsions, coma, or rise of temperature. He recommends the removal of 3 to 10 c.c. with repetitions if necessary. A diagnosis of subdural hæmorrhage is confirmed—its pressure or that of congestion relieved. He thinks that in some instances it may be a life saving measure.

Several cases have been reported of the use of lumbar puncture to relieve symptoms of pressure following injuries to the skull; the removal of several cubic centimetres of fluid being followed by prompt improvement, the respirations becoming regular, consciousness restored or the headaches lessened. A possible objection to its employment in intracranial hæmorrhage would be that in relieving the pressure we remove the check to the hæmorrhage and invite further bleeding. Whether or not this is a practical objection experience may show; it could hardly so be after a clot had formed.

Temporary improvement has been reported as following the use of lumbar puncture in hydrocephalus. Permanent benefit may here only be hoped for, if at all, under the age of two years.

In serous meningitis this condition of stupor, choked disc, and slow pulse which sometimes occurs secondary to the infectious diseases, it has been said to afford marked relief. In the serous meningitis complicating otitis it has been reported curative. Blumenthal reports a case of serous meningitis in which a withdrawal of eleven drams was followed by an improved condition for a few days, the symptoms returned, however, and three and one half ounces were then removed at one time, and a complete recovery resulted.

In the course of some recent investigations by French dermatologists into the pathogeny of lichen, it was noted that certain skin diseases attended by intense pruritus had that symptom relieved by lumbar puncture. Cases of lichen circumscriptus, dry eczema, and psoriasis were each benefited by it, the removal of 6 to 8 c.c. of fluid resulting in alleviation or complete cessation of the itching, and a subsidence or entire disappearance of the cutaneous lesion. A single puncture in some cases afforded permanent relief, in others repeated punctures were necessary. Some of the results were most remarkable, patients who for years had suffered intolerable itching being relieved in a few hours.

The injection of tetanus antitoxine into the spinal canal should have all the advantage that its injection directly into the ventricles may have. It has been proved that substances injected into the canal are soon diffused throughout the entire cavity,—silver salts injected into the lumbar region have been found at autopsy twelve hours later in the ventricles and over the base of the brain. The injection of antiseptics into the canal as a mode of

treatment in epidemic meningitis has demonstrated one thing—that the meninges are capable of entertaining strong solutions of these irritants without apparent harm resulting. There is not conclusive evidence that they have in any way modified the course or symptoms of the disease.

We should remember that in the craniospinal cavity, excepting the abdominal and pleural the largest serous lined cavity in the body, we have on the one side an absolutely fixed and unyielding wall, while on the other in the delicate nervous tissue is our most vital and most impressionable organ. We know more or less the profound significance of the symptoms attending its compression or injury. With an acute infection of this extensive membrane the exudate may be thrown out very rapidly, and the suddenly and greatly altered condition of pressure may result in a paralysis of the vital centers. Dr. Otto Schultz, who as coroner's physician in New York, had opportunity of observing post mortem many of the fulminating cases of cerebrospinal meningitis, says that "in some of the cases there was evidence of sufficient compression of the brain to account for death."

It is in such acute conditions where the brain is unable to so quickly adjust itself to the altered conditions of pressure that lumbar puncture probably has its greatest opportunity. In the epidemic meningitis many of the cases a few hours after onset present a profound coma, with irregular respirations, and a variable condition of the pulse. Upon puncturing these patients the fluid will often spurt out or flow in a steady stream instead of drop by drop as when the pressure is normal. In some cases I have under these conditions withdrawn 10 to 14 drams, and repeating the puncture the same day secured an equal amount the second time. Following the puncture the coma usually gives place to restlessness with delirium, or a return to consciousness with complaint of intense headache. These conditions succeeding coma may in turn be sometimes relieved by the withdrawal of more fluid. The puncture should be repeated as often as the symptoms and manner of flow from the needle indicate pressure. In removing the fluid we are not only reducing the excessive pressure, but we are removing a toxine laden fluid which must otherwise be absorbed. We must remember, however, that this disease is an encephalitis, as well as a a meningitis, and that the patient is suffering from a profound toxæmia, which may prove speedily fatal. Throughout the course of the disease, or so long as the tendency to excessive accumulation of fluid continues, the puncture is probably of value, though often no immediate results can be noted. Some of our patients were tapped many times, one boy running a prolonged course seventeen times, seven to twelve drachms usually being removed. In these prolonged cases periods of collapse with marked symptoms of respiratory failure not infrequently occur. It was thought that this might be due to pressure, and puncture was resorted to, at times with apparent benefit; in other instances, however, the patient would respond only to vigorous stimulation. It is possible that adhesions may occlude the foramen of Magendie, inducing a hydrocephalus, which cannot be drained by puncture of the spinal canal.

The clinical course of the disease is very irregular, variations in the symptoms so marked and unaccountable; an unconscious or stupid patient may a few hours later possess a clear mentality to relapse the next day to coma; the headaches come and go, the temperature rises and goes down, and all quite independent of any form of treatment. With such a disease it is difficult to judge of the value of any therapeutical measure. Most of those who have used lumbar puncture in meningitis accord it a more or less prominent place in the treatment of the disease throughout its course. It has seemed to me that it is of greatest value early in the disease and in those cases with a rapid invasion and a rapid and extensive accumulation of the exudate.

Summarizing, we find that lumbar puncture properly performed is attended by very little risk. In diagnosis it enables us to determine the presence or absence of a subdural hæmorrhage, to differentiate a purely serous effusion from that of an exudative inflammation. Its bacteriological examination with positive findings, is the only conclusive test as to the exact character of a microbic infection of the meninges. Its cytology affords valuable aid in determining the presence of degenerative changes in the brain or cord, in distinguishing these organic nervous lesions which involve the meninges from those which do not or from functional disorders.

In therapeutics it may have some value as a means of removing a toxic fluid as in uræmia, certain skin diseases, or the acute infections of the meninges. It is a palliative measure for the relief of intracranial pressure from any cause, and in acute conditions where the cause is a passing one, as hæmorrhage or the acute inflammation with rapid and excessive exudation, it may possibly be the means of saving life.

420 EAST WASHINGTON STREET.

Therapeutical Notes.

Lavage of the Stomach in Delirium Tremens.—In the treatment of delirium tremens, Serguievsky (*Vratchebnaya Gazeta*, through the *Bulletin général de thérapeutique*, April 23, 1906) has adopted the rule of beginning the treatment by a lavage of the stomach, followed by the administration of ten drops of a mixture of equal parts of tincture of nux vomica and of tincture of opium. It is true, that in order to effect the lavage it is often necessary to use some degree of force, but this inconvenience, according to the author, is largely compensated by the good results of this operation. Most patients feel better directly after the lavage, which removes the mucous accumulations from the stomach; after this they fall asleep, and subsequently the mental phenomena are reduced, or greatly relieved.

Trifacial Neuralgia Not a Functional Disease, But a Degenerative Neurosis.—In a communication to the College of Physicians of Philadelphia, Alfred Gordon formulated the following conclusions based upon the pathological findings in eight cases of neuralgia: (1) The occurrence of degeneration of the peripheral nerves is frequent, if not constant, in neuralgia. (2) This nerve degeneration is very probably a primary condition, which, as a neuritis, assumes an as-

cending course, and involves, secondarily, the Gasserian ganglion. Although this contention is still debatable, there is great probability in favor of this view. (3) The bloodvessels plays a certain rôle in the causation of a degenerative state of the peripheral nerves. (4) It is difficult, if not impossible, to draw a sharp distinction between neuritis and neuralgia, as accumulative facts show an anatomical basis in the latter affection. (5) In view of these anatomical facts, it is highly important to remove surgically a nerve affected with so called neuralgia as early as possible after a short trial of medical treatment.

Ichthyol Applications for Scarlatina.—W. H. Lawrow (*Deutsche Medizinal-Zeitung*, 1905, No. 4) recommends the application, twice daily, of the following mixture in the treatment of scarlet fever:

℞ Ichthyolis, ...2.5 gramme;
Aq. filtratæ, } .....āā 25 grammes.
Glycerini, }
M. To be applied to the surface of the entire body by means of a soft brush.

This quantity is enough for two days, and it is used morning and evening. The course of the disease is shortened, if the treatment begins on the second day of the sickness, and the throat lesions are also much less severe. Desquamation occurs, as in other cases, but begins sooner than usual. Relapse and kidney involvement has not been observed.

Treatment of Tuberculosis by Recalcification.—Paul Ferrier proposes a simplified method of treating pulmonary consumption by regulation of diet and the use of remedies, which favor calcification of tuberculous deposits. The objects as stated in *La Tribune médicale* (May 22, 1906) are: (1) To remove from the diet of the tuberculous patient all acid foods. (2) To overcome or prevent gastrointestinal fermentation, and to reestablish the secretion of hydrochloric acid by the stomach when it is insufficient; and (3) to give to the organism in food and drink certain elements which favor recalcification. The following rules are given: (1) Avoid beer, wine, cider, all fermented or alcoholic drinks, salads, vinegar, oranges, lemons, and acid drinks. Do not eat butter, except a small amount on vegetables; do not eat fermented cheese. Do not eat more than 200 or 300 grammes of bread in the day (according to the weight of the patient). (2) To be used are eggs, lean meat (red or white), fish (except mackerel, salmon, or herring), vegetables, farina, baked fruits for dessert; sweetmeats in very small quantities. (3) For drink, use carbonated water (several are specified) which contain carbonate of lime. Only eat at meal time, thrice daily (7 in the morning, noon, and 7 o'clock in the evening). Drink a glass of mineral water half an hour before each of the three meals. (4) As regards remedies if the digestive organs are in order, give with each meal:

℞ Calcis carbonitis, } .....āā 0.40 gramme;
Calcis phosphatis, }
Sodii chloridi. .....0.35 gramme.
M. For one capsule.

If the gastric hydrochloric acid is notably deficient the chloride of calcium (2.50 to 5 grammes) should be taken with each meal in addition. This may be given in distilled water. For constipation, calcined magnesia will suffice, one gramme after each meal, and the use of sodium chloride is continued. Good results from this method have been reported. While it overcomes the evils of overfeeding and excess of fats, it does not interfere with the other therapeutics by open air, rest, or balsamic inhalations.

The Physiological Effects of the Administration of Gelatin in Phthisical Patients.—Albert Robin and Maurice Binet (*Bulletin général de thérapeutique*, April 23, 1906) have studied the action of gelatin used as a food, especially in pulmonary tuberculosis, and have found it a valuable therapeutical dietetic adjuvant. Admitting that it cannot replace the albuminoids of the food, and that it is in great part destroyed in the organism and therefore cannot aid in building up the tissues, yet it is precisely its hydrolysing aptitude and its facility for reduction and oxidation that enables it to exert a protecting influence over the albuminoid constituents of the organs and tissues. It also diminishes the loss of hydrocarbons, and according to Vort's observations, acts as an accessory food, enabling the organism to function normally with a reduced ration of albuminoids, a veritable *aliment d'épargne*. Without analyzing the clinical notes of the six cases reported, or the table showing its influence upon the respiratory exchanges, the following summary may be given of its action: Gelatin in dose of twenty grammes daily diminishes quite regularly the respiratory exchanges, and therefore exercises in phthisical patients a valuable conservative action which deserves to be utilized in dietetics. This sparing action is only manifested on the condition that the substance is taken regularly, and that it is well tolerated by the system in the quantity just mentioned, not causing digestive troubles. The patient also should not be subject to hæmoptysis. The individual taking the gelatin should not have too large a ration of raw meat, at the same time, for fear of reducing the restrictive action of the former upon the respiratory exchanges. On the contrary, a ration of one hundred to one hundred and fifty grammes at the most produces attenuation of these exchanges, and in consequence the sparing action of the gelatin continues to be manifested and even may be in a slight measure enhanced. Administered in the form of commercial gelatin, no matter how varied the flavoring, the patient sooner or later gets tired of the insipid taste. In such cases the ordinary form may be substituted by gelatinous articles of food, such as broth made from tendons or from bones cooked for several hours; some vegetables may be included, or gelatin may be added to soup. This may be taken hot or allowed to cool and eaten as a jelly. Gelatinous meats, such as calves head, calf's, sheep's, or pig's feet, fruit jellies (especially of apple), also may add in making up the twenty or thirty grammes which is considered the necessary daily allowance.

Facial Neuralgia.—W. H. Wynn, in the *Journal of Tropical Medicine*, recommends:

℞ Butyl chloral, ... grs. iii to v;
Tinct. gelsemii, ... m. v to x;
Glycerini, ... m. xxx;
Aq. anethi., ... ad ℥ss.
S. For one dose. To be repeated at required intervals.

Urticaria.—The following is recommended for itching:

℞ Acid. thymic., ... grs. xv;
Acid. carbol., ... grs. xxx;
Menthol, ... grs. iv;
Eau de Cologne, } ..... āā ʒiiiss.
Spirit. camphor., }

Le Progrès médical.

Glycerin Milk:

℞ Lanolin, ... 1 drachm;
Castile soap, ... 3 grains;
Glycerin, ... 10 drachms;
Tincture of benzoin, ... 12 drops.
Water, a sufficient quantity.

Dissolve the soap in 2 drachms of water; triturate this with the lanolin, then add 10 drachms of lukewarm water, the glycerin and, lastly, the tincture of benzoin.—*American Druggist*, July 9, 1906.

On Violet Vision.—Hilbert, in *Centralblatt für Augenheilkunde*, reports a case of violet vision, the sixth of its kind, which he observed in a neurasthenic patient, fifty years of age. The patient suffered from an acute attack of influenza, on the fourth day of which the disturbance occurred, lasting for about thirty-six hours, when it gradually disappeared. There are several explanations given for the ætiology, but the author is of the opinion that it is due to a kind of autointoxication in the central nervous system, and does not result from peripheral origin.

The Treatment of Chlorosis.—Dr. Stanley, in the *Birmingham Medical Review* (through the *Postgraduate*), says: Those cases of chlorosis in which the blood value is low, where not only the hæmoglobin, but the red blood corpuscles are deficient, may not respond to the average treatment. They are the cases in which rest in bed is absolutely necessary. The persalts of iron appear to act more rapidly, especially in combination with arsenic. The addition of a little strychnine is also advantageous. Arsenic seems especially valuable in these cases. Some chlorotic cases are intractable to the more usual methods, and it may be necessary to have recourse to hypodermic injections of arsenic. The ordinary liq. Fowleri (sterile) may be used, but the following is less expensive:

℞ Sodii arsenatis, ... 2 grains;
Ferri et ammonii citratis, ... 16 grains;
Aq. destillatæ, ... 440 minims.
S. Five to ten minims for subcutaneous injection.

Dissolve the sod. arsen. and the ferri ammon. cit. in about 15 c.c. of dist. water in a test tube, and when dissolved put into a ounce stoppered bottle, previously sterilized. This solution contains five per cent. of sod. arsen. and four per cent. of ferri et ammon. cit. At the end of a week or ten days the ordinary methods may be tried.

Treatment of Leucoplasia, or White Patches of Mucous Membranes.—At the Lisbon Congress, Millian presented a report on "Leucoplasia," which he regards as a symptom rather than a disease, and includes under this title all white patches of mucous membranes of a persistent character (*Le Bulletin médical*, May 5, 1906). This lesion especially selects the region of the tongue and the mouth for its manifestations, but may appear upon any mucous surface. It may be smooth, or attended by the development of tubercles, papules, erosions, ulcerations, or sclerosis. These may be primitive or secondary. The former may attend congenital, symmetrical keratosis, papilloma, and squamous epithelioma. The secondary manifestations are met with also in congenital, symmetrical keratosis, and in lichen planus, erythematous lupus, hydroa, in tobacco users and glassblowers, in dyspepsia (Brocq), and in syphilis (both primary or tertiary). He doubts the existence of so called idiopathic leucoplasia, which he regards as identical with syphilis. In at least eighty per cent. of the cases this diagnosis can be confirmed by the history. In rare instances the lesion from the beginning is epitheliomatous; there are also cases in which the disturbance in the growth of the horny layer by the intrusion of epidermic cells, initiates the morbid process which terminates in malignancy. As regards the treatment of leucoplasia, after eliminating from consideration all the other affections presenting this lesion (epithelioma, lichen planus, hydroa, etc.), which have their own appropriate therapeutics, there is left a group which is syphilitic, either acknowledged or suspected. The general treatment, therefore, will be antisyphilitic. Potassium iodide, however, is of no use; mercury in some form is the efficient remedy. The treatment must extend over many months, as the disease is very chronic. At the least, a six months' course is required, and this may be kept up for two or three years in order to prevent relapses. Gray oil and calomel are the only forms of mercury which permit a sufficiently long administration, but their effects should be very closely watched for the first appearance of mercurialism. At the least sign of intoxication, the insoluble salts must be discontinued and soluble forms substituted, so as not to lose the advantage of the continued treatment. These remedies are given subcutaneously. At the end of three months the patient is allowed to rest for four weeks, and then another series of injections is begun. By this means the ulcerations are healed, the deep lesions (sclerosis and hypertrophy of the tongue, etc.) become more superficial, and the tongue more supple. The lesions diminish in extent, but some sclerotic patches may still persist, which the antisyphilitic treatment is unable to remove. In such cases the question of surgical intervention may be considered. The thermocautery may be applied, as advised by Gaucher to the patches, or they may be dissected off with the bistoury, as suggested by Le Denta. In the latter case the entire thickness of the mucosa should be removed, or the patch may be reproduced. In ordinary cases, the only local treatment required is protection from irritants, such as strong dentifrices or caustic applications. The mouth and teeth must be kept clean by gargles and the use of the tooth brush. Alcohol and tobacco in all forms are strictly forbidden.

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INTERSTATE RECIPROCITY IN LICENSING.

Certain resolutions recently adopted by the Illinois State Board of Health, on which we commented in our issue for July 7th, are very satisfactorily defended by the board's secretary, Dr. James A. Egan, in a communication which we printed on page 88 in last week's issue. In the light of what Dr. Egan says, there cannot now be a shadow of doubt that the board of which he is such an efficient official is determined to maintain the strong and just positions that it has always taken with regard to State examining and licensing. In addition to the Illinois board's great services in distributing for the use of physicians information not otherwise readily obtainable concerning educational and legal requirements, it has constantly stood for the best possible administration of the laws under which it has acted, and it has always had the respect and admiration of the medical profession of the United States.

The general subject of interstate reciprocity was lately handled elsewhere, and in a masterly manner, by Dr. Egan, in a communication entitled Facts and Fallacies concerning Interstate Reciprocity in Medical Licenses, read by invitation before the Illinois State Medical Society on May 17th of the present year. The dream of national licensing, the issue of licenses by the general government, had first to be considered by Dr. Egan, for, utterly baseless as it is, it continually crops up among the visionaries who let themselves loose at medical meetings and in the journals. Dr. Egan pictured the Chimæra admirably when he said: "The United States government has no more to do with the regulation of the practice of medicine in a State of the Union—a regulation which leaves the field open to all who possess the prescribed qualifications—than it has to do with the regulation of the form of services in the church in which the Illinois State Medical Society is now holding its meeting."

And there is nowhere any power to force uniformity upon the States. The same is true of the Provinces of Canada, in which country, as Dr. Egan reminds us, a license issued in one Province does not entitle the holder to practise in another, and one issued in the United Kingdom is recognized in but a few of the Provinces, and then only under special conditions. Nothing but the voluntary action of our States and of the Canadian Provinces individually can further the progress of reciprocity, but, we are glad to say, it is progressing and must, we believe, continue to do so.

The delusions that the laws interfere with consultations between physicians of different States, that a person taken sick out of his own State cannot have the services of his own family physician, and that emergency practice by border physicians is prevented are exposed and demolished by Dr. Egan. One of these delusions was put forward by the president of the American Medical Association, Dr. Mayo, at the recent Boston meeting of that organization, and Dr. Egan has done well to mention the fact and deplore it.

MARRIAGES BETWEEN RICH AND POOR.

Marriages are constantly occurring in the United States between young men of great wealth and young women engaged in earning their own living; but, despite the familiarity of the phenomenon, no such marriage ever fails to cause apparently astonished comment and, above all, copious newspaper gossip. In Europe, where those who have inherited wealth are taught and really believe that they are of superior clay to the class of inherited poverty, and the latter assent to the teaching, such alliances may well cause a slight shock, diluted perhaps with some pleasure at the condescension of the man. In our country, however, where one family can hardly have the *pas* of another by a single century, astonishment is ridiculous and out of place. Few of our richest men are idle, and their work differs only in magnitude from that of the poor.

If we grant that a century of idleness can enervate a family, a marriage into the "working classes" can only be beneficial. Stock must be enriched from time to time from near the soil. Advocates of highly restricted interbreeding are fond of pointing to the race horse as a superior

product of their principles. A race horse, however, is a poor creature from the point of view of usefulness; he is a beautiful specialized bundle of nerves and requires more coddling than a healthy human baby.

Interbreeding does not work out well in the human species; the haughty Austrian aristocracy, which considers the nobility of France and England as upstarts, and ostracizes any member who marries into a family much younger than the Cæsars, is not as a class strong and healthy. It is from Austria in great measure that our circuses secure their giants and midgets, a fair proportion of whom are illegitimate, and many other of the various "freaks," objects of interest certainly, but hardly of pride. Intellectually, we do not think that the statesmen of Austria, Spain, and Russia are the equals of those of France and the United States, while the English commoners have given a remarkable account of themselves. We should be disposed to applaud the good sense of any rich young American who married a beautiful girl of poor but decent antecedents, in spite of the fact that such marriages depend upon unreasoning sexual attraction, like the great majority of marriages. As it is, we can only note the care Nature takes of the race, however heedless she may be of the individual.

RECENT EXPERIMENTS IN SYPHILITIC INOCULATION.

The inoculability of syphilis in its various stages is a matter concerning which there is still a wide field for investigation. E. Hoffmann (*Deutsche medizinische Wochenschrift*, March 29th) reports the results of experiments made upon monkeys by inoculating them with the blood of patients suffering with recent syphilitic infection who had not yet been subjected to any treatment. The investigation was conducted under rigid conditions, so that the results cannot be questioned. Out of a total of four inoculations, made under aseptic precautions, at the clinic of Professor M. E. Leser, of Berlin, two were positive in their results. The indurated lesions produced by the inoculations contained the *Spirochæta pallida*, thus definitely establishing their syphilitic character.

An interesting series of experiments, made by Professor A. Neisser, in collaboration with Siebert and Schlucht, upon the inoculability of tertiary lesions is reported in the same issue of the *Wochenschrift* (*Bulletin médical*, April 7th). Five monkeys out of seventeen, inoculated with fragments of tertiary lesions, upon the eyebrow or penis, had a typical initial sclerosis. The unsuccessful inoculations, it was noticed, were those in which the material was taken either from a degenerating gumma or from a suppurating lesion, in which apparently the infectious germs were relatively few in number, as compared with the others. In another series of experiments, made with material obtained from the body of a child which had perished with inherited syphilis, all the inoculations (material taken from the bone marrow, testicle, lung, suprarenal capsules, kidneys, liver, and spleen) were followed by the appearance of an initial sclerotic lesion which was absolutely characteristic. Inoculation was also successful when made with blood taken, five hours after death, from the heart cavities of a young girl suffering with inherited syphilis. An interesting and important fact was also established by the same investigators, who found that the nasal mucus of a baby suffering with severe hereditary syphilis was virulent, and that its inoculation produced a typical chancre.

HAY FEVER.

This popular collective term stands for a number of annoying affections of the air passages concerning which the records of our knowledge are scattered. A recent German work on the subject[1] seems likely to prove of value by the author's collation of the important part of the literature of these diseases. He reminds us that Bostock, in 1819, published a small pamphlet about hay fever, from which he suffered, in which he cites Heberden, who died in 1801, as having first described the disease. In 1828 there followed a second publication of Bostock's, in which the author says that "an idea has very generally prevailed that hay fever is produced by the effluvium from new hay." Since that time many essays have appeared on this peculiar disease, in America as well as in Europe. Wolff-Eisner cites one hundred and ninety-two authors, with over four hundred articles.

Hay fever appears especially at the time of cutting hay. It is not contagious, but seems to be hereditary. According to Sir Morell Mackenzie forty per cent., according to Beard thirty-three per cent., and according to Wyman twenty per cent. of all the sufferers have inherited it. The male sex is more inclined to become affected with it than the female. As regards race, nothing definite can be said, but it seems that the inhabitants of cities are more liable to be attacked than people living in the country. The period of life between ten and twenty years furnishes the largest

[1] *Das Heufieber, sein Wesen und seine Behandlung.* Von Dr. Alfred Wolff-Eisner, Munich: J. F. Lehmann, 1906.

proportion of cases, while after the age of forty new victims will be found very seldom. But once a sufferer, always a sufferer, although hay fever has no influence upon the limit of life. Furthermore, it seems as if hay fever yearly affected an increasing number of patients.

About its ætiology many theories exist; the generally accepted one has been, since the time of Elliotson (1832), the pollen theory. Certain kinds of grasses are said to be its cause, in North America especially *Ambrosia Artemisiæfolia*, while in Europe it is *Anthoxanthum odoratum* or else rye. Lübbert and Dunbar give a table enumerating one hundred and forty-three different plants the pollen of which is said to be concerned in producing hay fever. Bostock himself thought the heat of summer—Smith (1868) the cold—to be the ætiological factor. Guéneau de Mussy (1868) held that its basis was the uric acid diathesis; Helmholtz (1869), also a sufferer, spoke of its bacteriological ætiology; Beard (1876) asserted that hay fever was a neuropathic disease; Macdonald (1890) treated it as a vasomotor coryza; Sajous (1893) explains it as a suddenly appearing affection of the vasocontractor centres of respiration; Wyman (1872) and Thorowgood (1881) attribute it to the emanations from certain animals, such as rabbits, calves, and cats.

So little was for a length of time known about hay fever that it was only natural that the sufferer should not consult a physician, for the doctor might not know so much about the disease as the patient himself. But lately this has changed. We have acquired more knowledge about hay fever, and we have at our command both medicinal and operative measures which often seem to be effective.

Hay fever, which is not a dangerous disease, consists of a series of catarrhal inflammations, very disagreeable to the patient. It usually begins with a sensation of heat and swelling in the eyes, with itching and pain, a severe inflammation of the conjunctiva, with a profuse secretion of tears. The inflammation next attacks the Schneiderian membrane, and is accompanied by sneezing. Headaches set in, with disturbances of the respiratory tract, pain in the thorax, and sometimes asthma, the voice very often becoming hoarse. At the same time with these local disturbances there appear general malaise, a tired feeling, and impairment of appetite and sleep. Very often the pulse is accelerated, and slight fever is apparent. This is a picture of a severe attack which may set in at any time from May to August, recurring every year.

The treatment varies according to the ætiological explanation: Local bleeding, aperients, quinine, tonics, iron, opium, mercury, digitalis, cocaine, menthol, ammonia vapors, sprays, etc., may be employed, besides special treatment for conjunctivitis, rhinitis, bronchitis, etc. But it is doubtful if any lasting results are obtained with these remedies. Traveling, especially by sea voyages and change of air, to mountain or sea air, has been resorted to with advantage as regards a particular attack.

PAINFUL HYPERÆSTHESIA AFTER TYPHOID FEVER.

Rénon and Tixier have recently studied anew the subject of this rare complication and published the histories of two cases (*Bulletins et mémoires de la Société médicale des hôpitaux de Paris*, June 28th). The affection is characterized by both hyperæsthesia and spontaneous pain occupying chiefly the dorsal aspect of the toes. This localization is so constant that Guny, who wrote a graduation thesis on the subject five or six years ago, called the trouble *la douleur des orteils dans la convalescence de la fièvre typhoïde;* but the pain and hyperæsthesia are not strictly limited to the toes, though they do seem to affect the limbs exclusively. Both the pain and the hyperæsthesia are of great severity, and they seem to be but little if at all ameliorated by either systemic or topical medication. They are of comparatively short duration, however, having lasted less than a fortnight in each of the two cases reported by Rénon and Tixier.

Their first case was that of a man, twenty years old, in whom, on the fifty-second day from the beginning of the fever, there was an attack of severe pain in the toes and the dorsum of the foot. The pain, which is described as atrocious, was continuous, but there were cramplike paroxysms. The hyperæsthesia was of such intensity that the mere weight of the bedclothes caused the patient to cry out. There was no disturbance of the reflexes, and there was no redness or swelling. The hyperæsthesia extended to the anterior aspect of the lower third of the leg. Their second patient was a woman, thirty-seven years old, who was seized with rather severe pains in the hands and feet on the nineteenth day, when her general condition was very favorable. The pain affected particularly the region of the metacarpophalangeal joints. It rapidly increased in severity and was accompanied with hyperæsthesia. In this case, too, there was no derangement of the reflexes. In both cases the pain was aggravated by movements.

The authors imply that the manifestations were bilateral in their cases, and to this feature they attribute some diagnostic significance. They can only speculate as to the nature and causes of the trouble, suggesting neuralgia or slight inflammation of the terminal fibrils of the cutaneous nerves due to toxines produced by Eberth's bacillus.

THE PURE FOOD AND DRUG LAW.

Coming so close upon the enactment of the government meat inspection bill, the "act for preventing the manufacture, sale, or transportation of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines, and liquors, and for regulating traffic therein, and for other purposes," recently passed by Congress, shows a praiseworthy purpose on the part of the national government to accomplish as much as possible in the way of putting a stop to very objectionable and dangerous sophistication and substitution in the production of food and drugs. Doubtless the law will prove of great benefit. Incidentally, it is worthy of remark that it makes the *Pharmacopœia of the United States* and the *National Formulary* standards for testing the products so far as they go. Those books are not government publications, but such recognition of them in Congressional enactments goes far toward giving them the status of authoritative government issue.

THE PERILS OF THE AROMATIC ELIXIR.

The simple elixir, or aromatic elixir, as it is now denominated in the pharmacopœia, is a preparation that probably most of our brethren look upon as an innocent vehicle with some approach to palatability, and it is one that many of them must prescribe freely under the influence of that impression. But let us consider. Our readers ought to know that we have no particular sympathy with the extreme tenets of the Woman's Christian Temperance Union. Nevertheless, we dislike to contemplate the probability that physicians often prescribe unwittingly a considerable amount of alcohol when they order the aromatic elixir of the pharmacopœia, and to reflect that it is particularly for children that the elixir is prescribed. A pharmaceutical friend reminds us that the elixir contains almost as large a percentage of alcohol as is to be found in brandy or whiskey. Inasmuch as the elixir is largely ordered as a vehicle for a sedative, it is easy to perceive that its own action, by virtue of the alcohol contained in it, may readily overcome that of the sedative and prove positively injurious on that account.

But that is not all. At the recent annual meeting of the Pennsylvania Pharmaceutical Association Mr. E. G. Heffner, of Lock Haven, read a paper in which he pointed out another danger incident to the indiscriminate prescribing of the elixir as a vehicle for the bromides, in which character, we cannot doubt, it is often ordered, and very frequently in mixtures containing chloral hydrate. Mixtures of a bromide and chloral hydrate, says Mr. Heffner, are prone to undergo decomposition in the presence of an alcoholic preparation, the result being the formation of the dangerous body known as chloral alcoholate. This is a liquid of such a specific gravity that it floats on the top of the mixture, and, unless a "shake" label is placed on the bottle, the patient may get the whole of the chloral in the first dose or two. It is best to order chloral to be dissolved in a simple aromatic water, in syrup of orange with orange flower water, or in aqueous solution to be diluted with milk.

AROMATICS TO DISGUISE CASTOR OIL.

We all know the efficiency of sassafras (in the preparation popularly known as "sarsaparilla") in masking the taste of castor oil, especially when it is used in conjunction with an effervescent water. Probably a number of other aromatics may be equally useful for the purpose. The *Semaine médicale* for June 27th recounts that a Dr. Foch, of Grenade-sur-Garonne, has found anisette serviceable. He pours a small quantity of the liqueur into a claret glass, taking care that the edges of the glass are well moistened with it. Then the dose of castor oil, slightly warmed to make it thinner and more readily swallowed, is poured into the glass. He declares that the penetrating taste and odor of the cordial so mask those of the repulsive oil that the patient hardly tastes it when he swallows it.

THE WAITER'S NAPKIN.

Highly suggestive of the consequences that may follow gross uncleanliness is the napkin which the restaurant waiter puts to multifarious uses. Not content with using the napkin to wipe bottles and table articles, the waiter too often employs it to wipe his own hands and face and even to blow his nose on. Such illicit employment of the napkin is not only repulsive; it is positively dangerous. We doubt, however, if the Berlin professor who is said to have started a crusade against the napkin will be able to accomplish its abolition.

News Items.

NEW YORK CITY AND STATE.

The Albany Medical College.—The following instructors have been added to the faculty of this college: Dr. John Fletcher Robinson and Dr. Frank George Schaible, bacteriology and pathology; Dr. Arthur Fenwick Holding, radiography; Dr. Harry Rulison, clinical microscopy; Dr. William Atwood Larkin, chemistry.

The Medical Society of the County of Wyoming, N. Y., held a meeting at Castile, on Tuesday, July 10th. The society was entertained at the sanitarium by Dr. Mary T. Greene. The programme for the meeting included the following papers: Ectopic Gestation, by Dr. C. C. Frederick, of Buffalo, and Movable Kidney, by Dr. E. J. Meyer, of Buffalo. Dr. L. M. Andrews, of Warsaw, was elected to membership.

The Medical Society of the County of Jefferson, N. Y., held its quarterly meeting at Alexandria Bay, on Thursday, July 12th. The programme for the meeting included a paper on Debatable Questions in the Diagnosis and Treatment of Renal Diseases, by Dr. Egbert LeFevre, of New York. Dr. E. E. Eddy, of Redwood, brought in a patient upon whom Dr. LeFevre gave a clinical demonstration, which was discussed by Dr. J. A. Barnette and Dr. G. D. Gregor, of Watertown. Dr. LeFevre was elected an honorary member of the society. A banquet was held at the Thousand Island House and the afternoon was spent in cruising among the islands.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending July 14, 1906:

	July 14.		July 7.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	51	11	45	10
Smallpox	2	..	..	..
Varicella	31	..	28	..
Measles	293	15	370	19
Scarlet fever	86	10	103	6
Whooping cough	45	10	36	4
Diphtheria	224	36	220	27
Tuberculosis pulmonalis	392	163	343	161
Cerebrospinal meningitis	7	12	27	16
Totals	1,131	257	1,172	243

PHILADELPHIA AND THE MIDDLE STATES.

Marine Hospital in Pittsburgh.—After many years of delay, a marine hospital will be erected in Pittsburgh, in the grounds of the Allegheny Arsenal.

Second Street Market.—The city has reconsidered the condemnation of the Second Street markets on the recommendation of Dr. Abbot, who reports that the meats and produce can be kept clean if the streets are properly swept

Pittsburgh's Water Supply.—The city government will issue a circular warning the people not to use any water in an unboiled state on account of the impure condition of the water supplied by the city and the various companies. Typhoid fever is on the increase.

Dr. Willard's Illness.—We are glad to report that Dr. DeForest Willard is improving, after an illness which has lasted over two months. The pneumonia was complicated with an abscess of the lung, which required evacuation. Dr. Willard is now able to be moved into a chair.

Fighting the Mosquito.—Dr. Samuel G. Dixon, Commissioner of Health of Pennsylvania, has been for some time exploring the State for the breeding places of the mosquito, and has now issued orders for the drainage or oiling of all such collections of water.

Schuylkill Water Shed Pollution.—The streams which flow into the Schuylkill are being inspected, by order of the Department of Health of Pennsylvania, to reduce the amount of pollution which flows into these streams from their respective water sheds.

Consumptive Insane at Norristown.—The tent system will be used at the asylum for the treatment of the consumptive insane. The former system was to place these patients in cottages on the farm of the asylum. Dr. George McCafferty is in charge since the death of Dr. Richardson.

Suggestions from Wernersville Asylum for Philadelphia Public Hospital for Consumptives.—A committee of councils and Dr. Coplin, with his assistants, have visited the asylum at Wernersville hoping to obtain some ideas for the construction of the new proposed building for Philadelphia's consumptive poor.

Result of the Inspection of Wernersville.—The members of councils who accompanied Director Coplin on his trip to South Mountain were so pleased with the State institution that they have promised their aid in securing such a hospital for the insane in Philadelphia.

Lehigh Valley Medical Association.—This society held its annual meeting at Easton, beginning July 11th. Dr. C. J. Kistler, the president, delivered the annual address, and Dr. Helen C. Putnam, of Providence, R. I., read an address on Biology in Public Schools as an Aid to Morals and Prosperity.

Medicochirurgical College Improvement.—Bids are out for the construction of a maternity and children's building on the site now occupied by those departments in the houses on the east side of Eighteenth Street above Cherry Street. It will cover an area of 110 by 40 feet and will be so built that additions may be constructed later.

The New Jersey State Board of Medical Examiners announces the names of fifty-two successful candidates for a State medical license, examined at Trenton, June 19th and 20th. At the annual meeting of the board held at Trenton on July 5th, the following officers were elected: President, Dr. W. H. Shipp, of Bordentown; treasurer, Dr. C. A. Groves, of East Orange; secretary, Dr. John W. Bennett, of Long Branch.

Henry Phipps' Institute Report.—This is the second annual report of the Henry Phipps' Institute for the Study, Treatment, and Prevention of Tuberculosis. It outlines the nature of the work which has been carried on and brings forth some new data. The principal points dwelt upon are the relations of the social state, height, color, and previous illnesses to tuberculosis. Maragliano's serum has not proved successful in the hands of the clinicians at the institute. There are included in the report some articles upon this subject by members of the staff.

Emergency Hospital and Sanitary Inspectors in Pittsburgh.—The city has long felt the need of a hospital to which accidents or emergency cases could be sent. Now a movement is on foot to create such a place, or a number of them, so that any hurry up case can be taken care of without the red tape at present necessary. The sanitary inspectors of the city are overworked in regard to the amount of work which they are required to do, and their authority and remuneration are below standard. Councils will have to increase the staff and divide the city into districts, which will facilitate the work.

The Health of Philadelphia.—During the week ending July 7th, the following cases of transmissible diseases were reported to the Bureau of Health:

	Cases.	Deaths.
Typhoid fever	72	12
Scarlet fever	16	1
Chickenpox	10	0
Diphtheria	41	2
Cerebrospinal meningitis	2	0
Measles	48	4
Whooping cough	62	24
Tuberculosis of the lungs	74	54
Pneumonia	20	22
Puerperal fever	2	2
Tetanus	1	1
Mumps	3	0
Cancer	16	31

The following deaths were also reported from transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 10; dysentery, 1; cholera morbus, 1; diarrhœa and enteritis, under two years of age, 148. The infant mortality under one year of age was 242; between one and two years of age, 35. The entire mortality amounted to 651, corresponding to an annual mortality of 23.04, in 1,000 of population in an estimated population of 1,469,126. There were 35 still births, 23 males and 12 females. Aside from 2.56 inches of rain no unusual meteorological phenomena were experienced.

BOSTON AND NEW ENGLAND.

The Mortality of Connecticut.—According to the State Board of Health's *Monthly Bulletin* for June, 1906, the total number of deaths during the month was 1,238. This was 166 less than in May, and 51 less than in June of last year, and 157 more than the average number of deaths during June for the five years preceding. The death rate was 16.1 for the large towns, for the small towns 11.8, and for the whole

State 15.1. The deaths reported from infectious diseases were 186, being 15.0 per cent. of the total mortality.

Smallpox (?) on an Ocean Liner.—Traces of disease which might develop into smallpox were discovered on one of the steerage passengers and a member of the crew of White Star liner *Cymric*, when that vessel arrived at Boston from Liverpool, on July 15. In consequence, the steamship was held at quarantine while vaccinations were made on steerage passengers who had not undergone the treatment recently, and other precautions were taken against the possible spread of the disease. The two who were ill were put in quarantine for a further development of their ailment.

BALTIMORE AND THE SOUTH.

The Kentucky Midland Medical Society held its forty-second meeting at Cynthiana, on Thursday, July 12th. At the morning session diagnosis and treatment of typhoid fever and a general discussion of the disease was opened by Dr. Josephus Martin, of Cynthiana. At the afternoon session papers were read by Dr. J. E. Wells, Cynthiana; Dr. W. C. Ussery, Paris; Dr. D. B. Knox, Georgetown; and Dr. J. R. Ely, Frankfort.

The Association of Surgeons of the Seaboard Air Line Railroad held its annual meeting at Savannah, Georgia, on Friday and Saturday, July 13th and 14th. The programme for the meeting included the following papers: Traumatic Pneumonia from Railway Accidents, by Dr. J. H. Miller; Fractures of the Leg, by Dr. W. A. Monroe; The Treatment of Fractures of the Skull, Trephining and Results, by Dr. W. E. Norton. The election of officers resulted as follows: President, Dr. W. A. Monroe, Sanford, N. C.; vice-presidents, Dr. J. G. Wallace, Dade City, Fla.; Dr. H. M. Wilder, Charlotte, N. C., and Dr. E. H. Richardson, Atlanta; secretary and treasurer, Dr. J. W. Palmer, Ailey, Ga. (reelected); new member of Executive Committee, Dr. J. H. Miller, Cross Hill, S. C.

A Proposed New Medical Society for the Southwest.—Formal steps were to be taken on Monday, July 16th, at Kansas City, to organize the Southwestern Medical Society, to be composed of the State societies of Missouri, Kansas, Oklahoma, Indian Territory, Arkansas and Texas. At the banquet of the Academy of Medicine, held in Kansas City last spring, the presidents of the State societies of the six different States were all in attendance. Dr. Jabez N. Jackson, of Kansas City, was toastmaster, and suggested the formation of a society for Missouri, Kansas, Indian Territory, Oklahoma, Arkansas, and Texas. The idea took at once. The six presidents carried the suggestion to their different societies, and at the annual meetings of the latter this year, each voted to join the movement. After a conference among the projectors it was decided to ask each president to name five members as a committee from his State to meet in Kansas City to formally organize the new society. These thirty representatives were to be there on Monday, July 16th, and constitute a general committee, with full power to set things into motion.

The Mortality of Baltimore.—The report of the health department for the week ending July 14, 1906, shows a total of 217 deaths, as compared with 274 the corresponding week of last year, 249 in 1904, and 251 in 1903. The annual death rate in 1,000 of population was: Whole, 19.66; white, 17.26; colored, 32.50. The principal causes of death were:

Typhoid fever	3	Diarrhœa under 2 years of age	57
Scarlet fever	1	Bright's disease	12
Diphtheria	1	Congenital debility	16
Consumption	26	Lack of care	5
Cancer	8	Old age	3
Apoplexy	4	Suicide	1
Organic heart diseases	15	Accidents, etc.	18
Pneumonia	4		

The nativity of the decedents was: United States, white, 129; foreign, 29; colored, 51; unknown, 8. The following number of cases of infectious diseases were reported, as compared with the corresponding week of last year:

	1905.	1906.		1905.	1906.
Diphtheria	5	9	Measles	20	5
Pseudomembranous croup	1	..	Mumps	1	1
Scarlet fever	6	5	Whooping cough	1	4
Typhoid fever	8	18	Chickenpox	1	4
			Consumption	10	18

CHICAGO AND THE WEST.

Personal.—Dr. James L. Greene, for five years superintendent of the Nebraska Hospital for the Insane, at Lincoln, on July 9th tendered his resignation to Governor Mickey, to take effect July 16th. Dr. Greene has accepted the tender of the superintendency of the Illinois Hospital for the Insane, at Kankakee.

The Hempstead Academy of Medicine, at Portsmouth, Ohio.—At the last meeting of this academy, held on Monday, July 9th, Dr. F. M. Edwards read a paper on The Use of Chloroform in Labor. The paper was followed by a spirited discussion, there being but one opinion as to the usefulness of the drug, administered at the proper time. The meetings of the academy are now held in the new Carnegie library and the holding of an extra meeting, monthly, in addition to the regular meetings, for the presentation of clinical cases and specimens is to be tried. A general catalogue of the academy's library is being compiled and it is intended to keep the collection up to date by the addition of new literature.

The Southwestern Minnesota Medical Society.—The thirty-seventh semiannual meeting of this society was held on July 12th, at Luverne. An elaborate "spread" was served by local physicians. Among those in attendance were Dr. Tomlinson, of St. Peter, president of the State Medical Society, and Dr. Thomas McDavitt, of St. Paul, secretary of the State society. The following papers were presented: Precautions in Treating Cases of Obstetrics, by Dr. C. O. Wright, Luverne, president of the society; Obstetric Practice in the Country, by Dr. W. D. Beadie, Windom; Postpartum Hæmorrhage, by Dr. L. A. Dickman, Lismore; The Value of Prayer, by Dr. Lou M. Gerber, Jasper; The First Ovariotomy Performed in Rock County, by Dr. A. McNab, Rock Rapids; Orchitis as a Complication of Mumps, by Dr. Thomas Lowe, Pipestone; The Physician and His Drugs, by Dr. George D. Rice, Pipestone; Acetozone in Typhoid Fever, by Dr. Ray Humiston, Worthington.

St. Bernard's Annex for Outdoor Treatment of Tuberculosis, at Council Bluffs, Iowa.—The middle west and particularly Iowa, with its rolling prairies, continually swept by fresh winds, offers unexceptional advantages for the universally approved outdoor treatment of tuberculosis, and one of the most favored places is Mount St. Bernard's, under the care of the Sisters of Mercy, situated on the top of the high range of hills surrounding the city of Council Bluffs. The sanitary arrangements of the camp are perfect, but the camp itself and the surrounding grounds are kept as near natural as possible—carrying out the idea of having the patients live as close to nature as is compatible with sanitary science. The treatment at the camp consists of life in the open air or tent, summer and winter, experience having shown that there is no liability of taking cold, the one great bugbear of persons unaccustomed to camp life. A carefully selected diet, adapted to individuals, an abundance of fresh milk and eggs at intervals between regular meals, regulated exercise and a constant medical supervision over each individual case, for it must be remembered that carrying out details is one of the essentials to success. Under these conditions the results follow quickly, night sweats cease almost instantly, sleeplessness is overcome, appetite and nutrition improve, cough decreases, respiration and pulse diminish and temperature falls, and a substantial gain in weight soon follows. These results occur even in far advanced cases, and while they have only been temporary in some cases, yet it holds out the only reasonable method of cure. Patients soon appreciate and enjoy this outdoor life and often express regret at the thought of returning to indoor sleeping apartments. Physicians recommending patients should impress upon them the necessity of staying a sufficient length of time (at least six months) to get satisfactory results. Address, Mother Superior, Sisters of Mercy, Council Bluffs, Iowa.

GENERAL.

The Empress Marie Feodorovna Prizes.—A year or two ago the establishment of the Empress Marie Féodorovna prizes for military medical aid was announced in the *Journal of the Association of Military Surgeons*. In the forthcoming Red Cross convention of 1907, these prizes will be awarded for the first time, and it is hoped that American inventors will be in active competition. It is announced that the central committee of the American National Red Cross will receive and forward, at its own expense, the plans, models, etc., of competitors, provided they meet the approval of a subcommittee, which will be appointed to pass upon them. Any competitor who prefers, however, may forward his invention direct to the jury. Correspondence concerning this question is invited by the American National Red Cross, War Department, Washington, D. C.

Pith of Current Literature.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

July 12, 1906.

1. Therapeutical Effect of Sound Waves, or Mechanotherapeutics of the Ear, By CLARENCE JOHN BLAKE.
2. A Method for the Differential Staining of Blood Plates, By JAMES HOMER WRIGHT.
3. The Occurrence of Occult Hæmorrhages in Typhoid Fever, By WILDER TILESTON.
4. Sore Throat. Ætiology and Therapeutics, By EDMUND D. SPEAR.
5. A Case of Recurrent Spontaneous Gangrene of the Index Finger: Successive Amputation of the Phalanges; Abatement of the Process After Excision of a Portion of the Radial Nerve and Stretching of the Median, By E. A. CODMAN.
6. An Abdominal Injury, By C. A. ATWOOD.

1. Therapeutical Effect of Sound Waves, or Mechanotherapeutics of the Ear.—Blake says that application of sound waves to the ear for therapeutical purposes is the application of a form of massage commensurably proportionate to the delicacy of the sound transmitting structures of the middle ear and labyrinth. The prolonged use of tones of excessive amplitude and very low or very high pitch, whatever their beneficial mobilizing effect upon the sound transmitting apparatus of the middle ear may be, are open to the objection of their prejudicial effect upon the organ of perception. Mechanical reproductions of speech are open to the objection of their accentuation of overtones and their presentation of a distortion of a familiar sound picture, that of the normal voice. The natural voice concentrated upon the ear is, both in its range and its volume, as well as in the more general exercise afforded by its complexly compounded sound waves and the readiness with which it may be uniformly applied, the safest, and, in the end, the best form of sound source for phonomassage of the ear.

3. The Occurrence of Occult Hæmorrhages in Typhoid Fever.—Tileston has examined the stools in sixty-eight cases of typhoid fever by means of the guaiac and aloin tests for blood pigments. The technics he employed was essentially that of Boas. The results of his examinations were: Eighteen cases out of the sixty-eight gave positive tests at some time during the course of the disease. One of these was complicated with enteritis, to which the presence of blood was probably due; there remain seventeen, or twenty-five per cent., which showed the presence of occult blood. In all, 422 stools were examined, of which forty-two were positive, *i. e.*, ten per cent. A division into groups, according to the severity of the disease, gave the following results: Fifteen mild cases, three positive, twenty per cent. Thirty-nine moderately severe, ten positive, twenty-six per cent. Fourteen severe or fatal, five positive, thirty-six per cent. The conclusion the author draws from these examinations and the work of others, are: (1) Occult hæmorrhages may be detected by the guaiac and aloin tests in about twenty-five per cent. of all cases of typhoid fever. (2) The application of these tests is of little value as a means of foretelling gross hæmorrhages. (3) It is of very little value in diagnosis, owing to the inconstancy and comparatively late appearance of positive reactions. It seems probable that more complicated chemical methods would show a larger percentage of positive results, for the separation of the sloughs must always be attended by some hæmorrhage.

4. Sore Throat. Ætiology and Therapeutics.—Spear is a firm advocate of the theory to remove the adenoids and to sterilize the nasopharynx at the earliest possible moment. Whenever an acute inflammation of the throat is discovered the presence of a chronic affection of the same must be predicted. In eliciting the presence of the symptom of soreness of the throat one should ask the patient if there is soreness or pain upon swallowing, then by watching the act performed one may note if there is difficulty or slowness, or if the head is held in any favored position. The fauces should be examined under good illumination to determine to what extent, and upon which side, an acute process is situated. Feel along the sides of the neck for tender lymphatics and glands. Examine the nose and note its condition as regards swellings and secretions. In the majority of cases study of the character of the voice will determine the location of the more important lesions. Hoarseness indicates affection of parts below the pharynx. A nasal tone implies obstruction, and the type of tone varies with the location: deeper if postnasal, high pitched and feeble if nasal; in a monotone and repressed if there is extensive exudation and swelling, as in tonsillary abscess.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

July 14, 1906.

1. Introductory Address on Surgery, By Professor F. TRENDELENBURG.
2. The Treatment of Acute Insanity in a General Hospital, By DANIEL R. BROWER.
3. The Present Status of the Bedbug in the Transmission of Human Diseases, By ALEC. ARSÈNE GIRAULT.
4. Negri Bodies in Hydrophobia, By D. J. DAVIS.
5. The Staining and Examination of the Bacteria of the Eye by Simple Bacterial Methods. By EDGAR S. THOMSON.
6. History of the Mastoid Operation. Its Surgical Anatomy, etc., By FRANK ALLPORT.
7. Report of a Case of Brain Tumor, By C. F. NEW and J. A. MACDONALD.
8. Calcification of the Vas Deferens and the Seminal Vesicles, By S. GEORGE.
9. Relations of the Superior and Inferior Recti Muscles to Convergent Squint, By EDWARD JACKSON.
10. Development of the Urachus, By J. F. BINNIE.

2. The Treatment of Acute Insanity in a General Hospital.—Brower has treated for thirty years selected cases of acute insanity in general hospitals. He says that patients are admitted without any legal process just as other sick people are, and he believes that the results have been sufficiently satisfactory to urge this plan of treatment on the profession generally. The acute insanities that are especially amenable to general hospital treatment are the autotoxic and exhaustional cases, while the progressively degenerative forms should not be classed with these cases. Their proper resting place is the special hospital for the insane. The treatment he has used in acute insanity is familiarly known as the Weir Mitchell rest cure.

3. The Present Status of the Bedbug in the Transmission of Human Diseases.—Girault wishes to point out the present status of our knowledge regarding the carrying of disease germs by bedbugs, a question which should be of interest to all of us. The fleas, house flies, and mosquitoes carry and transmit certain dangerous diseases. Although the bedbug has been known for centuries and its literature comprises as high as five hundred odd articles, but very little, at present, is really known concerning its habits and life history. On the contrary, much has been conjectured. In addition to this, its host relations are entirely unknown. It is certain that blood comprises its only food, in spite of what has been stated to the contrary, but it is not decided whether it lives on the blood of man only, or also of the small mammals found associated with man, such as mice and rats. The experiments of the author seem to prove this question, as bedbugs were found feeding on dead mice. Vice versa, a closely related species, the fowlbug, which associates with pigeons and chickens, which were found to be very fond of human blood, readily attacked living mice. The author reviews the literature from which we learn that it seems as if the

bedbug could be the carrier of relapsing fever, leprosy, bubonic plague, anthrax, tuberculosis, even syphilis and typhoid.

4. **Negri Bodies in Hydrophobia.**—Davis states that concerning the Negri bodies in hydrophobia little of a definite character may be said. Negri, in his first paper in 1903, stated that he believed them to be protozoa, and probably the cause of the disease. This, of course, he could not demonstrate. The possibility of their being degeneration products has also been carefully considered. All that can be said at present is that they are different from any degeneration product or any morphological entity, normal or pathological, thus far known. They are specific for hydrophobia and, whether degeneration product or protozoa, are important as diagnostic structures.

5. **The Staining and Examination of the Bacteria of the Eye by Simple Practical Methods.**—Thompson describes the methods used in the laboratory of the Manhattan Eye, Ear, and Throat Hospital for staining of the bacteria of the eye. Film preparations from the fresh conjunctival discharge are of value not only in arriving at a correct diagnosis, but also in the study of the progress of the disease. Löffler's methylene blue is the stain generally used. Counterstaining is usually done with Wright's modification of Jenner's blood stain (eosinate and methylene blue), or Goldhorn's polychrome methylene blue. The most important germs are the gonococcus, Koch-Weeks bacillus, the diplococcus of meningitis, the Morax-Axenfeld bacillus, the Klebs-Löffler bacillus, the xerosis bacillus, stapholococcus, streptococcus, and the pneumococcus. Scrapings from a conjunctival or corneal ulcer may frequently give valuable information, especially in cases of suspected tuberculosis, which are stained for tubercle bacilli with cerebral fuchsin or methylene blue, or Unna's method may also be used.

8. **Calcification of the Vas Deferens and the Seminal Vesicles.**—George reports two cases of pathological changes in the seminal vesicles. They consisted in a certain form of calcification, not merely a retrogressive metamorphosis, but a calcification in connection with chronic inflammation. In the first case a long mass was found in the wall of the right seminal vesicle, while in the second case a calcification of the left vas deferens was the result of chronic inflammation, gonorrhœal deferentitis. From a clinical standpoint calcification of these organs has no special significance, yet in some cases rectal examination may reveal presence of such a mass, which may be easily mistaken for stones or neoplasms in the bladder.

9. **Relations of the Superior and Inferior Recti Muscles to Convergent Squint.**—Jackson describes the result in a case of a patient with convergent strabismus, upon whom an extended tenotomy was performed. The primary adductor and abductor, the internus and externus, tend to equilibrium with the eye directed forward. The secondary adductors (the superior and inferior recti) and the secondary abductors (the obliqui) tend to turn the eye even more strongly in or out. A rational operation to correct excessive convergence must tend to lessen the relative influence of the secondary adductors. The author refers to the description of his mode of operation, given in a previous paper.

MEDICAL RECORD.

July 14, 1906.

1. A New Method of Incision for Removal of the Breast, By CARL BECK.
2. The Contagiousness of Gumma, By CHARLES MALLORY WILLIAMS.
3. Carbon Dioxide Gas Retention as a Frequent Factor of Disease, By LOUIS BRADFORD COUCH.
4. Address of the President at the Twenty-eighth Meeting of the American Laryngological Association at Niagara Falls, By J. W. GLEITSMANN.
5. A Case of Papilloma of the Larynx in a Child. By FORBES R. MCCREERY.

1. **A New Method of Incision for Removal of the Breast.**—Beck describes his line of incision for the removal of the breast. It is in the form of a rectangle around the breast. The interior line of the rectangle is continued on both ends to the extent of about three inches. The same is done with the lower end of the external side, while the upper exterior end is extended along the outer margin of the pectoralis major muscle up to its humeral insertion. The axilla itself is not touched, in order to avoid cicatirization in the axilla, which is apt to produce œdema brachii. After the rectangle, including the whole breast, is excised the upper skin flap is formed and reflected. Thus the area of operation is fully exposed. Whether the fascia and the upper layer of the pectoralis major muscle only are removed, or whether, preferably, the radical operation is performed, the principle of access remains the same. The lower flap is then lifted and reflected. By gently drawing the upper flap downward and the lower flap upward one can feel, without tension, whether apposition can be attained. If there be any tension, the lower flap is made longer by extending the incision line on both sides. The straight shape of the flaps greatly facilitates exact coaptation. The wound margins are united by thin catgut. Both ends of the cross line are strengthened by the introduction of the marginal relaxation suture, consisting of silk. Into the upper end of the oblique incision line a small wick is inserted in order to drain the axilla for a day or two.

2. **The Contagiousness of Gumma.**—Williams has collected forty-one cases from the literature in reference to the question of the contagiousness of gumma. From this compilation he draws the conclusion that the clinical evidence seems at first to be contradictory; there are many authentic instances of exposure to tertiary lesions without contagion resulting, and a few instances of such exposure followed by contagion. But as the cases accumulate we must acknowledge that the balance favors a causal relation between the exposure to a tertiary lesion and the development of a chancre. About the most convincing are those cases in which a woman has lived with a man for months or years, in perfect health, and then develops a chancre soon after an outbreak of tertiary symptoms in her husband. These cases are now sufficiently numerous and reported in sufficient detail to bring conviction even to a careful mind; but they do not amount to proof. The experiments, on the other hand, are conclusive. They prove that a gumma may be capable of transmitting the disease. Whether a gumma is always contagious is a very different question. It is altogether probable that the living, growing part, the border, is always infectious, and that the rarity of examples of infection is due to the fact that the organism is present in such scanty numbers and has so little chance to reach fertile soil. In any case, the practical lesson is the same—so long as a man shows any sign of syphilis, so long he must be considered a source of danger to the community.

3. **Carbon Dioxide Gas Retention as a Frequent Factor of Disease.**—Couch is of the opinion that many of the diseases with which mankind is afflicted are primarily due to retention of the same poison in the system through failure of one or more of the excretory organs to perform their function of elimination. He asserts to have found this potent factor of disease to be carbonic acid, the only poisonous constituent of perspiration. He explains his theory and the experiments which have led him to this conclusion. He is more than satisfied that carbonic acid toxæmia will yet be found to be the main factor in the production of cancer of the breast, stomach, and of the intestines, of bronchial asthma, of heart failure in pneumonia, and of cellulitis, gangrene, etc.

5. **A Case of Papilloma of the Larynx in a Child.**—McCreery reports a case of papilloma of the larynx in a child, two and a half years old. The child was in a very poor condition, so little air was entering the lungs that the child's condition might at any time become very dangerous. As the mother urged him to do something, he decided to intubate. This he did at once, with the result of making matters so much worse that he promptly pulled out the tube. There was no improvement in the respiration, and as the only means of saving her life, he did a tracheotomy, with immediate and marked relief. The child then improved, breathing nicely through the tube, but quite unable to breathe without it. Half a year later he replaced the tube by a fenestrated one, but found the child unable to breathe through fenestra and larynx. He thinks that the child will have to wear the cannula for an indefinite period, or until the period of active growth has passed, when if necessary a final operation could be tried. To satisfy himself the author has studied the literature referring to such cases, but has been unable to find a single reference to this condition, even when the tube was worn for many years.

BRITISH MEDICAL JOURNAL.

June 30, 1906.

1. The Prevention of Difficult Labor, By G. E. Herman.
2. The Management of a Case of Labor (*Ingleby Lectures*), By C. E. Purslow.
3. A Case of Burrowing Tuboovarian Cyst, with Remarks on Its Pathogenesis, By W. S. Handley.
4. Achondroplasia, By G. Rankin and E. C. Mackay.
5. Remarks on the Meaning and Mechanism of Visceral Pain as Shown by the Study of Visceral and Other Sympathetic (Autonomic) Reflexes, By J. Mackenzie.
6. Presidential Address on the Past, Present, and Future of the British Medical Association, By H. R. Ker.

1. **Difficult Labor.**—Herman states that the most common cause of death in the puerperium is septic infection—a cause of death which is capable of complete prevention. The next class of fatalities are those which arise from disproportion between the dimensions of the child and those of the pelvis; death may occur by mechanical difficulty in delivery, or by occasioning malpresentations. This class of death ought to be prevented. There are deaths from hæmorrhage and these also with few exceptions ought to be prevented. Septic infection can be prevented by the systematic and thorough following out of antiseptic principles in every case. Mechanical disproportion can be prevented by the examination of the patient at the seventh month, and by bringing about premature labor, if the child is large, or if its size relatively to the pelvis is large. Puerperal hæmorrhages are of three kinds: (a) Accidental; not enough is known about its causes to enable us to predict or to prevent it. If we could foresee a case of great accidental hæmorrhage, or even if it has taken place, the best treatment is probably Cæsarean section. (b) Placenta prævia: here the essential thing is that the treatment should be begun before the patient has become exhausted by excessive hæmorrhage; if pressure can be secured in time upon the bleeding points the patient can be delivered without alarming hæmorrhage. (c) Postpartum hæmorrhage: prevention depends upon two things: (1) the avoiding of extraction when the uterus is not acting; and (2) the careful emptying of the uterus. The great thing to be avoided in using the forceps is pulling with them when the uterus is inactive. If the child is extracted when the uterus is contracting, the uterus will follow down the child and contract and retract. The object of putting the hand on the abdomen is to stimulate the uterus by friction, and to ascertain that the third stage of labor is going on satisfactorily. (2) The other great cause of postpartum hæmorrhage is the imperfect emptying of the uterus. If the uterus is left with a bit of placenta or chorion inside it, it will not contract properly.

2. **Management of Labor.**—Purslow, in the Ingleby lectures, lays stress on the following points: The most scrupulous attention to personal cleanliness in both doctor and nurse is absolutely essential to obtain successful results. The best ventilated and quietest room in the house should be chosen; fixed lavatory appliances are objectionable in the bedroom. A single bed with firm mattress should be used. The patient should have a bath at the beginning of labor; after its commencement she should not use the water closet, but to use clean utensils in the bedroom. While vaginal examinations should be as few as possible, yet they cannot be dispensed with altogether. Rubber gloves should be used in all septic cases. The free use of grease in making gynæcological examinations is a great preventive of contamination of the skin of the examiner's hand. After making the examination the hands should not be wiped off on cotton, etc., but should be at once plunged into hot water and washed in the usual way. As a disinfecting solution the writer uses a one to two thousand solution of bichloride of mercury. No vaginal douche should be given before labor, as it washes away the natural lubricating secretion. If the membranes have not ruptured at the time of the first examination, a second examination should be made after this occurs as change in presentation or prolapse of the cord may occur. During the second stage the vulva should be cleansed at frequent intervals, and when the head reaches the vulvar orifice all the parts should be kept in plain sight. Much may be done in the way of preventing rupture of the perinæum by preventing the head from making too rapid an exit, and by pushing it forward against the pubic arch and assisting its extension. The incision of a tense perinæum is never advisable. Delay in the first stage may be prolonged for several days without harm resulting. If the membranes have ruptured, however, delay is serious. The timely application of the forceps when the head is on or near the perinæum and does not advance in spite of strong pains, is beneficial. Forceps should be kept on until labor is completed. The regular pains should not be disguised by the chloroform, and traction should be made only during a pain. Persistent occipitoposterior position of the vertex is a frequent cause of delay during the second stage. The perinæum is frequently ruptured by the shoulders; this can be prevented. As regards the third stage, in all but a small percentage of the cases the uterus is able to separate and expel the placenta from its cavity without assistance. Squeezing of the uterus interferes with the mechanism of detachment. If the hand has to be passed into the uterus to remove the placenta, then an intrauterine douche (not of bichloride) should be given.

THE LANCET.

June 30, 1906.

1. Two Cases Illustrating Points in the Diagnosis of Tumor or Other Lesion of the Uncinate Region of the Temporosphenoidal Lobe, By T. Buzzard.
2. Submucous Excision of Deviations and Spurs of the Nasal Sæptum, with a Report of Thirty Operations, By St. C. Thomson.
3. Epidemic Cerebrospinal Meningitis, with Notes on Recent Cases Occurring in Glasgow, By W. Wright and W. Archibald.
4. The Cammidge Reaction, By A. E. Taylor.
5. The Treatment of Consumption in Sanatoria, By R. J. M. Buchanan.
6. The Nervous Phenomena Following Attempted Suicide by Hanging, By R. N. Hart.
7. Salicylate Poisoning in Children, By F. Langmead and W. H. Willcox.
8. The Nature of Surgical Shock, By W. Sheen.
9. A Case of Cancer of the Œsophagus Communicating

with the Right Bronchus in Which There Was Complete Absence of the Usual Symptoms,
By F. W. PRICE and J. G. GIBB.

10. Local Anæsthesia and Anæsthetic as Employed in Dental Extractions, Rhinological, and Minor Operations,
By D. L. SMITH and J. T. HUGHES.

2. **Submucous Nasal Operations.**—Thomson reports thirty cases of submucous excision of deviations and spurs of the nasal sæptum. The advantages of the operation are as follows: 1. No general anæsthetic is required. 2. No hæmorrhage results. 3. There is absence of pain and of shock. 4. There is no reaction, the postoperative temperature seldom rising above 99° F. 5. There is absence of sepsis. 6. No splints are required and no plugs after forty-eight hours. 7. Rapid healing takes place without crust formation. 8. There is no risk of troublesome adhesions. 9. The after treatment is of short duration. 10. There is speedy reestablishment of nasal respiration. 11. It is suitable for all deformities of cartilage or bone in the sæptum requiring treatment. 12. The space gained is not only that resulting from a vertical sæptum, but the extra room secured is sometimes one eighth of an inch in thickness. 13. No ciliated epithelium is sacrificed. 14. Accuracy of result can be depended on, and the prognosis is therefore more definite. 15. Improved appearance of the nose externally. The contraindications are: (a) Advanced age, elderly people being accustomed to their nasal obstruction; (b) childhood, the nasal chambers being so small as to make the operation difficult; (c) serious or progressive organic disease; (d) active syphilis; (e) lupus; and (f) the presence of any symptoms of influenza or acute or infectious catarrh. The special indications for the operation are: 1. To establish normal nasal respiration and to remove mouth breathing. 2. To correct the disfigurement caused by the projection of the quadrilateral cartilage into one nostril. 3. The cure of reflex neuroses of the nasal organ. 4. The relief of Eustachian catarrh. 5. The facility of treating nasal polypi and affections of the accessory sinuses.

4. **The Cammidge Reaction.**—Taylor describes the theory on which the Cammidge reaction in the urine in cases of pancreatic disease is based, as follows: In pancreatic disease the constituents of pancreatic juice may get into the blood and appear in the urine. Such pancreatic ferment, circulating in the blood, would split up the body fat into fatty acids and glycerin; such a splitting up does occur in acute pancreatic disease, and is manifested in the phenomenon of fat necrosis. But only fatty acids are found in the areas of fat necrosis; the glycerin must go somewhere, and Cammidge says it can be detected in the urine not only in severe, but in every case of pancreatic disease. The series of reactions proving the presence or absence of glycerin in the urine is very simple. The writer has analyzed the urine of one hundred and ten patients with reference to this reaction, it being present in nine cases. His opinion of the series of reactions is that it is a very valuable aid in the diagnosis of pancreatic disease, but it is not infallible.

7. **Salicylate Poisoning.**—Langmead and Willcox have studied the toxic effect of salicylic acid in children, and draw the following conclusions: 1. Sodium salicylate sometimes causes in children symptoms resembling the acid poisoning of diabetes. 2. The toxic dose is variable, depending upon the idiosyncrasy of the patient and the presence or absence of constipation. 3. Acetone may be detected in the urine and in the breath, its presence constituting one of the first symptoms of the poisoning and affording a valuable danger signal. 4. Treatment should be directed to keeping the acidity of the urine low and the bowels opened in cases of patients taking this drug.

8. **Surgical Shock.**—Sheen states that there are three stages leading to fatal surgical shock: 1. Pressor impulses reach the vasomotor centres, and are followed by contraction of arterioles throughout the body. At the same time the portal venous system relaxes. Both the arterial and portal pressures are raised. 2. Depressor impulses reach the vasomotor centres, the arterioles throughout the body relax, but do not dilate because there is no blood to fill them, remaining in a retracted condition. The arterial blood pressure falls. 3. The veins of the portal system and possibly other internal veins lose their tone. All the blood in the body collects in them, and death follows.

LYON MEDICAL

June 10, 1906.

1. Active Immunization Against Typhoid Fever,
By A. BRAUN.
2. Experimental Pseudotuberculosis of the Choroid From Aspergillæ. By ROLLET and AURAND.
3. The Traumatic Dislocations of the Semilunar Bone,
By TAVERNIER.

1. **Active Immunization Against Typhoid Fever.**—Braun reviews the history of the active immunization of men and animals against contagious diseases, beginning with the practice of variolization by the Chinese in the year 1000, and the inoculation of cattle by the Senegambians, with fluid taken from the bodies of other cattle dead from pleuropneumonia in order to protect the former from an attack of that disease. He reviews the methods advocated by Wright, Pfeiffer and Kolle, Neisser and Shija, Bassange and Mayer, and Wasserman to secure immunization against typhoid fever, and quotes observations made in many places, in armies in the field to a great extent, which seem to have demonstrated the practical utility of these inoculations. The immunity obtained was not perfect, but the percentage of mortality among those who were inoculated and attacked by the disease was much less than that among those not inoculated and attacked in the same manner. According to the English statistics the duration of the immunity obtained is about two years.

2. **Experimental Pseudotuberculosis of the Choroid.**—Rollet and Aurand report an experiment in which they directly inoculated the choroid of an eye of a rabbit with spores of the aspergillus fumigatus, and obtained a lesion which greatly resembled tuberculous choroiditis through the proliferation of the spores of the aspergillus.

3. **Traumatic Dislocations of the Semilunar Bone.**—Tavernier describes the various positions into which the semilunar bone may be luxated, the more or less incomplete mediocarpal dislocation, its complete dislocation forward, and the radiocarpal dislocation, which is rare. In recent cases it may be possible to reduce the dislocation, but in old ones the best result will be obtained in the majority of cases by an extirpation of the displaced bone.

June 17, 1906.

1. Angina; Pseudomembranous Coryza; Conjunctivitis Due to Pneumococci. By RABOT and BARLATIER.
2. Mechanism of Asthmatic Attacks, By R. MONCORGE.

1. **A Case of Angina, Pseudomembranous Coryza, and Conjunctivitis Due to Pneumococci.**—Rabot and Barlatier report a case of pseudomembranous rhinitis associated with an acute inflammation of the conjunctivæ. Pneumococci were present in the discharges from both the nose and the eyes.

LA PRESSE MEDICALE.

June 9, 1906.

1. Appendicitis and Typhlocolitis.
By Professor PAUL RECLUS.
2. Enterocolitis and Appendicitis,
By L. GUSTAVE RICHELOT.

3. Surgical Treatment of Scrotal Tumors in Hot Countries. By THIROUX and D'ANFREVILLE.

1 and 2. Appendicitis and Typhlocolitis.—Reclus and Richelot respond energetically to the statement made by Professor Dieulafoy that mucomembranous colitis has been frequently mistaken for appendicitis, and the patient subjected thereby to an unnecessary and useless operation. They question the correctness of the conclusions he drew from the observations he recorded, and point out that such a sharply defined line between appendicitis and typhlocolitis as the one indicated by Dieulafoy cannot be drawn, because certain intestinal troubles are of appendicular origin, while appendicitis is always of intestinal origin. Richelot describes cases which presented very slight symptoms other than those of enterocolitis in which an operation demonstrated the presence of an acute or chronic appendicitis.

3. Surgical Treatment of Scrotal Tumors in Hot Countries.—Thiroux and d'Anfreville portray some enormous scrotal tumors, hydroceles, hæmatoceles, or chyloceles, frequently accompanied by true elephantiasis, which they had met with in Senegal. The lower portion of the scrotum is removed, the fluid evacuated, the normal contents of the scrotum properly cared for, and then the margins of the peculiarly shaped skin incision are united with sutures.

June 13, 1906.

1. The Gastrosalivary Reflex, By H. ROGER.
2. Autonarcosis, By ISSAILOWITCH-DUSCIAU.
3. Vaccinia, Syphilis, and Local Immunity of the Skin, By R. ROMME.

June 16, 1906.

1. Local Asphyxia and Gangrene of Tuberculous Origin of the Extremities, By G. GUILLAIN and P. THAON.
2. Abortive Gastrorrhagia, By A. FALLOISE.

1. Local Asphyxia and Gangrene of the Extremities.—Guillain and Thaon declare that Raynaud's disease is not a pathological entity, but a syndrome created by very different causes. Local asphyxia of the extremities has been noted in the symptomatology of syringomyelia, lepra, scleroderma, Pott's disease, and of certain forms of neuritis. It has been known to originate from such infectious diseases as typhoid fever, pneumonia, grippe, acute articular rheumatism, and malaria, from exogenous poisoning with lead, alcohol, and arsenic, and from endogenous intoxication in diabetes and uræmia. Tuberculosis is one of the infectious diseases which has rarely appeared in the pathogeny of this trouble, but the writers report the case of a young woman, twenty-seven years of age, in whom local gangrene of the extremities seemed to have been caused by tuberculosis.

June 20, 1906.

1. Genitourinary Tuberculosis, By F. LEGUEU.
2. Actual State of Phosphatic Medication, By ALFRED MARTINET.
3. The Ions in Therapeutics, By R. ROMME.

1. Genitourinary Tuberculosis.—Legueu points out in a lecture on this subject that there are two ways in which the testicle may become infected with tuberculosis, one by way of the blood, and the other by way of the mucous membrane through the vas deferens. The latter way is by far the more common.

LA SEMAINE MEDICALE.

June 6, 1906.

The Congress for the Repression of the Illegal Practice of Medicine in France, By F. FARNARIER.

June 13, 1906.

The Operative Treatment of Complicated Fractures of the Leg by Means of the Application of an External Prothesis, By Professor JABOULAY.

The Operative Treatment of Complicated Fractures of the Leg by Means of the Application of an External Prothesis.—Jaboulay describes the method followed in a case of compound, comminuted fracture of both bones of the leg in a man, twenty-three years of age, who was brought to the hospital suffering severely from shock. Three days after the patient's entrance he was anæsthetized, the fragments of bone were adjusted and secured in place by an apparatus applied on the principle of Malgaigne's hooks, certain metal teeth entering the upper fragment, others the lower, and so maintaining their apposition while elastic traction was applied to the limb. The excellent position of the bony fragment was shown by means of a radiograph.

BERLINER KLINISCHE WOCHENSCHRIFT.

June 4, 1906.

1. Pathology of Acroparæsthesia, By A. PICK.
2. Formation of Leucotoxine by the Röntgen Rays, By R. MILCHNER and W. WOLFF.
3. Treatment of Tuberculosis of the Mucous Membranes, By E. HOLLÄNDER.
4. The Nasal Treatment of Epiphora, By A. MEYER.
5. Experimental Contribution to the Mechanism of the Secretion of the Stomach After a Test Breakfast (*Concluded*), By L. KAST.
6. Pathology and Treatment of Arteriosclerosis (*Concluded*), By L. MOHR.

3. Treatment of Tuberculosis of the Mucous Membranes.—Holländer considers that the ascending tuberculosis of the mucous membranes of the mouth and nose is much more frequent, both with and without the presence of lupus, than it has generally been supposed to be heretofore. Contrary to that of the descending form, in which the clinical picture is controlled by the condition of the diseased lung, the prognosis for life in the ascending form, even when fully developed, is not unfavorable. It exhibits a varying tendency to recovery after the removal of the primary focus, and even the pulmonary complications follow a benign course. The treatment he advocates is cauterization with hot air and the internal administration of iodide and calomel.

4. Nasal Treatment of Epiphora.—Meyer calls attention to the fact that nasal trouble may cause epiphora in two ways: First by a reflex increase of the lacrymal secretion as the result of an irritation situated somewhere in the nose, and, second, by a mechanical hindrance to the escape of that secretion from the lacrymal passages. In either case a cure may be obtained by the removal of the intranasal trouble.

MUENCHENER MEDICINISCHE WOCHENSCHRIFT

June 5, 1906.

1. Cholera and Typhus Endotoxine, By Professor MARTIN HAHN.
2. Bier's Stasis Hyperæmia from the Standpoint of the Theory of Endotoxines, By ALFRED WOLFF-EISNER.
3. An Attempt to Lessen the Possibilities of Infection During Operation in the Abdomen, By A. THEILHABER.
4. Measurements of the Blood Pressure, By THEODOR STILLING.
5. Treatment of Hypertrophy of the Prostate. By RÖRIG.
6. Pregnancy and Tuberculosis of the Larynx, By LEVINGER.
7. Permanent Spinal Paralysis After Lumbar Anæsthesia, By KÖNIG.
8. Two Cases of Left Sided Paralysis of the Abducens After Spinal Anæsthesia, By RÖDER.
9. An Unexplained Fever with the Highest Temperature Yet Recorded, By RICHARD HELLER.
10. Rupture of the Extensor Aponeurosis of the Finger, By O. FRANCK.
11. Polycythæmia, with a Contribution to the Ætiology of Ophthalmic Migraine, By KÖSTER.
12. The Trip to the Congress at Lisbon, By OSKAR VULPIUS.

2. Bier's Stasis Hyperæmia from the Standpoint of the Theory of Endotoxines.—Wolff-Eisner states as the teaching of the endotoxine theory that: 1. Both intracellular and extracellular bacteriolysis take place in the bodies of animals. 2. This bacteriolysis affects

not only the nonvirulent bacteria, but also the most virulent infection. 3. The animal dies not because other injuries are inflicted in spite of the bacteriolysis, but directly through the endotoxic substances set free by that process. 4. Under certain circumstances death may follow the use of a bactericide serum, as when an animal could overcome the intoxication produced by a slow bacteriolysis, through the bactericidal material sparsely present in its own serum, but could not endure the greater quantity of endotoxines suddenly released through the bactericidal serum. 5. Bactericidal sera must not be used, except along certain indications. 6. The fate of the infected man or animal does not depend on the serum, and the good results obtained by the therapeutical use of such sera are not to be ascribed to their bacteriolytic properties. The fate of the infected animal is determined by the quantity of endotoxine set free. 7. The use of a bacteriolytic serum is indicated when it is able to prevent the increase of the bacteria and thereby the quantity of toxic substances. 8. The use of bactericide sera is indicated in cases in which the number of bacteria which will become dissolved is still small. The field of these sera is that of prophylactic immunization. 9. The use of bactericide sera is contraindicated in all severe cases which follow a rapid course. 10. There are no antibodies which arrest the action of the bacterial endotoxines. 11. No immunity, but an increased susceptibility is induced by the introduction of albumenoid substances. 12. The increased bacteriolytic power of the serum restricts the increase of bacteria in reinjected animals, so that the bacteria increase but little.

5. **Treatment of Hypertrophy of the Prostate.**—Rörig advocates the Bottini operation, and claims that it is under all circumstances to the interest of the patient that that operation should be performed, and that only in cases in which a negative result has thus been obtained should a prostatectomy be undertaken.

6. **Pregnancy and Tuberculosis of the Larynx.**—Levinger reports several cases in which tuberculous laryngeal tumors appeared during pregnancy.

7, 8. **Paralysis After Spinal Anæsthesia.**—König and Röder report cases which illustrate the danger that the induction of anæsthesia through the spinal cord may be followed by more or less permanent paralysis. In König's case the paralysis affected the patient from the navel down and persisted until death, three months after the induction of the anæsthesia. In one of Röder's cases the left abducens was permanently paralyzed; in the other temporarily.

9. **An Unexplained Fever.**—Heller reports the case of a girl, fifteen years old, in whom the temperature rose to 45° C. (113° F.). This temperature was accompanied by no pathological symptoms, except a slight headache and an uncertain feeling of pain about the heart. No physical signs of disease could be detected. The patient recovered in nine days.

ZENTRALBLATT FUER CHIRURGIE.

June 23, 1906.

1. Treatment of the Wound After Transplantation of the Skin, By A. WEISCHER.

1. **Skin Transplantation.**—Weischer's technics consist in evening up the surface of granulations which is to receive the transplanted skin, partly in order to give the pieces of skin an opportunity to spread out evenly, partly to remove the almost constant superficial layer of pus cells. The dressing is kept moist with hot salt solution for the first forty-eight hours in order that the secretion from the wound surface shall reach the dressing rather than permeate the interstices of the transplanted skin. His results have been excellent. In seventy-five per cent. of the cases, the flaps healed in 100 per cent., in the remainder, eighty to ninety per cent.

ZENTRALBLATT FUER GYNAEKOLOGIE.

June 23, 1906.

1. Radical Operation of Large Umbilical and Ventral Herniæ, By E. GRASER.
2. Thrombosis of a Large Placental Vein, By P. MATHES.
3. A New Case of Puerperal Eclampsia Cured by Renal Decapsulation, By G. M. EDEBOHLS.
4. Rare Neoplasms of the Female Urethra and the Urethrovaginal Septum, By H. THOMSON.

1. **Radical Cure of Umbilical and Ventral Herniæ.**—Graser has employed with satisfaction and with good final results the Pfannenstiel-Menge transverse incision. The operation takes from two to three hours, and is often difficult. The cutaneous incision is horizontal and is carried over the greatest diameter of the hernial sac. The sac is resected. The anterior sheath of the rectus is then divided transversely to the outer side of each muscle, and the anterior sheath is raised with the adherent muscles. The posterior sheath is divided vertically, and the entire muscle thus freed. A careful layer suture is then applied. The author advises, in the cases of fat patients, preliminary treatment for four to five weeks.

3. **Eclampsia Cured by Renal Decapsulation.**—Edebohls records a case of eclampsia developing within twenty-four hours after labor. The patient had several convulsions and was unconscious for four hours before the operation. Decapsulation of both kidneys was performed. Two convulsions followed the operation and for twenty-four hours the patient remained unconscious. From this time on she improved rapidly and made a perfect recovery. Four months after operation there were no albumin nor casts in the urine. Edebohls gives as the indications for the operation the renal insufficiency and the intense uræmia.

RIFORMA MEDICA.

June 23, 1906.

1. The Transmission of Some Experimental Renal Lesions from Mother to Fœtus, By EGISTO MAGNI.
2. Clinical and Experimental Researches on Postdiphtheritic Pneumonias, By SALVATORE CAPELLANI.
3. The Regeneration of the Nerve Filaments, By M. SEGALE.
4. A Case of Double Human Monster, By TADDEO TADDEI.

1. **Transmission of Renal Lesions to the Fœtus.**—Magni's experiments were directed towards solving the question as to the effect of any renal toxines of the cellular specific type (nephrotoxines) upon the fœtal kidney, when such toxines circulate in the gravid woman. To this end he injected an aqueous extract of the renal substance into the veins of rabbits. It was found, however, that by this means only small amounts of toxine could be introduced so that the lesions in the fœtal rabbits were minimal. In another series of rabbits, therefore, he ligated one ureter either before or during the first few days of pregnancy. A slow, but continuous absorption of the nephrotoxine then took place, and the fœtal kidneys exhibited lesions comparable to those observed in adult animals after the ligature of the ureter.

2. **Postdiphtheritic Pneumonias.**—Salvatore Capellani reports thirty-four cases of pneumonia occurring after diphtheria in the hospital for contagious diseases at Naples. These patients showed a mortality of sixty-seven per cent., a figure which is very high in view of the fact that the mortality of pneumonia ordinarily does not exceed thirty per cent., and is still lower, namely, only ten per cent. among children under ten years of age, to which group these patients belonged. Seeking an explanation for this high mortality, Capellani studied the modifications in virulence which take place in cultures of streptococci and of pneumococci in the presence of diphtheria toxine. He found that the virulence of both these germs was markedly en-

hanced in cultures containing the toxine of diphtheria. Clinically, his contention was supported by the fact that in more than 20 of his cases the pneumonia occurred within the first ten days of the diphtheria, i. e., at the acme of the toxic stage, when the system was saturated with the poisons.

3. **Regeneration of the Nerve Fibres.**—Segale experimented with a view of establishing the mechanics of nerve regeneration. When a nerve is partly excised, the peripheral stump undergoes processes quite apart from ordinary degeneration. When a piece of a nerve trunk is transplanted into an animal of another species, the transplanted portion degenerates, but fails to show any of those changes which take place when the nerve trunk is transplanted into the same species of animals—changes which constitute a true regeneration and restitution of the integrity of the nerve. The exact mechanism of regeneration is still unknown, and the newly formed fibres may either form a bridge across the excised portion, or they may unite with the degenerated fibres of the isolated portion, and may through their contact infuse new life into the latter. The shortest route between the cut ends is not always chosen by the new fibres which come from the distal extremity of the central end, and sometimes the new fibres take a very tortuous course, difficult to demonstrate.

4. **Double Monstrosity.**—The human monster described by Taddeo was a prematurely born fœtus of the feminine sex, born of healthy and normal parents. The monstrosity consisted of a fusion of two female fœtus, which had grown together in the upper parts of their bodies, down to the umbilical cords, whenceforth the bodies were separate. There were four arms, four shoulders, a single head, a single face, which was regularly and symmetrically developed.

ROUSSKY VRATCH.

May 27, 1906.

1. Three Cases of Cyclopia. The Origin of this Deformity (*To be concluded*), By N. A. Batonyeff.
2. Pathological Changes in the Organs of Animals Poisoned by Cocaine Which Have Been Revived With Chloroform, By V. I. Parine.
3. On Adams-Stokes's Disease (*Concluded*), By N. D. Strashenko.
4. Functional Rest for the Lungs, and the Coordination of Respiratory Movements in Pulmonary Tuberculosis (*Continued*), By A. N. Rubel.

2. **Chloroform as an Antidote for Cocaine.**—Parine found that animals which had been poisoned by cocaine could be saved by means of inhalations of chloroform; but that they showed marked changes in their internal organs afterwards. The following pathological changes were found in the animals experimented upon by Parine: (a) Disintegration and chromatolysis of the Nissl's bodies in the spinal cord; chromophilia of the cell protoplasm, vacuolization, and a marked displacement of the nuclei toward the periphery. (b) Disintegration and destruction of the Nissl's bodies in the nerve ganglia of the heart. Marked displacement of the nuclei and nucleoli, and fragmentation of the latter. Hæmorrhages of considerable size in the intermuscular tissue of the cardiac sæptum. (c) Fragmentation and chromatolysis of Nissl's bodies in the retina. Hæmorrhages in the pericardial sac, and under the endocardium. (d) Fatty degeneration of the liver; changes in the shape and size of Altmann's granules. (e) In the kidneys, changes in the shape and size of Altmann's bodies, as the result of cell degeneration. In the lungs, swelling and desquamation of epithelia of the pulmonary alveoli and extensive hæmorrhages. After these animals had been revived with chloroform they were ill for a week or two and required great care to secure their permanent recovery.

ANNALS OF GYNÆCOLOGY AND PÆDIATRY.

June, 1906.

1. The Education of the Dullard in the Public School, By J. P. Haney.
2. The Management of Constipation in Infancy, By T. S. Southworth.
3. Report of a Case of Sterility Due to Double Hydrosalpinx Relieved by Operation, By J. V. D. Young.

1. **Education of the Dullard in the Public School.**—Haney reports that in fifteen of our cities of more than fifty thousand inhabitants, special classes and teachers have been provided for the instruction of the mentally defective and backward. It has been found that in such classes the functionally defective or backward pupil is offered a means for rousing his intelligence and advancing him to his proper standing. Those who are actually defective, if suffering from no profound lesion, can thus be roused to a real interest in school work, and can be taught skill of hand which may enable them to earn a livelihood. To such individuals the usual class room conditions are repellant. A movement of this character means the oversight of the weakling from the cradle to the grave, it means a protection and a support to those who cannot help themselves and who produce their worst when left to their own devices.

2. **The Management of Constipation in Infancy.**—Southworth believes that the aim of treatment should be not merely to relieve, but to cure the condition. First in importance is it that the stools should be carefully inspected so that the actual condition of affairs may be known. Delay or difficulty in expelling fæcal masses from the lower bowel is due to the size and consistency of the masses, the available expelling force, and the habit of the individual. The first factor includes the secretion and absorption of the lower bowel, the second the muscular development of the abdominal wall and intestine, and the third involves proper training. The condition in bottle fed infants should be largely avoidable, but is nevertheless very common. It is usually best treated by a general increase of the strength of the food, the increase in the fat not exceeding four per cent. Orange juice should be given after the sixth month, and cod liver oil if there is evidence of rhachitis. Oatmeal gruel may be used to dilute the milk, and malt sugar may be used in preference to other forms of sugar. For drugs the author recommends the preparations of cascara which he gives to infants in full doses.

REVUE DE CHIRURGIE.

June, 1906.

1. Total Resection of the Saphena Veins in the Treatment of Superficial Varices of the Lower Limbs and the Complications Arising From Them, By F. Terrier and P. Alglave.
2. General Peritonitis Following Perforation in the Course of Tuberculous Enteritis, By L. Bérard and M. Patel.
3. Wounds of the Thyreoid Body Produced by Cutting Instruments, By H. Toussaint.
4. Abscess of the Liver from Residence in the Colonies (Tropics). A Clinical and Therapeutical Study Based Upon Forty-three Personal Observations, By E. Loison.

1. **Total Resection of the Saphena Veins.**—Terrier and Alglave conclude their paper as follows: In addition to the mechanical causes which produce superficial varices of the limbs there are the excessive force coming at the beginning of the varices and exerted upon the veins which perforate the superficial fasciæ, and the superficial reflux which comes at a later period when the saphena veins are already dilated and have valves which are incompetent. By simple or multiple ligation of the internal saphena, with partial resection which are indicated when the varices are large and

there is superficial reflux improvement may be obtained, but the primary condition remains and permits the varices, after a longer or shorter interval, to return to their former condition. On the other hand, if there is complete resection of the trunks and branches of the veins which are varicose in all cases of large, painful, and dangerous varix, the pressure force and the superficial reflux are attacked and the cause of these lesions is suppressed. The operations proposed, according to circumstances, are: 1. Total resection of both saphena veins and as many as possible of their varicose branches. 2. Total resection of one or the other saphena. 3. Resection along the leg of the internal saphena. 4. Circular supramalleolar and supraaponeurotic section of Moreschi, combined with simple or double resection, as complete as possible of both saphenæ, in cases in which the leg is ulcerated.

2. **General Peritonitis Following Perforation in the Course of Tuberculous Enteritis.**—Bérard and Patel affirm that the theoretical and practical treatment of this condition should consist in removing from the peritoneal cavity its septic contents, in searching for and suturing the perforation, or in resecting the segment of intestine which is involved. It could not be utilized in the varieties of asthenic peritonitis, in which ice and morphine to moderate the pain are about the only resources. In sthenic peritonitis it has been tried, but the difficulties which accompany such treatment are almost insurmountable. Search for a small perforation is a very uncertain procedure, and if it should be found its suture would call for resection of a larger or smaller portion of the intestine. On the whole, it would seem probable that all surgical intervention was contraindicated. The condition of the patient is not usually favorable to an operation, and a complete operation is almost as searching in its details as an autopsy.

3. **Wounds of the Thyreoid Body Produced by Cutting Instruments.**—Toussaint treated a case of complete vertical section of the thyreoid gland, produced with a knife. Two other cases were found recorded, one an oblique and the other a transverse section. In two of the cases there was retraction of the cut end of the anterior jugular vein. The study of these cases impels the author to recommend the suture of the gland after the proper enlargement of the wound. The rich vascular supply of this gland makes its injury by section especially dangerous. Treatment of such a wound and in such a locality as the neck with a tampon is quite irrational and unsurgical. Should the hæmorrhage persist in spite of the ligation of such vessels as are apparently cut, the anterior thyreoid artery must be sought and tied. Drainage of the wound, from its lowest part, should be practised.

4. **Abscess of the Liver.**—Loison found the mortality in thirty-five reported cases of operation for hepatic abscess to be forty per cent. Of the acute cases the mortality was seventy per cent., of the chronic cases twenty-eight per cent. Autopsy upon the fatal cases showed the complicating presence of diffuse serofibrinous peritonitis, pleurisy with effusion, pulmonary abscess and gangrene, more or fewer hepatic abscesses undiscovered at the time of operation, dysentery, pulmonary tuberculosis, and many other serious evidences of generalized infection. The author thinks it must be concluded that hepatic abscess is a very serious condition, and that its gravity may be due to the multiplicity of the suppurating foci in the liver as well as to the variety of infectious conditions with which it may be complicated.

REVUE DE MEDECINE.

June, 1906.

1. Dengue Fever in 1904 and 1902. Attenuated, Seven, and Prolonged Varieties, By H. DE BRUN.
2. A New Variety of Congenital Myoclonus, Peculiar to Certain Families, and Characterized by Constant Mystagmus, By E. LE NOBLE and E. AUBINEAU.
3. Remarks Concerning the Treatment of Biliary Hæmoglobinuric Fever, By S. J. KANELLIS.
4. Hypertension and Carbonic Acid Baths, By J. HEITZ.

1. **Dengue Fever in 1904 and 1902.**—De Brun narrates his experience with this disease in Beyrouth, Syria. He finds the initial symptoms analogous with those of variola, intermittent malarial fever, and gastric fever, except that its duration is more brief than any of the others. It is not uniform in its manifestations, each epidemic presenting its particular clinical phenomena. Thus, in one epidemic there may be a cutaneous eruption, in another none at all, fever may be intense in one epidemic, in another there may be almost apyrexia; headache and pains in one, in another a suggestion of typhoid. The epidemic of 1904 was characterized by the rapidity of its attack, and the shortness of its duration, resembling in intensity the dengue of the tropics, and unlike the usual epidemics in Syria. The cases reported were in young students of the university of Beyrouth. The symptoms were notably those of fever, sudden and sharp elevation of temperature, and sudden decline, occasional chills at the beginning, malaise, wandering pains, constipation, and anorexia with coated tongue. A symptom which seemed almost pathognomonic was a painful condition of the ocular muscles which was aggravated by the slightest motion of the lids or the eyes. This epidemic demonstrated the distinct difference between this disease and la grippe. In the epidemic of 1902 there were cases which lasted eight, ten, and twelve days, in which the symptoms were of a very severe character.

2. **Congenital Myoclonus.**—Le Noble and Aubineau have investigated this condition to which they have given the name myoclonal nystagmus, and have narrated the findings in twenty-five cases. They found that it was usually congenital, frequently attacked several members of the same family, was sometimes hereditary, persisted during life, and was unaffected by therapeutical agents. Nystagmus is the central symptom, and five types of this condition were observed: 1. Essential nystagmus. 2. Essential nystagmus with the addition of such symptoms as trembling of the head, asymmetry of the face, inequality of the pupils, etc. 3. Essential nystagmus, with special nervous symptoms, exaggeration of the reflexes, epileptoid trembling, Babinski's sign, etc. 4. A complex form with one or more of the preceding signs, trophic vasomotor, and intellectual troubles with more or fewer complications. 5. A family or hereditary manifestation of nystagmus either isolated or associated with other symptoms. A marked feature also in the cases is that they occurred in a degenerate race stock. They are therefore the expression of profound changes in cerebrospinal centres under particular conditions, though without extensive changes in the more important faculties.

3. **Bilious Hæmoglobinuric Fever.**—Kanellis observes that as this fever has recurrences, and as anæmia and general weakness after each attack predispose to other and more severe attacks, everything should be avoided which may lead to the disease. The body should not get chilled, woollen garments should be worn, and every suspicion of malaria should be treated with quinine, and hot stimulating infusions. Mosquito bites must be avoided and mosquitoes must be killed at every opportunity. There are two forms of bilious hæmoglobinuric fever, the paludal and that which is associated with quinine (quinique). The following are given as useful data for differential diagnosis: 1. Preliminary use of quinine. 2. Nonrecurrence of hæmoglobinuria, quinine being withheld. 3. Intense icterus, hæmoglobinuria, vomiting, pain in the kidneys in the intermittent variety, or continuation of the hæmoglobinuria in the paludal variety. 4. Improvement and cure

after the use of quinine in most of the paludal cases. 5. Aggravation of the symptoms after the administration of quinine, and death when this treatment is persisted in in the quinine variety. 6. Appearance of paludal hæmoglobinuria in certain cases in which no form of quinine has previously been used. 7. The discovery of the plasmodium of Laveran. 8. Sometimes after the cure of the paludal hæmoglobinuric fever there may be attacks of intermittent or tertian fever; the use of quinine for these attacks never produces hæmoglobinuria; on the contrary, this hæmoglobinuria is always produced in patients who pass dark urine whenever they take the smallest dose of quinine.

4. **Hypertension and Carbonic Acid Baths.**—Heitz reviews this question from its various aspects, and concludes that the principal indication in this condition is the lowering of the arterial pressure. Such a lowering is at the same time the index that the treatment is effective. Functional hypertension, in which there is no decided vascular or renal change, is most benefited by this treatment. The subjects of this condition are those who have aortic insufficiency, young patients with gouty tendency, especially children of fathers well advanced in life. Another class are affected about the age of puberty, being subjects of erethism, of pseudo-hypertrophy of the heart, or of cardiac and pulmonary neuroses. Excellent results are also obtained in the hypertension of neurasthenia. Another class of patients with hypertension are of arthritic temperament, forty or fifty years of age, gouty, diabetic, women going through the menopause. They have no renal insufficiency, and usually show the vasodilator effect of the baths. The contraindications in such cases are aneurysm of the aorta and an impending attack of gout. In the case of hypertension from confirmed sclerosis the sudden lowering of tension means a serious prognosis with reference to the heart, and contraindicates the baths.

EDINBURGH MEDICAL JOURNAL

June, 1906.

1. The Practical Side of an Infants' Milk Depot, By W. Robertson.
2. Green, Blue, Magenta and Other Colored Urines, By W. Murrell and H. W. Hake.
3. A Case of Aortic and Pulmonary Obstruction and Incompetence Complicated by Pericarditis with Effusion, By H. A. Stewart.
4. Some Cases of Hernia in Which Several Loops of Bowel Were Strangulated in the Same Sac, By J. H. Pringle.
5. Recurrent Acute Inflammation of the Mastoid Process, By W. G. Porter.
6. Congenital Paroxysmal Cyanosis with Polycythæmia in a Girl Sixteen Years of Age, By F. P. Weber.
7. A Case of Heart Clot, By S. Keith.
8. A Case of Savin Poisoning, By J. R. Hamilton.

1. **The Practical Side of an Infants' Milk Depot.**—Robertson thinks that such a depôt does a vast amount of good. It saves many lives, and teaches parents how their infants can be rationally reared on the bottle. There were no deaths from diarrhœa among the infants fed with milk supplied from the author's depôt in 1904, while of the infants born in the same district, but hand fed, there were thirty-six deaths. In 1905 there were three deaths from diarrhœa among infants fed upon the depôt milk, of others born in the same district and not fed on this milk there were forty-nine deaths from diarrhœa.

2. **Green, Blue, Magenta and Other Colored Urines.**—Murrell and Hake found that the great majority of blue and green urines were derived from the use of methylene blue. The chemical tests are as follows: 1. Caustic potash or soda solution produces a violet color. 2. Nascent hydrogen decolorizes it, the color returning after contact with air. 3. Peroxide of hydrogen, potash permanganate, sulphuric acid, and bleaching powder restore color to the decolorized urine. Carbolic acid urine is dark when voided, or becomes dark after exposure to air. Melanuria is associated with melaniasis, especially with melanotic sarcoma. Hæmoglobinuria and hæmatoporphyrinuria with urine of a port wine color occur after disintegration of blood corpuscles when an excess of hæmoglobin is liberated. It may be due to sulphonal poisoning. Guaiacum and the spectroscope are the best tests. Red and purple urines are due to the use of phenol phthalein, the latter being excreted with the urine and giving a purple color when potash or ammonia is added to the urine. The spectrum of purgen urine is darkened or blotted out, with the exception of the red and orange. Purgatin urine is bright red in both acid and alkaline solutions. Its spectrum is not easily identified. Pyoktanin urine has a violet tinge and does not readily yield a spectrum. With hydrochloric acid it is successively blue, green, brown, and yellow. Fuchsin in small doses gives an olive green urine, in larger ones a bright purple urine. Its spectrum shows a characteristic band in the green.

4. **Cases of Hernia in Which Loops of Bowel Were Strangulated in the Same Sac.**—Pringle reports three cases of this character, and finds four others reported by Lauenstein. He thinks the condition one of great importance, the possibilities being as follows: 1. The several loops outside the abdominal cavity may become gangrenous apparently without involvement of the connecting loop, and may result in an artificial anus with multiple lumina. 2. The internal connecting loop or loops may become gangrenous without gangrene of the external herniated loops. 3. The herniated loops, together with the connecting loop or loops, may all become gangrenous. The important point is to determine the state of the connecting loop which, blocked at both extremities, cannot empty its contents forward or backward, and for this reason, as well as on account of the fermentative changes within its lumen, is liable to have its vitality gravely interfered with. In such a case one should examine the connecting loop through its entire length, however favorable the appearance of the herniated loops may be.

ARCHIVES OF THE ROENTGEN RAY

July, 1906.

1. The Principal Factors in Radiotherapy and Radiumtherapy, By J. Belot.
2. High Frequency Currents in the Treatment of Growths of the Skin, Epitheliomata, Condylomata, and Warts, By Horace Manders.
3. The Treatment of Irreducible Spinal Curvatures in Growing Subjects, By Edred M. Corner.
4. A New Material for Fluoroscopic Screens, By Frederick F. Strong.
5. On the Formation of a Specific Leucotoxine in the Blood Serum as a Consequence of Röntgen Irradiation in Leucæmia, Pseudoleucæmia, and Lymphosarcoma, By Klieneberger and Zoeppritz.

1. **The Principal Factors in Radiotherapy and Radiumtherapy.**—Belot says that the true nature of the active agent in radiotherapy, much disputed at first, has been definitely determined and proved to be the pencil of rays emitted by the anticathode. This pencil of x rays was proved not to be homogeneous, but to consist of a whole gamut of different rays distinguishable by their unequal powers of penetration. Next the reaction was shown to depend chiefly on the quantity of rays absorbed, and Holzknecht invented an ingenious method of measuring the dose of rays employed. Once possessed of a fairly accurate means of measurement, the new science advanced rapidly by leaps and bounds. Confined at first to the treatment of certain dermatoses, it soon extended its field of action to the more obstinate forms of neoplasm, and it is not too much to say that radiotherapy has revolutionized this branch of therapeutics. The two principal factors in radiotherapy are: 1. The quality of the rays emitted by the focus tube. 2. The quantity of rays ab-

sorbed by the tissues. The following are the general rules which should govern the matter in dosage: 1. The full therapeutical dose should be given in a single application, so long as this does not exceed the dose which usually determines reaction of the integument. 2. If a larger dose is required, a dose should be given at each sitting which is the maximum dose compatible with the integrity of the integument, each irradiation being separated by the minimum interval necessary to secure this integrity. The discoveries of Becquerel, M. and Mme. Curie, Debierne, Rutherford, and others, have provided medicine with a new agent capable of producing in the tissues effects analogous to those caused by the x rays. Certain lesions subjected to the action of radioactive substances have shown marked amelioration, and, although still in its infancy, radiumtherapy has already its own technics. It is probable, moreover, that the investigations now in progress as to the therapeutical effect of the radium emanation will open up a new field for radiumtherapy. The possibility of introducing this emanation into small cavities, and of condensing it by means of liquid air, and thus incorporating it with vaseline or some other vehicle, is of the greatest interest from a medical standpoint. In radiumtherapy, not less than in radiotherapy, the question of quantity is of vast importance, and is unfortunately quite neglected in the majority of observations published on this subject. It is not enough to say that in a given case a specimen of radium was used of such and such activity; it is of equal importance to know the amount of the radioactive substance used. The author who omits this detail is like the physician who tells us he used in a syphilitic case a quantity of 1 per cent. solution of bichloride of mercury without telling us the dose prescribed.

4. **A New Material for Fluoroscopic Screens.**—Strong explains that there are two methods of employing the x rays in surgical diagnosis. These have been denominated skiagraphy and fluoroscopy. In the first process a sensitive photographic plate receives and records the shadow picture resulting from the passage of the rays through structures of varying degrees of penetrability. In fluoroscopy the shadow picture is made visible by a screen coated with some fluorescent chemical, which absorbs a portion of the rapid short x rays and transforms them into longer, slower waves, which are perceived as light by the retinal filaments of our eyes. The substance originally used for x ray screens was the barium and platinum cyanide. The extreme expense of this substance limited its general use, more especially as its fluorescence was not permanent. Platinum screens lose their water of crystallization in a few months, and become useless for x ray purposes. Soon after the introduction of the x ray, investigations were commenced with a view to the discovery of a substitute for the barium platinum cyanide, free from its objectionable features—*i. e.*, excessive cost and transitory fluorescence. The author thinks he has found by experimenting a substitute, consisting of a mixed quantity of willemite with zinc sulphate or chloride, sodium or potassium silicate and a small amount of a soluble manganese salt.

Letters to the Editors.

THE CARE OF THE INSANE IN PENNSYLVANIA.

1225 SANSOM STREET,
PHILADELPHIA, *July* 2, 1906.

To the Editors: In the June 23rd number of your *Journal* I note an editorial under the heading The Care of the Indigent Insane. This editorial is founded upon the paper presented by Dr. John B. Chapin at the meeting of the Association of Trustees and Superintendents of State and Incorporated Hospitals, held in Philadelphia on May 17th. It is unfortunate that when Dr. Chapin's article was given to the newspapers and journals for publication, the very able answer to his argument, by Cadwalader Biddle, Esq., secretary of the Board of Public Charities, was not also published, for if this had been the case you would not have erred in your article, as you have, in supposing that the State of Pennsylvania, by its adoption of county care, has been led into any such error as to put the insane of the State under the care of wardens of poor houses.

The County Care Act distinctly specifies that there shall be a careful regulation of all the buildings and the medical care, by the Committee on Lunacy, before the county hospitals shall be licensed for the treatment of the insane; the plans for the buildings are carefully gone over by the committee, and a careful investigation made as to the ability of the physicians appointed to attend the patients in the hospital (in the majority of the counties the hospital buildings being separate from those of the poor house buildings), and it is also necessary that such physicians shall either reside in the hospital or be within easy telephonic connection.

Perhaps the most valuable testimony with regard to the results of county care can be shown in the statistics of the past three years. I will not trouble you with the items, which, however, can be furnished you if you want them, but these items show that in the treatment of the insane in the county hospitals the percentages of discharges—cured and improved—are rather more favorable than those in the State hospitals. Some of these hospitals under county care, for example, the one at Embreeville, the Chester County Hospital, compare in every respect favorably, both in buildings, grounds, and the treatment of the insane, with even the private hospitals in the State, and it is the object toward which the energies of the Committee on Lunacy are directed to gradually build up throughout the whole State similar small hospitals. At the same time it is recognized that in the larger cities the care of the insane in the county hospitals can be greatly improved.

The Committee on Lunacy have the highest respect and regard for the opinions of Dr. John B. Chapin, but can only suppose that in this paper he has not carefully studied the County Care Act, and hence he has written in such a way as to mislead you in the statements which you have published.

J. NICHOLAS MITCHELL,
Secretary, Committee on Lunacy of the Board of Public Charities.

Proceedings of Societies.

AMERICAN GYNÆCOLOGICAL SOCIETY.

Thirty-first Annal Meeting, held in Hot Springs, Va., May 22, 23, and 24, 1906.

(*Concluded from page 102.*)

The President, Dr. RICHARD B. MAURY, of Memphis, Tenn., in the chair.

Cancer in the Cervical Stump After Supravaginal Hysterectomy.—Dr. CURRIER, of Mt. Vernon, N. Y., read a paper with this title (to be published).

Dr. NEWMAN, of Chicago, reported a case of this character, presenting the specimen together with microscopical slides. He believed there was greater safety in complete extirpation of the uterus.

Dr. NOBLE, of Philadelphia, reported two cases. Winter had collected sixteen cases of this condition. The speaker did not feel inclined to change his methods of operation for so small a number of cases. All the cases which had been reported had probably been cases of adenomyoma, and not simple myoma. He believed

that the existence of fibroid tumors might lead to the development of cancer, and therefore that all such tumors should be removed.

Dr. MANTON, of Detroit, reported a case of supravaginal hysterectomy in which the specimen was a round celled sarcoma. The cervix subsequently degenerated and was removed. The specimen was declared a spindle celled sarcoma.

Dr. POLK, of New York, did not believe that one could, in general, decide as to the removal of the cervix, and the evidence was not as yet sufficient to induce him to change his method of operating.

Dr. HENROTIN, of Chicago, thought the supravaginal operation was too valuable a method to be discarded. If the cervical stump was retained, it might be followed by the development of granulation tissue, but this did not necessarily become cancerous.

Dr. DÜHRSSEN, of Berlin, thought the arguments were in favor of the vaginal method of hysterectomy for fibroid tumors. He believed, however, that there was no more danger by the abdominal than by the vaginal method. If the cervix was lacerated, he believed it should always be removed.

Dr. CURRIER thought the discussion was valuable in collecting evidence relating to the development of cancer, and this was an important part of the work of the society.

The Address of the President on the Treatment of Uterine Displacements was then delivered.

Results of Vaginal Section and Drainage in Early Cases of Ectopic Gestation.—Dr. FORD, of Utica, N. Y., narrated the history of a case in which hæmorrhage which was nearly fatal had followed vaginal section and incision of the gestation sac. The cavity was packed with gauze at the primary operation, and when this was removed, a week later, a second profuse hæmorrhage ensued. The patient ultimately recovered, and the author had felt justified in performing a similar operation in a series of twelve cases, in all of which recovery had taken place, and had not been followed by any evidence of pelvic disease. This operation was believed to be indicated for septic and nonseptic cases. It was especially desirable to make the diagnosis early in the history of such cases and to remove the tumor before rupture. Unfortunately the skilled gynæcologist was seldom the one who first came in contact with such cases.

Dr. HENROTIN, of Chicago, admitted that this method of procedure might be of great value in some cases, but he objected decidedly to its general use. For himself, he would never operate in a case of tubal pregnancy by the vaginal route; there was too much danger from hæmorrhage. If one was certain that the fœtus was dead, the vaginal incision might be permissible.

Dr. WATKINS, of Chicago, thought incision and drainage might be permissible if there was merely a hæmatocele in the pelvis, but not if there was an unruptured tubal sac. He objected to the method described by the reader of the paper as involving danger, both from hæmorrhage and from sepsis.

Dr. STONE, of Washington, was of the opinion that the reader had explained the method by which the operation should not be done. It was dangerous to pack with gauze when one did not know as to the condition which was behind it.

Dr. MANN, of Buffalo, believed that by the method of operation described hæmorrhage that would prove uncontrollable might be encountered. He was familiar with several cases in which this had been the fact. Rarely was it safe to incise a tubal gestation sac through the vagina.

Dr. GORDON, of Portland, Me., believed that safety was the first rule to be observed in operating, and he considered the dangers of the method advocated as too great to warrant him in using it.

Dr. GOFFE, of New York, believed that the voice of condemnation which had been raised should apply to incision through Douglas's cul de sac, but not to incision through the anterior vaginal fornix. The important question in a given case was that of whether it was suitable for treatment by the vagina. If the pregnancy was of less than three months' duration, he believed it was safe to attack it by the vaginal route. This method would also enable one to do any conservative work upon the pelvic organs which might be required.

Dr. NOBLE, of Philadelphia, was accustomed to treat hæmatocele by incision through the posterior vaginal fornix, but had usually found it necessary to do an abdominal operation at a later period to complete the work. The mortality by such a plan could be reduced almost to *nil*. The fatal cases of operation for tubal pregnancy were usually those which had been badly managed. By the vaginal method of operating it would usually be necessary to sacrifice all the pelvic generative organs.

Dr. DÜHRSSEN agreed with a previous speaker in the propriety of incision through the posterior fornix for hæmatocele, but through the anterior fornix for other conditions. By this method the diseased tube could readily be removed, and there was no danger from hæmorrhage. After the pregnancy had reached two months and a half, the abdominal route was preferable. He believed that in no case should the life of the ovum be a matter of consideration; the cases all demanded radical treatment like malignant disease. If the diagnosis in a given case was uncertain, a vaginal incision could be made to determine the condition.

Dr. NEWMAN, of Chicago, did not believe that the vaginal method of treating tubal pregnancy should be unequivocally condemned, as there were certain cases in which it was proper and safe.

Dr. HARRIS, of Paterson, N. J., regretted that the details of the cases reported by the reader should not have been given with greater comprehensiveness.

Dr. FORD agreed that the method which he advocated was also suitable for infectious hæmatocele. Most of the cases in his series were of very early tubal pregnancy. Gauze packing and drainage might result in infection, as had been urged in the discussion, but the important fact was that all his patients had recovered.

THE IMMEDIATE AND REMOTE RESULTS OF SO CALLED CONSERVATIVE OPERATIONS ON THE UTERINE APPENDAGES.

A Review of the Surgery of the Female Pelvic Organs.—Dr. GORDON, of Portland, Me., believed that true conservatism was that which had for its object the cure of the patient, no matter how many organs might be sacrificed. He reviewed briefly the surgery of twenty-five years ago, paying special attention to the work and influence of Battey. There were many at that time who injudiciously removed ovaries, owing to erroneous teaching. In cases in which the ovaries were properly removed the mistake was often made of retaining the uterus. In the reader's belief the uterus should always be removed when the annexa were removed. He was conservative enough to believe that it was often wise to retain an ovary or part of an ovary, that menstruation might continue. The work of Dudley and Polk in this direction had been extensive, but had not always been followed by desirable results. In many of the cases disease in the portion which was retained rendered the woman more uncomfortable than she had been at first. It was his belief that Battey's operation had done more harm than good, and he was inclined to think the same was true with reference to conservative resections of the ovary. The latter should not be per-

formed unless there was a reasonable prospect that the portion retained was perfectly healthy.

The Immediate Results of Conservative Measures.—Dr. H. ROBB, of Cleveland, thought that in a small percentage of cases a secondary operation would be necessary. In exceptional instances women were made worse on account of accidental infection. In conservative work the possibility of a subsequent operation should always be stated. The possible future in women with diseased generative organs was not of so great importance as health. His plan was to remove purulent tubes as radically as possible, but he saved a portion of a suppurating ovary if it could be done with safety.

In the cases analyzed in his work there were 119 in which infection had followed labor or abortion, in 99 there had been gonorrhœa, both ovaries were preserved in 78, and partially in 10. The right ovary was entirely retained in 127 and partially in 38. The left was retained in 122 and partially in 28. Of 400 cases, 96 were suppurative, and the gonococcus was commonly found in them.

Conservative Operations.—Dr. J. M. BALDY, of Philadelphia, did not believe in saving as much tissue as possible if organs or parts of organs were unsound and diseased. Common sense should regulate surgical procedures, and he would regard an organ as diseased or not diseased, and treat it accordingly. The immediate results of an operation might be very different from the final results. The mental condition of patients must always be considered in estimating the effect of an operation. It should not be forgotten that there frequently developed on ovaries cysts which were of no pathological importance. He was a believer in exploratory operations, and thought they often accomplished as great benefit as radical operations. As he reviewed the results of so called conservative work, he would be bound to express the opinion that they had proved fallacious or futile. He did not believe in the existence of an internal secretion of the ovary; it had not been proved. If an ovary required any operation at all, it should be removed entirely. Ovaries should be saved only when the desire or the necessity for offspring was urgent. If a woman came to a gynæcologist for relief, she was entitled to get it, irrespective of any theories concerning her generative organs.

Facts and Figures of End Results in One Hundred Cases of Conservative Operations.—Dr. MANTON, of Detroit, included in this series only those cases in which diseased tissue or apparently diseased tissue was removed from organs. His rule had been to retain the ovaries or a portion of them in all cases in which it seemed essential to the welfare of the woman that they should be retained. He believed that in ten per cent. of all operations upon the ovaries it was possible to preserve a portion of them. The results in his cases had been eminently satisfactory. Two thirds of the cases had been under observation from five to six years. In fourteen per cent. of the cases pregnancy had occurred. His conclusion was that conservative surgery of the ovaries was more desirable than total ablation in all possible cases during the childbearing period.

Dr. DÜHRSSEN thought the results of conservative surgery upon the ovaries would be good in cases in which all the diseased tissue was removed. Subsequent treatment in some of the cases was necessary and beneficial. The pain which remained after an operation in certain instances might be due to the portions which had been retained, to the omentum, etc. It was a good rule to retain one of the ovaries whenever it was possible.

Dr. HENROTIN, of Chicago, expressed the opinion that thirty per cent. of those upon whom conservative operations were performed remained uncured. If the conservative operation was to be performed, the vaginal route should be preferred, unless it was too small, as would often be the case in the young and unmarried. The vaginal route also would give a higher mortality than the abdominal.

Dr. GOFFE, of New York, had been greatly impressed by the statistics and cogent reasoning of Dr. Manton's paper. If it was true that many cases in which conservative operations were performed were not cured, it was also true that many cases were not cured in which other methods of operation were selected.

Dr. HARRIS, of Paterson, N. J., had observed that menstruation remained in ninety-five per cent. of the women upon whom he had operated for pyosalpinx, and in many cases dysmenorrhœa was not cured by the surgical measures. It had sometimes been necessary for him to perform a secondary operation on the diseased stump of a tube. He confessed his inability to decide from the general appearance of an ovary whether it was sound or diseased.

Dr. PETERSON, of Ann Arbor, Mich., had not discovered that the retention of the ovaries after the removal of fibroid tumors of the uterus was productive of any great benefit to his patients; in fact, the reports which he had received had not been encouraging. The distinction of sound from diseased ovaries was not easy, and it had often occurred to him to receive a pathologist's report that the ovaries which had been submitted to him were normal.

Dr. STONE, of Washington, had not been successful in curing dysmenorrhœa and other troubles by the removal of portions of ovaries. The only advantage he had discovered in such a procedure, performed through the vagina, was the avoidance of the abdominal scar.

Dr. BAKER, of Boston, narrated a case in which one of the ovaries was retained and a successful twin pregnancy resulted.

Dr. NEWMAN, of Chicago, narrated a case in which the result had been remarkably good. The degree of conservatism observed in any given case should be governed by the conditions in that case.

Dr. GORDON, of Portland, Me., expressed with positiveness his opinion that in every case in which the annexa were removed the uterus should be removed also. The only exception to this rule would be in very young women with myomata. In such cases myomectomy alone might be sufficient.

THE TREATMENT OF VESICAL FISTULÆ.

The Technique of the Repair of Large Vesicovaginal Fistulæ.—Dr. W. S. STONE, of New York, remarked that cases of this lesion were now of rare occurrence. No new principle was enunciated; the pioneers in this department of surgery understood the technique perfectly. In very extensive fistulæ, in which the entire base of the bladder might be absent and more or less of the urethra, the technical difficulties were always very great, several operations being usually necessary to effect a cure. The advances that had been made consisted in the demonstration that the older methods of technique are not indispensable. Silver wire was no longer a necessity for suture material, nor are the Sims position, speculum, and catheter essential. Many operators now used methods which were not used by the early operators. Two cases which were reported by the reader illustrated extensive injury to the bladder and vaginal wall, including almost the entire urethra. Both cases showed the necessity for free dissection, the bladder being entirely freed from the vaginal wall, and each being repaired separately. The incision preparatory to the dissection was in the vaginal wall posterior to the fistulous opening. The bladder was so loosened by this procedure that tension did not occur after the passage of the sutures. In both cases a second operation was deemed essential, but this was

followed by recovery and complete return of functional power.

Vesicovaginal and Vesicouterine Fistulæ.—Dr. I. S. STONE, of Washington, narrated the history of two very extensive fistulæ. A healthy condition of the tissues to be united was desirable, and freedom as far as possible from friable and badly nourished scar tissue. Freedom from tension must also be observed, otherwise the sutures cut out, which was a matter of common experience. The remedy for these objections was found in the ease with which the bladder might be liberated from the uterus and vagina by dissection. The openings of the ureters must of course be regarded in the dissection, and they must retain their normal relation to each other, as far as possible. The wounds in the bladder and vagina should be closed separately, the edges being united with catgut. The loss of tissue in the vagina might be met by combining the uterus with the vagina, a device which had occasionally been employed by the older operators.

The Abdominal Extraperitoneal and Abdominal Transperitoneal Operations.—Dr. KELLY, of Baltimore, stated that these operations were more difficult and the vaginal outlet, to gain more working space. In the bad cases in which an operation was performed through the vagina he sometimes made an incision at the vaginal outlet, to gain more working space. In some cases he found it advantageous to operate with the patient lying upon her face, and in others in the knee chest position. In either of these positions the separation of the bladder from the vagina was not difficult. In exceptional cases it was necessary to operate through an abdominal incision. The fundus of the bladder was then opened, and through this opening sutures were passed through the edges of the fistula, which might be inaccessible by any other avenue of approach. A case was narrated in which, owing to abundance of scar tissue, an extensive and very irregular incision was necessary in order to reach the fistula. It was successfully closed and also the incision in the bladder by which it was reached. This method of operating enabled one to treat inflammatory disease of the pelvic generative organs at the same time that the fistula was treated.

Dr. NEWMAN, of Chicago, spoke of a very bad fistula which he had been able to cure, and also cure the defect in the uterus, by loosening the uterine attachments and closing it in throughout the entire length of the floor of the bladder and the urethra as well.

Shortening the Round Ligaments Within the Inguinal Canals Through a Single Suprapubic Transverse or Median Longitudinal Incision.—Dr. PETERSON, of Ann Arbor, Mich., had found Alexander's operation very satisfactory in the majority of cases. He had rarely seen pain in the bladder as a consequence, and never has he seen it produce dystocia. Its disadvantages were that it was effective only when the uterus was movable, and, the diagnosis of adhesions about the uterus being sometimes practically impossible, unlooked for difficulty might arise in performing what was supposed to be a simple procedure. It was sometimes followed by pain and discomfort, and it presented by reason of the two incisions, a double chance of suppuration.

These objections were remedied by operating through a median or transverse abdominal incision three inches in length, the abdomen being opened and the ligaments shortened in the inguinal canals, which were easily uncovered. Care should be exercised in opening the canals to avoid opening the bladder. While the abdomen was open the appendages should be examined and operated upon if necessary. Care should also be observed to expose and protect the ilioinguinal nerve, and the cervix should be pressed backward by the finger of an assistant in the vagina to prevent the retroversion which sometimes followed undue tension upon the round ligaments. The ligament in the canal was looped and thus shortened by a mattress catgut suture, which remained buried, and the abdominal incision was then closed by tier sutures to prevent accumulation of serum in the wound.

Dr. EDEBOHLS, of New York, had found nothing better than the Alexander operation for uncomplicated retroversion, and it was also effective in many cases which were complicated. He had frequently made use of a transverse incision, making it semicircular instead of straight and dissecting up the flap. He thought the median incision of the fascia the weak point in the proposed operation. By putting the finger in the external ring one could trace it to its origin in the uterus and so determine its condition. He thought there was no danger of suppuration after the Alexander operation if proper care was observed.

Dr. WATKINS, of Chicago, preferred the longitudinal median incision for shortening the round ligaments, as it gave one an excellent opportunity to determine the condition of all the pelvic organs. He preferred also to avoid stripping the ligament of its peritonæum, as it was weakened thereby. If prolapse was present in a given case, it should be remedied together with the retroflexion. He favored a procedure in which the ligaments were shortened by securing them to the posterior aspect of the uterus.

Dr. GORDON, of Portland, Me., had abandoned the Alexander operation. Alexander himself had told him he preferred the Gilliam operation, in which there was a longitudinal incision, the ligaments being looped on either side.

Dr. NEWMAN, of Chicago, expressed a preference for the operation described by Bennett, of Chicago, in which there was a longitudinal median incision, the ligaments being pulled up and secured in the median line.

Dr. NOBLE, of Philadelphia, thought it unfair to compare Alexander's operation with those which were suitable for cases in which there were complications. He believed in using any variety of operation which the conditions called for. Vesical irritation and uterine prolapse, if present, should be included in the proposed field of operation.

Dr. MANN, of Buffalo, agreed with those who had several methods of operation at their command to meet the given conditions. He preferred the Alexander operation in cases which were uncomplicated, but if there were adhesions, he opened Douglas's cul de sac, broke up the adhesions, and then did Alexanders' operation.

Dr. DÜHRSSEN considered Dr. Peterson's procedures similar to that which had been advocated in Germany by Küstner and Pfannenstiel, though in the latter an incision was made only through the fascia. His own preference was for an operation through an anterior vaginal incision, by means of which he could treat other conditions in addition to retroflexion, should such treatment be necessary.

A Third Case of Renal Decapsulation for Puerperal Eclampsia.—Dr. EDEBOHLS, of New York, had operated in this case soon after labor had begun. The patient was under chloroform narcosis and in collapse. The kidneys were the large kidneys of acute Bright's disease, and both were decapsulated. There had been several convulsions prior to the operation, one occurred during its performance, and there were two after it had been concluded. The patient became conscious after twenty-four hours, there was incontinence of urine and fæces which continued for four days. In twenty-three days she was well. Details were given of the solids in her urine from the day before the operation to the tenth day after. At the present time, a year after the operation, she was well, and in the eighth month of another pregnancy.

The reader offered this and his previous cases as an argument that forced delivery was no longer the sole resource in eclampsia. When this condition occurred in the early months of pregnancy, great improvement resulted from the performance of the reader's operation. He had operated in four cases of this character, with great benefit to the mothers.

Dr. Edgar, of New York, stated that any suggestion concerning treatment in the present confused state of the pathology of eclampsia should be listened to. There were now two well recognized clinical types of eclampsia peculiar to pregnancy, the hepatic and the nephritic. The mortality in the former was about 100 per cent.; in the latter it was much lower. The mortality was highest antepartum, then intrapartum, and lowest postpartum. Zweifel had shown by statistics and tables that the more severe the interference during eclampsia, the higher the rate of mortality. Rider had reached similar conclusions from a different line of argument. The best results had been obtained by emptying the uterus early in the history of eclampsia and paying careful attention to the condition of the bowels, the skin, etc.

Dr. Dührssen quoted Zweifel as an advocate of his (Dührssen's) methods of cervical incisions and vaginal Cæsarean section in the treatment of eclampsia on the ground that they were mild and suitable methods.

Hypernephroma.—Dr. Bovée, of Washington, mentioned as some of the symptoms attending this condition, hæmaturia, casts, and pus in the urine. The diagnosis was never a positive one. The condition was to be distinguished from tuberculosis and pyonephrosis. Since glycogen had been determined to be one of the chemical elements of the tumor, the determination of this substance would distinguish hypernephroma from other tumors. It had a clinical history similar to that of other suprarenal tumors. The prognosis was good except in the malignant variety of the tumor.

The reader's conclusion was that all renal tumors should be removed. He objected to the transperitoneal route of approach to the tumor, preferring instead the extraperitoneal route, which involved less manipulation and less injury to the tumor and its contiguous structures.

Dr. Edebohls called attention to the frequency with which aberrant tissue was found in the suprarenal area. He had observed three cases of such a character.

Dr. Polk advised exploratory operations as early as possible in the course of neoplasms of the kidney, which are of doubtful character. He also spoke of the advantages of the transverse incision in approaching the kidney.

Dr. Bovée thought the importance of the subject was very great, and urged the members of the society to be on the lookout for hypernephroma, which was the commonest form of renal tumor. Many tumors which were formerly believed to originate from kidney structure were now known to originate from islands of suprarenal tissue included in the kidney. Such deposits of renal tissue were common throughout the genitourinary tract, and, though usually benign, might become malignant. They should be removed as soon as symptoms arose.

Intramural Abscess in the Puerperal Uterus.—Dr. G. H. Noble, of Atlanta, Ga., had seen eight cases of this character, and eleven others had been reported. They had been successfully treated by incision and drainage. The number of abscesses in a given uterus varied. There might be but one, or there might be several. They were usually located on the posterior wall of the uterus, near the fundus, and were either subperitoneal or situated beneath the outer muscular fibres of the uterus. The infectious material which occasioned them probably passed through the wall of the uterus, locating at some point where the resisting power is defective. Expectant treatment in such cases was not usually productive of good results, while the mortality from hysterectomy was so high that it could not be advocated. The reader's method had been to treat this condition on general surgical principles. He opened the abdomen, determined the situation of the abscess, incised it freely, irrigated, packed the cavity with gauze, and brought the end of the gauze into the vagina through an incision in Douglas's cul de sac.

Dr. Watkins, of Chicago, believed that infection in the class of cases under discussion extended by way of the lymphatics. He disapproved entirely of the treatment of such cases by hysterectomy. If there was infection in a given case, the result would usually be fatal, whether the abscess was opened and the cavity drained or not. He would prefer to rely upon the assistance of Nature, as a rule, and to interfere as little as possible.

Dr. Polk, of New York, inferred from the reader's statement that the abscesses in question had formed after the acute stage of infection had passed, and that they probably occurred after the second or third week of the puerperium, when the most acute symptoms had subsided. If the uterus was left in the condition described by the reader, without treatment, prolonged illness would necessarily result. Hence an incision, as advocated, was the proper treatment, or hysterectomy if the conditions warranted it.

Dr. Krug, of New York, thought it extremely difficult to distinguish between general infection and local abscess. An examination of the blood should always be made in such cases, and if this revealed streptococcus infection, the result would almost certainly be a fatal one, otherwise recovery would probably take place. He believed that hysterectomy was of no value in such cases.

Dr. Noble stated that he had referred in his paper only to chronic conditions of infection, cases which had reached the third week of the puerperium or a later period. He admitted that the diagnosis was difficult, and he had usually made it by exclusion of other morbid conditions of the uterus. He thought it important that an incision be made through the abdomen the better to locate the abscess or abscesses. The abscess having been incised, the cavity could then be drained through an incision into the vagina.

Book Notices.

Physical Diagnosis, Including Diseases of the Thoracic and Abdominal Organs. A Manual for Students and Physicans. By Egbert Le Fevre, M. D., Professor of Clinical Medicine and Associate Professor of Therapeutics in the University and Bellevue Hospital Medical College. Second Edition. Thoroughly Revised and Enlarged. Illustrated with 102 Engravings and 16 Plates. Philadelphia: Lea Brothers and Company, 1906.

Dr. Le Fevre's volume in its second edition is likely to find even more favor than in its first. There is distinct evidence all through the book that the work is done by a teacher who has had large experience in demonstrating the various phenomena that constitute the basis of physical diagnosis and who knows how to present the material in a practical rather than a theoretical way. Very little that is new has been added to physical diagnosis of late years, and yet all the books on the subject have not for that reason been wasted. Practical teachers have succeeded in realizing just where difficulties lay and in obviating them. That is the characteristic of Dr. Le Fevre's book. Some of the illustrations in the present edition add not a little of value to the work. In general it is well above the standard of conventional manuals of physical diagnosis.

Helps and Hints in Nursing. By J. QUINTIN GRIFFITH, M. D., Ph. D. Family Edition. Philadelphia: The John C. Winston Co. Pp. 480.

The author offers this work to the public as a guide in time of sickness, in the care of infants, and in preserving health. At times it seems that he discusses topics that are not appropriate in such a work, as in the description of the relative value and modes of administration of ether and chloroform. The space given to these things might well be used in the sections on malaria and yellow fever, to describe measures to restrict mosquito propagation, a matter that is within the scope of lay activity. Alcohol is not referred to as an antidote in carbolic acid poisoning. In general the book is likely to prove helpful to those who wish to know what to do until the physician arrives.

Miscellany.

Poisonous Flasks.—Some brandy which had been left for a time in a silver flask was recently sent to the *Lancet* for examination. The flask had the silver hallmark upon it. The brandy had darkened considerably in color and contained a dark brown sediment, which on analysis proved to be copper combined with tannin. There was also a very distinct amount of copper in solution in the brandy, apparently in the form of acetate. These results suggested a few experiments, which ultimately proved that genuine old brandy dissolves in a short time a very distinct amount of copper, the copper so dissolved combining with the tannin to form a tannate of copper. When a few shillings were placed in some old brandy and the spirit was examined after a day or so, a distinct amount of copper was found in it. Spurious brandy, oddly enough, did not appear to dissolve any appreciable amount of copper from a silver coin, so it may be concluded that the action of old brandy is partly due to the acetic acid which it invariably contains, plain spirit being comparatively free from this acid. This view is supported by the fact that genuine Jamaica rum, which contains more acetic acid than does brandy, has a strong action on a silver coin, extracting very decided amounts of copper from it. Standard silver contains 7.5 per cent. of copper, and evidently this alloy is readily acted upon by old brandy; it would seem desirable, therefore, to abandon silver unless it is absolutely unalloyed as a material for the brandy flask. Rightly or wrongly, it is the custom of many people to carry a brandy flask with them as a kind of sheet anchor in the event of faintness overtaking them, or as an anodyne for colicky pains or other manifestation of digestive trouble. In the latter case the presence of copper in the brandy might easily aggravate the trouble, as salts of copper frequently act after the manner of a powerful irritant poison, causing pain in the stomach and spasms. The simple precaution easily suggests itself that brandy should not be kept in a metal container, but in glass.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending July 13, 1906:

Smallpox United States.

Places.	Date.	Cases.	Deaths.
California—Stockton	June 1-30	1	
Florida—Jacksonville	June 23-July 7	2	
Georgia—Augusta	June 25-July 9	6	
Illinois—Galesburg	June 23-July 7	27	1
Louisiana—New Orleans	June 23-July 7	12	2
Maine—Houlton	July 6	1	
Massachusetts—New Bedford	June 30-July 7	5	
Missouri—St. Louis	June 30-July 7	3	
Nebraska—Omaha	June 8-30	7	
New York—New York City	June 23-30	3	
Ohio—Cincinnati	June 29-July 6	1	
Oklahoma—Oklahoma City	June 8-July 7	19	1
Tennessee—Knoxville	June 23-30	1	imported
Tennessee—Memphis	June 23-July 7	5	
Wisconsin—Appleton	June 23-30	1	
Wisconsin—La Crosse	June 23-30	2	
Wisconsin—Milwaukee	June 29-July 7	1	
Smallpox—Insular.			
Philippine Islands—Manila	May 12-26	5	
Smallpox—Foreign.			
Africa—Cape Town	May 19-June 2	8	
Brazil—Rio de Janeiro	May 27-June 10	1	
Canada—Toronto	June 16-30	3	
France—Paris	June 16-23	13	
Gibraltar	June 10-24	5	1
Great Britain—Hull	June 16-23	1	
Great Britain—London	June 16-23	7	
India—Bombay	June 5-12		8
India—Calcutta	May 26-June 2		40
India—Karachi	June 3-10	10	3
India—Madras	June 2-8		2
India—Rangoon	May 26-June 2		12
Italy—General	June 14-21	14	
Russia—Odessa	June 9-23	15	1
Russia—St. Petersburg	June 2-16	8	4
Spain—Barcelona	June 10-20		5
Spain—Seville	May 1-31		53
Yellow Fever—Foreign.			
Costa Rica—Limon	June 23	1	
Cholera—Insular.			
Philippine Islands—Manila	May 12-26	4	4
Philippine Islands—Provinces	May 12-26	39	28
Cholera—Foreign.			
India—Bombay	June 5-12		21
India—Calcutta	May 26-June 2		41
India—Madras	June 2-8		2
India—Rangoon	May 26-June 2		2
Plague—Foreign.			
Brazil—Rio de Janeiro	May 27-June 3	1	1
Egypt—Alexandria	June 15-21	2	2
Egypt—Beni Souef Province	June 18	1	
Egypt—Garbeih	June 16	1	1
India—General	May 12-19	13,061	11,783
India—General	May 26-June 2	7,888	7,027
India—Bombay	June 5-12		106
India—Calcutta	May 26-June 2		57
India—Karachi	June 3-10	69	63
India—Rangoon	May 26-June 2		53
Peru—General	June 9	4	
Peru—Lima	June 2-9	1	

Public Health and Marine Hospital Service:

List of Changes of Station and Duties of Commissioned and Noncommissioned Officers of the Public Health and Marine Hospital Service, for the seven days ending July 11, 1906.

BROWN, F. L., Pharmacist. Relieved from duty at Pittsburgh, Pa., and directed to proceed to Baltimore, Md., reporting to the Medical Officer in Command for duty and assignment to quarters.

GIBSON, R. H., Pharmacist. Granted leave of absence for four days.

MCCONNELL, E. F., Acting Assistant Surgeon. Assigned to duty at Banes, Cuba.

MCKAY, M., Pharmacist. Relieved from duty at Washington, D. C., and directed to proceed to Savannah, Ga., via Cincinnati, Ohio, reporting to the Medical Officer for duty.

ROBERTS, N., Assistant Surgeon. Relieved from duty at Fort Stanton, N. M., and directed to report at the Bureau, Washington, D. C., for temporary duty in the Hygienic Laboratory.

RODMAN, J. C., Acting Assistant Surgeon. Granted leave of absence for ten days, from June 29, 1906.

ROSENAU, M. J., Passed Assistant Surgeon. Granted leave of absence for three days, from July 8, 1906, under paragraph 189 of the Regulations.

SAWTELLE, N. W., Surgeon. Granted leave of absence for two months, from July 5, 1906, on account of sickness.

SCHERESCHEWSKY, J. W., Passed Assistant Surgeon. Granted leave of absence for two days, from June 29, 1906, under paragraph 191 of the Regulations.

SMITH, F. C., Assistant Surgeon. Granted leave of absence for seven days.

SMYTH, F. R., Acting Assistant Surgeon. Granted leave of absence for five days, from July 3, 1906.

STANSFIELD, H. A., Passed Assistant Surgeon. Granted leave of absence for one day, July 4, 1906, under paragraph 191 of the Regulations.

STUART, A. F., Acting Assistant Surgeon. Granted leave of absence for twenty-one days, from July 9, 1906.

WALKER, T. D., Acting Assistant Surgeon. Leave of absence granted Acting Assistant Surgeon Walker for eight days from June 8, 1906, amended to read six days from June 5, 1906.

Army Intelligence:

Official list of changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, for the week ending July 14, 1906:

CARROLL, JAMES, First Lieutenant and Assistant Surgeon, detailed to represent the Medical Department of the Army at the meeting of the British Medical Association at Toronto, Canada, August 21 to 25, 1906.

COX, WALTER, Captain and Assistant Surgeon. Left Fort Reno, O. T., *en route* to Fort Riley, Kansas, with Second Battalion, Thirtieth Infantry.

DUTCHER, B. H., and WOODBURY, F. T., Captains and Assistant Surgeons. Left San Francisco, Cal., on the *Sheridan, en route* to Manila, P. I.

EDGER, B. J., JR., Captain and Assistant Surgeon. Reports arrival at Fort Sam Houston, Texas, on detached duty, from Fort Brown, Texas.

FULLER, LEIGH A., Captain and Assistant Surgeon. Granted fourteen days' leave of absence, to take effect upon his being relieved from duty at Fort Clark, Texas.

GANDY, CHARLES M., Major and Surgeon. In addition to his present duties is detailed as Professor of Military Hygiene at the United States Military Academy, West Point.

JONES, PERCY L., Captain and Assistant Surgeon. Left Fort Preble, Me., *en route* to Fort Ethan Allen, Vt., for duty with artillery from that post at Mount Gretna, Pa.

KNEEDELER, WILLIAM L., Major and Surgeon. Retired from active service on account of disability incident thereto.

MARROW, CHARLES E., Captain and Assistant Surgeon. Left Fort Monroe, Va., *en route* to Fort Meyer, Va., for duty with squadron Thirteenth Cavalry, Camp of Instruction, Mount Gretna, Pa.

MASON, CHARLES F., Major and Surgeon. Left Surgeon General's Office, Washington, D. C., on thirty days' leave of absence.

MCCAW, W. D., Major and Surgeon. Left Surgeon General's Office, on leave of absence to July 15, 1906.

SCOTT, GEORGE H., First Lieutenant and Assistant Surgeon. Leave of absence extended one month.

SMART, ROBERT, First Lieutenant and Assistant Surgeon. Left Fort Meyer, Va., *en route* to Chickamauga Park, Ga., for duty.

WAKEMAN, WILLIAM J., Major and Surgeon. Left Fort Thomas, Ky., with troops *en route* to Camp of Instruction, Fort Benjamin Harrison, Indiana.

WEBBER, HENRY A., Captain and Assistant Surgeon. Left Fort Banks, Mass., *en route* to Plattsburg Barracks, N. Y., for duty with the Fifth Infantry at Mount Gretna, Pa.

WHITCOMB, C. C., First Lieutenant and Assistant Surgeon. Left Fort McKinley, Me., *en route* to Fort Ethan Allen, Vt., for duty with troops to and at Mount Gretna, Pa.

WHITMORE, E. R., First Lieutenant and Assistant Surgeon. Left Fort Jay, N. Y., with troops for duty at Mount Gretna, Pa.

Navy Intelligence:

Official List of Changes in the Medical Corps, United States Navy, for the week ending July 14, 1906:

BROWNELL, C. DEW., Surgeon. Detached from Naval Recruiting Station, Providence, R. I., and ordered to Naval Training Station, Newport, R. I., and to additional duty on the *Constellation*.

BUCHER, W. H., Surgeon. Detached from Naval Medical School and ordered to Naval Recruiting Station, Providence, R. I.

BUTTS, HEBER, Assistant Surgeon. Ordered to the United States Naval Academy, Annapolis, Md.

DORSEY, B. H., Assistant Surgeon. Detached from United States R. S. *Lancaster* and ordered to examination for promotion, July 16, 1906, then to await orders.

GUEST, M. S., Surgeon. Detached from Naval Training Station, Newport, R. I., and ordered to the U. S. S. *Tennessee*.

HOEHLING, A. A., Medical Director (retired). Detached from Naval Medical Examining Board, Washington, D. C., and ordered to his home.

IDEN, J. H., Passed Assistant Surgeon. Assigned to duty with marines at Camp Elliott, Panama.

PAYNE, J. H., JR., Passed Assistant Surgeon. Detached from the U. S. S. *Nashville*, when out of commission, ordered home and to await orders.

PEASE, T. M., Assistant Surgeon. Ordered to examination for promotion, July 16, 1906, and then to United States R. S. *Hancock*.

RAISON, T. W., Assistant Surgeon. Ordered to the United States Naval Hospital, Norfolk, Va.

SMITH, H. L., Acting Assistant Surgeon. Appointed acting assistant surgeon in the Navy, from July 5, 1906.

SMITH, W. B., Assistant Surgeon. Detached from United States R. S. *Hancock* and to examination for promotion, July 16, 1906, and then to await orders.

WISE, A. H., Acting Assistant Surgeon. Detached from Navy Yard, Washington, D. C., ordered home, and granted leave until expiration of appointment, July 14, 1906.

Births, Marriages, and Deaths.

Married.

ADAMS—ROSE.—In Mechanicsville, N. Y., on July 4th, Dr. Frank Adams, of Mechanicsville, and Miss Nettie A. Rose.

EBERLE—EVERITT.—In Brooklyn, N. Y., on July 3rd, Dr. Edward Eberle, of Brooklyn, N. Y., and Miss Lilly P. Everitt.

ROGERS—HUMANN.—In Berkley, N. Y., on July 4th, Dr. Charles G. Rogers, of Syracuse, N. Y., and Miss Rose Humann.

Deaths.

BALDINGER.—In Cleveland, Ohio, on Monday, July 2nd, Dr. Arthur F. Baldinger.

BECK.—In Baltimore, Maryland, on Friday, July 6th, Dr. William H. Beck.

BEMISS.—In Newark, New Jersey, on Wednesday, July 11th, Dr. Ezra D. Bemiss, aged forty-three years.

GAREY.—In New Albany, Indiana, on Sunday, July 8th, Dr. Dumont Gary, aged fifty-one years.

GRIMES.—In Winston Place, Cincinnati, Ohio, on Monday, July 9th, Dr. J. F. Grimes.

HAMILTON.—In Prince George County, Virginia, on Saturday, June 30th, Dr. Summerfield Hamilton, aged eighty-one years.

HOUTZ.—In Omaha, Nebraska, on Sunday, July 1st, Dr. William G. Houtz.

HOWELL.—In Avoca, N. Y., on Tuesday, July 9th, Dr. Joseph Howell.

MACDONALD.—In Bay City, Michigan, on Saturday, June 31st, Dr. Seth E. Macdonald, aged eighty-five years.

MCMAHON.—In Philadelphia, on Thursday, July 5th, Dr. Walter G. McMahon.

RUSSEL.—In Concord, New Hampshire, on Sunday, July 1st, Dr. Julia Wallace Russell, aged sixty-three years.

SALTER.—In Chicago, on Sunday, July 1st, Dr. George B Salter.

SPOONER.—In Florida, on Saturday, July 7th, Dr. Henry I. Spooner.

TINKER.—In Westhampton, Long Island, N. Y., on Wednesday, July 11th, Dr. Charles A. Tinker, aged fifty-one years.

TOWER.—In New York, on Saturday, July 8th, Dr. Charles G. Tower.

WALTER.—In Farmersville, Pennsylvania, Dr. Barnet C. Walter, aged seventy-four years.

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Original Communications.

THE OCULAR FACTORS IN THE ÆTIOLOGY OF SPINAL CURVATURES.*

BY H. AUGUSTUS WILSON, M. D.,

Philadelphia,

Professor of Orthopædic Surgery in the Jefferson Medical College.

The object of this paper is to open a discussion upon the relations that exist between certain forms of acquired spinal distortions and postures of the head.

It is apparent that when ultimate changes in the bony and ligamentous structures of the spine have occurred complete restoration to normal function cannot be obtained.

The more extensive the bony changes the less prospect is there for betterment. Remedial measures that are employed are at best palliative. The increased flexibility of the spine and improvement of the action of the intrinsic spinal muscles arrests the progress of the deformity and not infrequently secures such improved conditions that a cure is spoken of. Cure is not necessarily the establishment of normal structure and function, but is considered such when the resulting condition is free from morbid tendencies, and there is obtained the nearest possible approach to the normal.

In view of the generally unsatisfactory results of the most approved forms of treatment of scoliosis with attendant bony changes much time has been devoted to the consideration of prophylaxis, and in this field the greatest advances have been made in recent years. It is an accepted axiom that any prolonged alteration of the normal relations that exist between the axis of the pelvis and the axis of the shoulders will inevitably produce scoliosis. This might very properly include with alterations of the axis of the shoulders any persistent alteration of the position of the head. It is a matter of observation that torticollis will cause scoliosis without primarily altering the relative positions of the shoulders. The same obtains in the presence of unilateral deafness, adenoids, and other conditions that tend to tilt the head. Therefore, it seems proper to consider in detail every known or possible factor in the production of persistent alterations of the position of the head that would induce an ultimate scoliosis. For the purposes of this short paper and to concentrate the discussion it will confine attention to possible effects of acquired postures of the head in using the eyes, whether occurring alone or in conjunction with other recognized causes of scoliosis.

The difficulties that frequently exist in definitely determining the relative importance of causes in producing effects is illustrated by the following cases:

Gould thus refers to a case that was sent by him to me. ("Torticollis and Spinal Curvature due to Eye Strain." *American Medicine,* March 26, 1904.)

"CASE I.—A young man (aged fourteen years) was brought to me in 1900 by his father. He had evident symptoms of eyestrain. I found the following error of refraction: R. — S. O. 25 + C. 5.25 ax. 75°; L. + S. O. 50 + C. 6.00 ax. 75°. This ametropia was properly corrected. The father incidentally remarked that the boy had spinal curvature. I had noticed that he had a malposition of the head, but I was too stupid to recognize its significance. . . . Dr. H. Augustus Wilson was consulted, verified the diagnosis of spinal curvature, and by proper treatment ,the spinal abnormality and malposition of the head have entirely disappeared. There is no doubt as to the truth of the theory in this case, and almost none, also, as to the fact that without the correction of the ametropia there would not have been so speedy a cure of the spinal malcurvature."

My notes of the case are:

The patient delivers newspapers, he starts out with a very heavy bundle, which he carries under his left arm so as to have the right hand free. Examination shows a functional scoliosis in one long curve extending from pelvis to head. There is no muscular rigidity; no muscular inability, but rather a muscular insufficiency as to endurance. Spine flexible in all normal motions. He can sit erect for a short time, then droops. Stoop shoulders; head generally inclines to the right. There does not appear to be any evidence of organic changes. Wears correction for ametropia given by Gould. Discharged in two months. Cured.

Without knowledge of the ocular factor one would naturally class this case as an occupation scoliosis. Carrying a heavy bundle of newspapers under his left arm, while the right hand was used to roll and throw the papers, gave rather excessive exercise to the right side, while the load upon the left side and its consequent inactivity would seem to have been an exciting cause.

The constant use of the correction glasses and the short resort to physical culture produced a rapid restoration of the normal posture.

CASE II.—A girl, fourteen year old, was sent to me by Dr. W. H. McCurdy three years after the deformity was first observed by her parents. She presented the usual type of S scoliosis with rigidity in deformed posture. The dorsal rotation was pronounced with the concavity to the left. The head was persistently carried to the right. There was no asymmetry of legs.

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She has been wearing spectacles that she obtained from a travelling salesman. She suffers from typical migraine. Was sent to Dr. Gould, who reported that the following formula was prescribed: R. + S. 0.87 + C. 62 ax. 75°; L. + S. 0.50 + C. 1.25 ax. 90°.

The question will naturally arise as to whether it was a coincidence that this patient had scoliosis and a peculiar condition of refraction. It appears that serious bony changes had occurred, and the deformity, rapidly increasing, demanded attention, but this was determined upon at so late a period as to prevent entire correction. The natural inference is that the error of refraction had existed prior to the development of the scoliosis and had at least some bearing upon the progress of the condition, from the beginning functional head tilting to functional scoliosis, and to the ultimate bony changes, in which latter condition I first saw the patient.

In view of the favorable progress that has been frequently observed in functional scoliosis where the astigmatism was discovered promptly it would seem to be rational to infer that if the error of refraction in Case II had been properly corrected earlier in life the associated functional scoliosis would have been prevented or corrected and the ultimate bone changes would not have occurred. In this individual patient the usual gymnastic and manipulative methods secured increased flexibility of the spine and greater muscular development and control, but the head continued to tilt to the right until the error of refraction was corrected. After wearing the correction glasses for several days the head assumed a more nearly correct posture which I felt justified in ascribing to the removal of the astigmatic condition rather than to the other corrective measures that I had employed.

Since the first mentioned patient was under our conjoint care in 1900 Dr. Gould has devoted time and study to the ocular phenomena that would induce head tilting, and has written extensively upon the subject. Just as always occurs in the advancing of new ideas and theories he has received both adverse criticism as well as commendation. One criticism was that he put the cart before the horse, that the scoliosis in reality caused the head tilting and quite possibly the peculiar axis of astigmatism. Be that as it may, the facts as determined by Gould have occurred sufficiently often to cease being considered as mere coincidences, and must perforce assume place as among the many other real and demonstrable causes of scoliosis. The discussion from the orthopædic standpoint will aid in determining its importance.

It has been my good fortune to have been associated with Dr. G. M. Gould in the examination of the spines of seventeen of the patients in which he has observed an apparent permanancy in departures from the erect posture of the head due to ocular conditions.

I have delayed presenting the subject from the orthopædic standpoint until a sufficient experience should have confirmed my earlier impressions. I now refer to the several papers that Dr. Gould has published bearing upon the subject of this paper.

1. Torticollis and Spinal Curvature Due to Eye Strain (*American Medicine*, March 26, 1904).
2. Malposition of the Head (Torticollis Canted or Tilted Head) With Resultant Ill Health, Spinal Curvature, etc., Due to Eye Strain (*American Medicine*, May 21, 1904).
3. Dextrality and Sinistrality (*Popular Science Monthly*, August, 1904).
4. The Pathological Results of Dextrocularity and Sinistrocularity (*Ophthalmology*, October, 1904).
5. The Optic and Ocular Factors in the Ætiology of the Scoliosis of School Children (*American Medicine*, April 8, 1905).
6. Visual Function the Cause of Slanted Handwriting; Its Relation to School Hygiene, School Desks, Malposture, Spinal Curvature, and Myopia (*Medical Record*, April 22, 1905).

From these six papers by Gould the following facts and explanations are deducible:

It can be demonstrated upon any normal person that a certain astigmatic (glass) lens placed so that the artificial astigmatism produced shall be at axis 75°, will obscure vision unless the head is tilted 15° to the right, in order to bring vertical objects into clearer vision. The letters of the alphabet, trees, houses, etc., are vertical and must be seen clearly to make vision and action accurate.

If a patient has axis 75° astigmatism, because of the curvature of his cornea, he will be compelled to tilt his head to the right to see clearly. There are various other axes of astigmatism that will necessitate head tilting to the right.

The above mentioned truths depend upon two other factors: 1. Right handedness. 2. The preservation of an equal or better acuteness of vision of the right eye.

If the patient is left handed he is also left eyed, and the left eye then becomes the chief factor in the production of the head tilting. If the axis in the right eye in the dextral (right handed and right eyed) is from 60° to 85° or if it is from 160° to 175° the tilting must be to the right; if the axes are from 95° to 120° or from 5° to 25° the tilting must be to the left.

If in the sinistral (left handed and left eyed) the axes in the *dominant* or left eye, are those last given, the results will be the same. All this holds, except in so called symmetrical axes, regardless of what the axes of the nondominant eye may be. But if both axes are the same, the head tilting becomes more pronounced, continuous, and absolute.

2. In the dextral, the usual writing posture, assumed, taught, or permitted, the body is curved to the left and the head or neck more curved, rotated to the right, and spirally upward (or chin upward and to the right), so that the cervical portion of the vertebral column has three abnormal positions, curves, or twists; viz., a curve with convexity to the right, a rotation on itself, and a spiral twist. (In the sinistral all this is reversed, as the writing is done with the left hand.)

These vicious postures are of purely ocular origin, and are compelled in order to get the field of vision about the penpoint in clear sight: 1. Of the right eye, i. e., to get the axis of vision of the right eye so placed that the writing thumb, forefinger and the penpoint do not obstruct the view. 2. To get the axis of vision of the left eye so placed that the bridge of the writer's nose does not obstruct the view of his left eye, (vice versa, of course, in the sinistral writer.)

With the exception of the infectious diseases (not always then!) the traumatic, and a few unimportant others, all organic disease is of functional origin. Gould's theory, therefore, is that the abnormal postural function of 1. Head tilting, due directly to some peculiar axis of astigmatism, and 2, a double

spinal curve (lateral and forward)coupled with a three-fold cervical curve (convexity to the right, on itself, as a spiral slant) we have the sufficient and permanently acting postural or functional origins of the vast majority of subsequent organic scoliosis.

Gould bases his thesis upon the absolute demonstration of the mechanics of the spinal movement and action summarized by Lovett in the statement that there is rotation of the vertebræ whenever any part of the column is bent in any way not directly anterior or posterior. The error of many investigators of spinal column mechanics is that they have apparently ignored the fact that the cervical vertebræ are a part of the spinal column. They have carried out their experiments in many instances on the cadaver, etc., with the head and neck cut off. With any lateral bending this vertebral rotation necessarily produces distortion or lateral curvature. Also with any lateral curvature there must be a rotation which is more or less manifested by a protrusion posteriorly of the walls of the chest of one side and of the opposite side anteriorly.

From the existence of head tilting alone, or, certainly with the diagnosis of the peculiar axis of astigmatism which must produce it, Gould has stated in advance of examination of the back that the patient had lateral curvation, inelastic curvature of the vertebral column, or some morbid distortion of the back. In about fifty cases Gould says that he has never known his forecast to be found false when the back was exposed.

As the earliest of all signs, perhaps even before the functional curve is suspected, and certainly before it is demonstrable, Gould has found that there was associated with the head tilting and the peculiar astigmatism a lack of symmetrical lateral bending of the lumbar and lower dorsal vertebræ. That is, that the patient could bend further and more easily to one side than he could to the other, thus indicating the presence of unsuspected spinal irregularities, or abnormalities.

If all of the foregoing is true, and it certainly has confirmation in the seventeen cases that I have examined, and if it is also true as stated that 27 per cent. of all school children in Europe and America have lateral curvature of the spine, then there is hardly any other discovery in modern medicine of greater importance than this. Through a knowledge of its practical bearing Gould has many times urged that low errors of refraction produce more harmful eye strain than high ones and likewise he has stated that all low degrees of spinal distortions produce more suffering than high and organic ones; they are also a serious menace because they are overlooked while they are functional and often become organic before receiving proper attention.

The orthopædic surgeon rarely sees patients with scoliosis in the functional stage, but the cases are sent to him long after the organic changes have become established and complete restoration to normal condition is impossible. He must, perforce, confine himself to attempts at producing as close an approach to normal posture and function as possible. It is now accepted as a common experience that the vast majority of the cases of scoliosis that are taken to the orthopædic surgeon are those whose deformities have been first noticed by the dressmaker or the corsetmaker because of difficulties encountered in making the two sides of the patient symmetrical. It would seem to be a rational procedure to submit every child to a critical examination as to its functions of the spine, and eyes, etc., much in the same manner that parents have the dentists frequently examine the teeth. One rarely hears of a dentist who has found some departure from the normal advising delay with the assurance that the child will outgrow the condition, and yet there are a large number of diseases and deformities that are thus left to Nature, with the disastrous results too frequently observed by those into whose hands they finally are placed too late to prevent deformity, and often too late to correct resultant conditions.

In the prophylaxis of scoliosis there is a large field that must carry the investigator into the school life of children and the almost universally faulty postures whether induced by school furniture, or by erroneous positions in writing, or by the various errors of refraction that Gould has clearly demonstrated.

The therapeutics of the functional stages of spinal curvation should be:

1. To remedy any existing headtilting.

2. To stop the morbid writing posture by placing the paper opposite the right shoulder, when sitting squarely and upright before the desk, and to incline the desk leaf at an angle of at least 30°. The Japanese in their way of writing do this, and in addition they hold the writing brush so that both eyes can see the writing field about the point. It is most doubtful if they have anything like as high a proportion of scoliotics as have been observed in Europe and America.

3. The orthopædic surgeon should direct the use of such remedial measures as have been determined as best adapted to securing full normal function and reestablishing verticality. To accomplish the prevention of scoliosis the necessity for the early resort to the orthopædic surgeon should be strongly urged upon the general practitioner and parents.

Gould observes that up to the age of about twenty years it is often possible to cure functional lateral curvature by the use of proper correction glasses and the employment of suitable corrective measures applied to the spine and controlling muscles. When the patient is over twenty, he observes that doubt and difficulty will increase with each added year. Suffering and reflexes will cease whenever there have been such ligamentous and bony changes that strain on muscles will cease and compensation organically be established.

In the presence of eye strain and many other types of disease the rule of physiology is that no muscle or set of muscles can be innervated continuously for long. Whenever this too long innervation exists physiology passes into pathology, until, finally, functional passes into organic pathology.

It is not the purpose of this paper to cite selected cases to demonstrate their symptoms, signs, ocular or spinal conditions, although seventeen cases have been examined conjointly by Dr. Gould for their ocular defects and by me for their spinal conditions. Dr. Gould informs me that he has records of upwards of fifty cases including the seventeen that I have seen. I have found it to be a safe rule in all cases of scoliosis to have them examined as to their

eyes, and have found that it resulted in a report that was in accord with statements previously made. In two cases in young children I kept a careful watch over them but did not direct gymnastic or other remedial measures for a period of three months after they began to wear their correcting glasses. In both of these cases the correction of the head tilting by wearing the correction glasses enabled them to carry the head persistently in the erect posture thereby removing the predisposing cause of the previously existing functional scoliosis. In older patients it was always necessary to prescribe forms of gymnastic exercises and manipulations because of the alteration in the positions and action of the intrinsic muscles of the back and neck. In the patients who were beyond fifteen years of age distinct evidences of resulting bony changes made absolute correction impossible although the rigidity of the spine was largely removed and consequently greatly improved function was obtained.

1611 SPRUCE STREET.

THE FRONTIERS OF DEATH IN SURGERY AND THE QUESTION OF OPERATION IN EXTREMIS.

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The incessant progress of surgery, sanctioned by almost unhoped for success, has very greatly increased the indications for operation in imperative surgery. Certain cases which only a few years ago would have seemed hopeless are to-day operated upon, and the wonderful results obtained show that the interference was justified. It is not, unfortunately, always thus and all human power has its limits. There are patients who, when seen by the surgeon, represent organisms which are ruined and where all science loses its rights. The question of interfering in these cases is a difficult problem to solve, and in what is to follow I shall rapidly enumerate those affections which represent that class coming under the head of imperative surgery, after which I shall study those symptoms which will allow one to make a prognosis, and decide whether or not to operate, at the same time discussing certain conditions which relate to the general and constitutional condition of patients in general.

It would be impossible to enumerate all those diseases which end in an imperative operation, and I shall merely endeavor to classify as methodically as possibly those which most frequently come under daily observation. Numerous are the traumatisms which may necessitate an operation of extreme urgency, likewise conditions very nearly related in reality or in appearance to the approach of death. These we shall mention according to the anatomical region in which they occur. (1) Fractures of the base, or other parts of the skull, with or without wounds; bullet wounds of the cranium, more particularly of the orbit, mouth, or ear. (2) wounds of the neck involving large vessels, fractures and wounds of the larynx and trachea, with their always possible complication, œdema of the glottis, burns of the pharynx, œsophagus, and the stomach, with all their complications. (3) Closed traumatisms of the chest, and rupture of the lung; penetrating wounds of the lung and pleura; thoracoabdominal wounds; ruptures and wounds of the diaphragm, pericardium, and heart. (4) Contusions and wounds of the abdomen with all their serious complications; contusions, wounds, and ruptures of the liver and biliary tract, of the spleen or kidneys, mesentery, and intestine. (5) Traumatisms of the hypogastric region, and wounds or rupture of the bladder, rectum, and a pregnant or nonpregnant uterus. (6) And lastly traumatisms of the limbs, compound fractures, and extensive crushing.

Severe hæmorrhage, which so frequently endangers life, may be divided into two large classes, the first of which comprises external hæmorrhage. External loss of blood is produced by the most varied lesions and there is not a single region of the body which may not give rise to it. Among them, however, one should give a separate place to uterine hæmorrhage of any kind, whether due to placenta prævia, a retained placenta, either total or only a portion of it, or from some disease of the organ itself. To this same particular group belong secondary hæmorrhages following vaginal operations. The second class is composed of internal hæmorrhages, which may also result from different kinds of traumatism, whether some internal organ has been the recipient of an injury without any solution of continuity of the integuments, or on account of the very small proportions of the latter the blood is prevented from escaping outwardly, and flows into one of the internal cavities of the body. The extreme frequency and great importance of peritoneal inundation, due to a rupture of an extrauterine gestation sac should be mentioned here, and this same accident may also occur, although very rarely, from rupture of a gravid uterus.

Nervous shock which is the symptomatic ensemble of a very complex ætiology, is still another frequent consequence of major traumatisms, especially when the structures involved are the spinal colunm or the skull. It may also arise after traumatisms of the abdomen, or during the progress of peritoneal infections, and the peculiar aspect that it then assumes makes it a special form of shock, ordinarily termed abdominal.

The shaking up following major surgical operations, by acting in a manner as yet poorly elucidated, perhaps by reflex action on the nervous system and vascular apparatus, is still another very interesting variety of shock.

Infections are, with traumatisms, the most important class of affections which may result in the most serious outcome. It would be a difficult matter to enumerate all, but I would particularly mention, beside the most varied type of infection, infectious phlegmon of the neck, empyema of the pleural cavity, abscess of the liver, subphrenic, paranephritic, hypogastric, and iliac pus collections, urinary abscess, and so forth, representing a series of conditions which occupy a very important place in the history of imperative surgery.

Peritonitis, a disease of extreme gravity, represents a very large class of imperative interventions. Primary or secondary peritonitis, due to tuberculosis, the streptococcus, occasionally the pneumococcus; those which follow the extension of uterine or tubal infections from the rupture of their pockets of suppuration, the torsion of the pedicles of pelvic or

abdominal tumors, and above all the peritonitis resulting from appendicitis, from perforation of ulcer of the stomach or duodenum, peritonitis from intestinal perforation in typhoid fever, puerperal peritonitis, followed or not by generalized puerperal infection, are all conditions which usually require immediate action on the part of the surgeon. Including intestinal occlusion and strangulated hernia in the same class as peritonitis and the infections as we do, is because these accidents may give rise to peritoneal infection and, what is still worse, to stercoræmia.

In terminating, we would point out that the surgeon is often called upon to operate during the progress or at the end of various cachexiæ, whether they are the final termination of some diathesis, as for example diabetes, or both, from a diathesis and suppuration. These conditions should never be overlooked nor neglected when in the presence of an urgent operative case, and I shall revert to this subject again when speaking of the influence of diathetic diseases on the operative indications in imperative surgery.

Surgeons are frequently called upon to judge of the exact probability of an approaching end, and we all know what a very great interest both morally and from the standpoint of practice there is under these circumstances to determine whether or not the patient is already in articulo mortis. By this we mean the condition of absolute ruin of the organism which will shortly and surely be followed by death. If there was any symptomatic *ensemble*, as for instance exists in meningitis, the task would be very greatly simplified. But the approach of death is not a morbid entity, and as there is not one, but many ways in which it supervenes with a variable progress according to the diseases which afflict the patient, the symptomatic complex of the near end varies indefinitely.

Death does not take us all in the same way. Sometimes it strikes with a fearful brutality, at others with all the refinements of slow cruelty. Human beings do not all conduct themselves alike at its approach; some, tired of a useless struggle, give themselves up, while others hold out up to the very end an obstinate defense of their vitality, only giving up the combat after the coup de grace. No matter how complex and how different may be the group of signs indicative of approaching death, they can be divided into four classes, namely the general aspect of the patient, the condition of circulation and respiration, the condition of certain secretions, excretions, and lastly the apparent changes which have taken place in the functions of the nervous system. We shall now take up in detail each one of these four subjects and study the nature and prognostic value of the signs that each gives rise to.

The general aspect of a dying man is most striking, the indifference to everything surrounding him, and his unconsciousness of suffering. This is not a condition always present, because when speaking of the changes in the nervous system I shall show that this sign may be wanting, but it is the rule in a large majority of cases. The patient who is about to die is indifferent and insensible; within an hour he was occupied with those surrounding him, but suddenly he ceases in his lamentations and complaints; another who has been tortured by such localized pain that he was obliged to cry out, will suddenly become insensible to such an extent that pressure exercised upon the painful point does not appear to awaken the slightest sensation. These signs are certainly such as to render the prognosis fatal within a very short time.

Considering now the expression of the face it should be said that it cannot furnish us with any knowledge of an infallible prognostic value, but by carefully observing it an indefinite and vague impression may be gathered which, without giving one any exact clinical indication will, however, very frequently make the observing and educated practitioner suspect the approach of a fatal outcome. The widely opened eyes, sunken in that earthy colored face, present a strange fixity; the globes remain immovable, the eyelids likewise, the extreme dilatation of the pupil which no longer reacts to light, represent the death of sight. The nose, which is pinched, is cold, the nostrils vibrate feebly, although occasionally they move with great rapidity. The open mouth, whose withered lips are in contact with the dental arches, is half opened, and the lower jaw is agitated by a convulsive chewing movement. If one leans over this half opened mouth the breath comes to the observer's face like a weak current of cold air on account of the lowering of the temperature of the gases expelled during expiration; at the same time, the breath has a special fætid odor, quite similar to that of a room in which a cadaver has been kept. This peculiar cadaveric odor of the breath is a sign which never misleads; these unhealthy gusts precede the supreme breath, the last one which will be expired from the lips of the dying man. Such is the general aspect and expression of the dying; they realize an ensemble of a real prognostic value, and when encountered the surgeon should do away with all thought of operating, which would be useless, because, although he may be able to aid a threatened life, he cannot vanquish death which is already victorious.

We now come to the condition of the pulse and circulation, which give us most important signs. The pulse shows the condition of the heart and the circulation; it faithfully indicates the result of reciprocal influences which the great central motor and the peripheral capillaries exert upon each other. Now, if auscultation gives in a most precise way the nature and the degree of cardiac lesions, the pulse by its regularity and fullness indicates the degree of myocardiac tonicity and functional compensation. The pulse considered from the surgical standpoint presents three important characters, namely its frequency, amplitude, and rhythm, as well as the various modalities, according to which these three characters become combined, varying in infinite ways and multiple complexities. It is by a close analysis and an attentive examination that the surgeon will obtain the most important clinical knowledge of the case and the most decisive indications for interference.

Now, in point of fact, in each one of the conditions that have been mentioned as giving rise to cases of imperative operations, it is the pulse which will indicate the imminence of the danger and the nearness of a fatal issue. In the major traumatisms the pulse is usually small and very frequent, and the degree of these two characters measures the

gravity of the situation. But it is especially when the pulse is small and at the same time slow and weak that one may, when in presence of this symptomatic ensemble of the severest cerebral commotion, await the worst immediate consequences. These facts are applicable to cases of nervous shock upon which it is unnecessary to further insist. In hæmorrhage, and more especially when it is internal, the pulse is rapid, small, and will almost escape detection. The examining finger feels the shock of the beat less and less, and this depression, when it becomes progressive is of the gravest import, especially so if it continues after the use of injections of artificial serum.

We now come to those affections in which the prognostic value of the pulse attains its highest importance, namely, the various infections. These include the extensive class of peritonitis, which will be considered more fully further on. In localized infections the pulse and temperature ordinarily follow each other, and the simultaneous rise of their respective curves belong to the usual symptomatic complex of fever. Under the most varied circumstances and diseases, this coordination of the pulse and temperature is excellent, as far as the prognosis is concerned. Nevertheless as soon as an acute inflammatory infection is replaced by a generalized infection, more or less virulent, the correlation between the pulse and temperature ceases; the former rises, and the latter becomes lower. In some cases it is the pulse which increases in frequency, while the temperature curve becomes hypothermic, and here we are dealing with the pulse of infection, as is observed, for example, in the hypertoxic forms of appendicitis. In other cases it is just the reverse, and the pulse becomes weaker as the rise in temperature becomes greater; the signification of this phenomenon is the early arrival of death. In both cases it will be seen that it is the continually increasing difference between the corresponding points of the two superposed curves which measures almost mathematically the imminent danger.

In studying the numerous cases of imperative surgery of all kinds, we shall always find this assertion verified: All patients presenting a rapid and weak pulse with the temperature at, or below, normal will die, whether operated upon or not, and under no other circumstances does the condition of the pulse attain such a high value. Consequently the diagnosis, as well as the prognosis, in surgical affections of the abdomen, particularly in peritonitis, no matter what may be its nature or origin, is revealed by the study of the pulse and temperature. In these affections the pulse is usually rapid, very small, frequently irregular, and at an advanced period of the process becomes imperceptible and cannot be counted. If the infection progresses, if the danger increases, the frequency and the smallness of the pulse also augment at the same time. Now, of these two factors, namely, frequency and smallness, it is the latter which above all should be considered; if the beats vary from 140 to 150, but retain sufficient force to be counted with ease, all hope should not be given up, but, on the contrary, if the pulse is extremely rapid, small, irregular, and intermittent, the patient will soon die. Consequently, it is the amplitude and strength of the pulse which should be particularly taken into consideration, and when these two conditions are well marked, one may operate with some small chance of success.

From what has been said one may conclude that the examination of the pulse is not only an element in the prognosis, but that it is the best source from which to obtain all practical indications. Although the interpretation of the results of this examination varies with each affection and in each particular case it may be admitted in a general way that the most important characters of the pulse in surgery are to be found in its amplitude and the relation of its curve with that of the elevation of temperature, and that, as far as the prognosis of a near death and the operative indications in cases of extreme urgency, if the condition of the pulse, no more than other symptoms present, is not alone sufficient to settle the question, it nevertheless remains the fundamental element in favor of or against the chances of the patient's recovery.

The respiration will also give indications which, although not so important as those obtained by the pulse, should never be neglected. One should take into consideration the rhythm, frequency, and amplitude of the respiratory movements. These do not follow the pulse, and they may become increased or lowered quite independently, but the most unfortunate condition is certainly when there is discord between their frequency and that of the pulse. A very slow, or a very rapid respiration, and especially any irregularity of the rhythm and of amplitude, are also very bad symptoms, testifying to a profound weakness of the vitality. There is also a sign which is most worthy of remark in many moribunds, namely, the reflex automatic character of the respiration: regular and superficial, these movements give to the thorax the appearance of a bellows.

The temperature and its prognostic importance may be quite properly considered here relative to the signs drawn from the condition of the circulation and the respiration, because the physiological thermic phenomenon is intimately united to these two functions. The exactitude of the thermic condition, which can be mathematically registered by the thermometer, would seem, upon the first glance, to be the principal and most precise indication of the prognosis, but this, however, is not the case. Now, although one may obtain a great deal from the extreme variations of the thermic curve, it must be said that these have nothing absolute in them. An extreme elevation of the temperature only means imminent death when accompanied by a miserable condition of the pulse and when there is discord between these two indications, it is the pulse upon which one should rely.

A considerable lowering of the local temperature in certain parts of the body, especially of the extremities and the nose, should also be mentioned. This sign is met with in a number of serious conditions, but it does not constitute a certain symptom of approaching death, because in many cases where this sign is present the patients ultimately recover.

The condition of some of the secretions and excretions should not escape the investigation of the clinician, and the results of this examination will often be fruitful. In the first place, the skin, which is generally dry, almost like parchment, even in the axilla and groin, is the seat in certain irregularly distributed isolated regions of a particular sudation,

the viscid products of which give to the examinigg finger a most disagreeable cold sensation. Everywhere else it is dry, without elasticity, and has a grayish hue.

The secretion of the eyes, which is profoundly disturbed, does not take place, and dryness of the cornea and conjunctiva coincides with that of the nasal mucosa. The great Lasègue attached such importance to the latter signs that he did not hesitate to say that "a man who sneezes is not going to die and a child who sheds tears in crying is saved." The same may be said for subjects whose nasal secretion is present, even if other alarming symptoms are manifest.

The condition of the secretion and excretion of urine is of great importance, because the renal function plays a very important part in the general vital phenomena. When it is going on normally it is by it that the organism rids itself of a large number of useless or dangerous materials, and in those cases of pathological intoxication it is by the urine that the elimination of the various toxines is accomplished. It may be readily understood that, when in the presence of serious conditions or even hopeless ones, the condition of the urinary secretions should be closely examined. In cases of serious infection or major traumatism the disturbances in the renal secretion manifest themselves in two ways, namely by absolute arrest, otherwise designated anuria, or in a more attenuated form, namely marked diminution, commonly termed oliguria.

When the patient passes no urine there is a question to be considered which is not without importance, namely does anuria really exist, or is it simply in appearance? In other terms, is there only a defect in the excretion of urine, retained in the bladder on account of some mechanical disturbance of the urinary apparatus, or have the kidneys ceased to secrete? Percussion of the hypogastric region, or better still the introduction of a catheter will remove all doubt, greatly to the profit of the prognosis. When the patient urinates little, another cause of error intervenes, but of quite a reverse nature than in the foregoing. There may, in point of fact, be a production of a very small quantity of urine, which the bladder does not hold and, on account of a weakening of the tonicity of the sphincters, the urine flows away from the urethra drop by drop, thus simulating incontinence from overdistension. The absence of suprapubic dullness or the introduction of a catheter, if necessary, will suffice to establish that in reality the urinary secretion is markedly decreased.

When clinically demonstrated, oliguria and anuria offer a very serious prognosis, and these symptoms during the progress of any form of infection show that the organism has reached an advanced state of failure. Thus, to give a single example, in intestinal obstruction or strangulated hernia, the considerable diminution of the urinary excretion is an absolute indication of renostercoræmia, indicating a rapid extension of the infection. It goes without saying that the presence of pathological elements in any marked quantity, such as sugar or albumin in a scanty urine, darkens the outlook which will become all the more so in diabetic patients, or those who have been subjects of albuminuria and who, after a traumatism, require surgical interference after having suddenly ceased to urinate. The only circumstance in which the gravity of the prognosis of arrest of the urinary secretion is mitigated is when it is possible to explain the anuria by a reflex renal action set up by the existence of a localized affection of the region, such, for example, as anuria, originating from a calculus.

One thing more, which is very important, is the age of the patient. In young subjects, these profound disturbances of the renal function may be due to an acute nephritis, in which case the prognosis is far better. In elderly people it is frequently a sign of old chronic nephritis, whose long standing and irreparable lesions considerably increase the actual danger. Generally speaking, oliguria and anuria indicate that the patient is a noli me tangere, and consequently should not be interferred with surgically, and when in spite of massive injections of normal salt solution these symptoms nevertheless persist, one can no longer be in doubt as to the early arrival of a fatal issue. One may consider himself fortunate if this timid therapeutical tentative does not contribute to hasten the final outcome, because it is in just these cases where the renal secretion has become definitely stopped, that the terrible complication, acute pulmonary œdema, results from the hypodermoclysis and carries off the patient. Without any doubt many very precious hints would be obtained by careful analysis of the urine, but this necessitates complicated technics, which cannot be thought of in these cases where the life of the human being always depends on the rapidity with which a decision is made.

The nervous system holds two functions under its control, whose study presents a very great interest in patients supposed to be dying, namely, the sensibility and motor functions. We have already said a few words relative to the subject of sensibility when speaking of the common condition of indifference preceding the final period of dissolution. It is one of the constituting elements of collapse, but it is not an absolute one, because, beside the category of prostrated moribunds we have what may be termed the combative ones. In the latter class the exalted sensibility causes the approach of death to be still more painful; unconsciousness and muscular resolution give way to fearful agitation. In their movements, which are simply gesticulations of revolt against suffering, in their râles, which are cries of pain and of powerless rage, one assists at all the horror of a fierce combat against the cruel adversary whose victory is absolutely assured.

As to the persistence of the motor functions it is occasionally made evident by a jest effected with a remarkable automatism, and here we have a very important sign of an approaching death. In this movement, which is designated by the name of carphology, the subject looks as if he were gathering together a number of scattered objects; sometimes it is the bed clothing which he throws off and pulls back alternately and incessantly with a mechanical regularity in some instances. In the male only do we meet with carphology of the genital organs, which has nothing in common with an aberration of the genetic sense, which has been abolished for a long time.

In order to complete the subject of the condition of the nervous system in the dying, it would be in-

teresting to analyze their mental condition, but such a psychological study would take us too far from the domain of surgery. What a source of precious indications it gives for the practitioner habituated to read the mind of his patients, and when the prognosis remains in doubt, in spite of the information acquired by clinical investigation, with what a singular privilege of foresight the patient emits the affirmation that his death is near, perhaps only within a minute or two before the words become frozen on his lips, which will be closed forever.

While endeavoring to form a prognosis and make a decision after the signs that have already been studied, the surgeon should resort to considerations of a more general order, but which are not without considerable interest. A rapid examination will, in the first place, indicate the patient's age, temperament, and social condition, all of which observations have certainly much importance. It is a very ordinary fact, but one which cannot be too often repeated, because it is a useful truth, that a young and robust subject who has never suffered physically nor morally from the vicissitudes of life, presents guarantees of resistance which are not to be expected in an individual advanced in age, debilitated, and worn out by social and physiological misery. Although perhaps elementary, these considerations will nevertheless weigh in one of the scales for or against, and in some cases joined to the weight of more decisive arguments, they will suffice to make the balance weigh in a positive or negative sense.

But here come other preoccupations to the mind of the surgeon which relate to the constitutional make up of his patient. Diseases and accidents which may require an imperative operation do not exclusively strike individuals who were valid and in good health before. They may strike individuals who, for a more or less considerable length of time, have been affected by diathetic affections, such as tuberculosis, syphilis, diabetes, neoplasms, etc., and who may be more or less undermined by their diathesis, or have even arrived at the stage of cachexia. And still more, these very diatheses may be the determining or complementary cause of the lesion which gives rise to the question of an operation. In 1880 Verneuil thus put the question before the International Congress of Medical Science held at Amsterdam as follows:

"Le practicien devra-t-il considérer toutes les maladies constitutionelles comme des contreindications à l'emploi de la thérapeutique opératoire? Ira-t-il refuser à tous les diathésiques les bienfaits de la chirurgie armée? Laissera-t-il un scrofuleux s'épuiser par l'abondance de la suppuration? N'ouvrira-t-il pas l'abcès d'un rhumatisant, et ne débridera-t-il pas l'anthrax d'un diabétique? Renoncera-t-il à prévenir, par une extirpation précoce et largement faite, la généralisation probable d'un néoplasme? Laissera-t-il suivre tranquillement sa marche à la septicémie aiguë, née à la suite de l'écrasement d'un membre? Se croisera-t-il les bras devant l'étranglement herniaire, les hémorrhagies, les rétentions, en un mot, devant tous les cas d'urgence, qui, aussi bien que les gens robustes, atteignent les invalides, quelquefois même les cachectiques?"

Let us now see what solutions he gives to the problem in his conclusions.

1. Les opérations chirurgicales ne sont point formellement contreindiquées chez les sujets atteints de maladies constitutionelles; elles sont même, dans ces conditions, souvent permises, fréquemment utiles, parfois indispensables.

2. Leur pronostic, toutefois, est beaucoup plus sérieux que chez les individus sains; il est surtout plus incertain, plus difficile à établir, rien ne pouvant faire prévoir surement à l'avance l'influence favorable ou l'influence nuisible que le traumatisme exerce sur la maladie générale, pas plus que la manière dont cette maladie, à son tour, réagira sur le processus réparateur local.

3. Ce pronostic diffère pour les différentes maladies constitutionelles.

4. Le danger inhérent à la diathèse est minime, quand celle-ci est encore à l'état de dyscrasie; il augmente notablement, quand apparaissent des lésions chimiquement et histologiquement appréciables; il devient extrême, quand les grands viscères, foie, rate, rein, cœur, poumon, présentent des lésions avancées, sclérose, stéatose, phlogose, ou, lorsqu'ils sont envahis par des produits pathologiques spéciaux à certains états diathésiques; tubercules, gommes, carcinomes et néoplasmes divers."

From this it becomes evident that nearly twenty-five years ago Verneuil already admitted that the diatheses, which had arrived at the dyscrasic state were in no way contraindications for surgical interferences, but he becomes more reserved when the lesions are histologically appreciable and decides not to intervene when the specific pathological productions have invaded the large viscera. The progress of science, however, has allowed surgeons to enter into a domain that Verneuil only timidly penetrated, although he was fully aware what success might be met with in operations upon diathetic subjects, as for example, surgical interference in diabetic individuals, when a careful asepsis closes the door to secondary infections.

In point of fact the term diathesis is merely a word which has for a long time been employed and abused, for the purpose of sowing fear in the surgical mind. Every day one finds the same label of syphilitic diathesis applied for example to two subjects, one of whom comes and goes like everybody else without the slightest accident or functional disturbance, while the other shows, by the incoordination of his movements and disturbances of the sensibility, his medullary lesion, or by his progressive cachexia and marked ascites his specific hepatic insufficiency. In both of them the same word is used for indicating the affection, only in one the word alone exists for the time being, while in the other a fact becomes added, that of a serious lesion. We are consequently far from the timid conclusions offered by Verneuil, who admitted that visceral lesions rendered the prognosis, which was already unfavorable, far more serious. At the present time it may be said that the diathesis in itself is nothing, and that it is the lesion alone which creates the danger. In considering the general condition of the patient the surgeon, making abstraction of the diathetic affection, should be more preoccupied with the lesions that it has produced in the large organs, and the visceral insufficiencies that it favors. It is not tuberculosis, diabetes, or syphilis, whose obscure and hypothetical consequence should be thought of, but it is the condition of the heart, liver, kidneys, and lungs, each considered in itself and independently of general causes which have acted upon them that will serve as a base upon which to form a prognosis and guide the decision as to the advisability of operating.

Another factor comes into play here, namely, the condition of the principal viscera, but it has not the same importance as the foregoing conditions. In the strict point of view of their functional importance the only one which need be considered at present is whether or not fundamental differences exist. The different functions have not all an equal importance and there are some which may become suspended for a certain time and the patient will continue to live, but there are others whose complete and instantaneous arrest will, necessarily, result in death. Such for example is the circulation. Consequently we would give the heart the foremost place. It is not a question here of its functional cessation, which implies that death has occurred, but of a more or less marked weakness in its functional activity. No matter what various lesions may compromise its mechanism, they darken considerably the prognosis. When arrived at an advanced stage, when they have acted upon the other viscera, and when the disturbances that they bring about have resulted in a pulmonary, renal, or hepatic insufficiency, they at once become a distinct contraindication for operation.

The condition of the liver, kidneys, and lungs still remains to be considered, and which of these different organs, whose absolute or relative integrity is the most important and whose functional disturbance is the most to be feared is a very complicated and difficult question which I can only briefly refer to, because it presents so many different aspects. There is in the first place one consideration which is simply common sense; while the kidneys and the lungs are double organs, one of which may supply the functional insufficiency of the other, the liver is, on the contrary, a single organ and those affections which bring about its total functional incapacity, cause a complete suppression of physiological activity. As to the kidneys and lungs it is impossible to discuss the question of their priority from the standpoint of the relative importance of their integrity. To do this it would be necessary to enter into a long discussion of statistical considerations, pathological anatomy, and clinical medicine which would take too long to expose and argue. Then, again, this is a question of secondary importance, but what is important to consider in a case of extreme urgency is to know whether there exists or not a contraindication due to some pathological state of the kidneys or the lungs. Upon this point it is quite impossible to lay down any hard and fast rule. One should be particular to discover if the way in which these viscera fulfill their functions is sufficient to uphold the vital resistance to a certain point. In the case of the kidney this is easily ascertained, because a quantitative examination of the urine, and to a certain extent a qualitative one, will give sufficiently precise data. For the lungs the question is more delicate. Auscultation and a careful examination of the patient will nevertheless furnish some very precious signs which will reveal the manner the respiratory phenomena are being accomplished, and whether or not they are compatible with chances of survival and the possibility of operating.

Let us suppose that after a careful examination and after having minutely weighed the pros and cons it is decided to operate, how and to what extent shall the operation be done? Here one is in the presence of an individual seriously afflicted by some infectious process, extremely weakened by loss of blood, violently shaken by nervous commotion, or arrived at the extreme limit of a suppurative cachexia; these are certainly conditions which differ from usual circumstances and which also differ from the ordinary from a therapeutical standpoint. The first indication which imposes itself is to reduce the narcosis to the very shortest possible time or even to do without it altogether, if possible. In point of fact, general narcosis amounts to an intoxication, occasionally necessary, but always more or less injurious, no matter what agent may be employed. There are cases where the condition of indifference and extreme insensibility of the subject allows the operation to be performed without the use of any anæsthetic, and one will hardly note any movement of the face or jerks of the limbs indicating the weak persistency of subconscious reflex sensibility. In other cases pathological anæsthesia is not sufficiently complete, and the patient will react quite sharply to external excitations so that he will be fully conscious of pain. On the other hand, his vital resistance is so precarious and compromised that it would be quite unsafe to submit him to the influence of a general anæsthetic. Under these circumstances local anæsthesia by injections of cocaine will be quite sufficient in the larger number of instances, because usually the operations in this class of case are both simple and rapid.

Lastly, in rarer cases where the general sensibility has remained intact and where the patient seems in sufficiently good condition to be able to withstand general narcosis, this should be resorted to, but its duration should be made as short as possible in order to diminish its bad effects on an organism which is in a condition of lessened resistance. I cannot believe that the use of spinal anæsthesia with cocaine is a wise practice, at least in these cases; its results and ultimate consequences are not sufficiently known in order to conclude as to its absolute or relative superiority to narcoses obtained by the use of chloroform or ether. The two latter agents are by far the most frequently resorted to.

In order to make the duration of the narcosis as short as possible the patient should not be submitted to the anæsthetic until all preparation for the operation has been carried out, and the surgeon and assistants are prepared. During the anæsthesia the pulse should be carefully watched and if it weakens or becomes slow the anæsthetic should be stopped or prudently administered, because the effects, always serious, of toxic syncope are all the more to be feared under these circumstances, since the general condition is more precarious and the vital resistance lessened.

I cannot leave this question of general anæsthesia in imperative surgery without saying a word relative to the choice of the agent. It would seem that preference should be given to ether, because it has over chloroform the advantages which will be seen in comparing the following tables:

ETHER.	CHLOROFORM.
Moderator and tonic of the heart.	Paralyzes the heart.
Arrest of respiration before that of the heart.	Suddenly arrests the heart.

Does not increase the loss of nitrogen.	Increases the loss of nitrogen.
Hardly ever induces syncope at the beginning.	Produces it often.
May be given in relatively large doses.	Can only be given drop by drop.

From these considerations it would seem to result that ether is a less powerful factor of shock than chloroform, and consequently should be used in preference to the latter. The presence of an open fire or numerous gas jets in a small room seem to be the only contraindications for the exhibition of ether. After several years' use of ethyl chloride as a general anæsthetic to induce primary narcosis before giving ether, and used in every imaginable class of case from infancy up to old age, I can most highly commend its use, because its action is rapid, and those who have administered this drug for me in my operations, and who are most thoroughly competent in the matter of anæsthesia, have assured me that about one half less ether is used during the narcosis when ethyl chloride is employed. The induction of primary anæsthesia with nitrous oxide does not appeal to me, and in imperative surgery it is out of the question unless in a hospital, on account of the enormous bulk of the required apparatus. With ethyl chloride we have never observed a single untoward effect, the pulse and respiration remaining perfectly normal, and the average time of complete narcosis has been about fifty seconds in adults and thirty in babies and young children.

The necessity of restricting the time of the anæsthesia brings us to another, namely, to act rapidly and consequently simply, in other words to limit the operation to those manœuvres which are strictly necessary to ward off the immediate danger, while further work for complete cure of the patient may be achieved later when the general condition will allow of a more prolonged and perfect secondary interference. One should not lose sight of the fact that independently of the reasons stated operative stock is partly a function of the duration of the interference and that, in spite of the most careful hæmostasis, loss of blood can only be increased by long and complicated manœuvres, and that lastly the more an operation is prolonged, the more the patient is exposed to secondary infection which the most careful asepsis does not always guarantee them against. To open up and clean out hæmorrhagic or purulent foci, to ligate injured vessels, suture ruptured organs, remove, when it can be easily and quickly done, the diseased structures, freely irrigate and drain septic cavities, such are in a summary way the general indications to be fulfilled. No search should be made for an appendix which cannot be immediately found, no immediate and complicated amputation in major traumatisms of the limbs, enterostomy and not resection in intestinal occlusions, liberation without excision of the sac and reconstructing the canal in cases of strangulated hernia are things which should be done if one is desirous of being a successful scientific surgeon and not merely an operator. And in this point of view let me say that the French maxim *"the best is the enemy of good"* is absolutely common sense and most decidedly applies to imperative surgery. If this simple advice is carried out one will more frequently save hopeless cases than otherwise and sometimes it is astonishing what one may be able to obtain from the mysterious work of Nature when he knows how to stimulate her efforts and effects by a properly located incision and good drainage.

In closing let me say that in emergency surgery with the patient at the frontiers of death, the free use of normal salt solution should always be resorted to, beginning before, kept up during, and continued after the operation. In some cases, especially in severe internal or external hæmorrhage, sometimes in traumatic shock or septicæmia the use of this agent represents the only therapeutical measures that one can resort to, and the success that it will give is sometimes more than favorable.

871 BEACON STREET.

ON THE POSSIBILITY OF THE DEVELOPMENT OF CANCER IN THE CERVICAL STUMP FOLLOWING SUPRAVAGINAL HYSTERECTOMY.*

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That there have been so few reports of cancerous degeneration in the cervical stump which remains after the removal of the corpus uteri by abdominal section is due in part, at least, to the fact that the great majority of these cases are not heard from after they leave the hands of those by whom the primary operation is performed.

This fact is easily explained. It is not difficult to keep in touch with those who are well to do, but this is not the case with those who are poor, and ignorant, and careless, especially if it is necessary to make a long journey to undergo an examination at the hands of the one by whom the operation was performed. With such patients no attention is paid to symptoms which are not urgent, and when urgent symptoms arise they are quite likely to become discouraged and make no effort to obtain skilled assistance. On the other hand, should they live in a large city and attend a public clinic or dispensary, they are quite as likely to go to a stranger as to the one who operated upon them, and possibly fall into the hands of one who does not appreciate the importance of their symptoms. Still more is this true should they seek relief at the hands of the busy general practitioner who may delay to call to his aid the gynæcologist, until the time for the adoption of radical measures has passed.

But perhaps the most important factor in the history of such cases is that the surgeon who does the primary operation fails to keep in touch with them, and loses sight of them altogether, whether in public or private practice, when he discharges them apparently cured. The few exceptions are principally those who are connected with well organized hospitals in which the details of clinical history are accurately recorded, and where more or less attempt is made at accurate classification and analysis of the various types of disease.

The cases in which this complication may arise are usually those in which the uterus has been removed for myoma. That myoma frequently coexists with cancer is a matter of common observation.

Piquand (*Annales de gynécologie et d'obstétrique*,

* Read at the Thirty-first annual meeting of the American Gynæcological Society, at Hot Springs, Va., May 23, 1906.

July, 1905) collected forty-five such cases, in twenty-four of which it was thought that the fibromuscular elements had been transformed into epithelial cells, though in some of them there were preexisting cells which proliferated and developed malignancy. These cells were supposed to have been derived either from the embryonic remains of the Wolffian or Müllerian canal, or were simply epithelial ingrowths into the fibrous tissue. I am satisfied from my own experience that the coexistence of cancer and myoma is much more frequent than Piquand would seem to think.

Noble (*Transactions of the American Gynæcological Society*, 1904, p. 299), in an analysis of 1,188 cases of fibroid tumor operated in by various surgeons, found twenty-nine in which cancer of the corpus uteri was a complication, twelve in which there was cancer of the cervix, and one in which there was cancerous infiltration of fibroid tumor arising from adenocarcinoma of the corpus uteri by metaplasia.

I believe that the records of any institution in which large numbers of cases of cancer are seen would show a much greater number of coincidences of cancer and myoma than the statistics of Noble would indicate, and that the number associated with cancer of the cervix is much greater than with cancer of the body of the uterus.

I have not as yet seen any conclusive evidence that myoma is transformed into carcinoma, and histologically we would not expect such a sequence. The condition which we are considering seems to me to come under another category.

An uterus which is the seat of extensive fibroid degeneration is certainly a favorable field for other degenerative processes. It may be present in an individual with a diathesis or dyscrasia, with an inherited tendency, for example, to tuberculosis, or malignant disease, which may be excited to outbreak by the irritation of one or more myomata. Suppose the seat of the myoma to be removed and the retained cervical stump to be apparently free from all traces of such a new growth, what conditions are present to favor the development of other neoplasms?

Manifestly the conditions are the reverse of normal, the chief source of vascularization has been removed, and the nerve and lymphatic connections have been interrupted. There are doubtless many cases in which this defect is not compensated by the blood supply from the anterior vaginal wall, and the nutritional elements which are derived from the peritonæum, when the stump is thus covered, however firmly it may adhere. Cases have been reported in which the cervical stump has entirely separated from its vaginal attachment, and has been extruded from the body, and we know that it very commonly undergoes atrophy.

I feel convinced that with all the great achievements of modern surgery we have made the mistake of supposing that because an organ can be removed without loss of life, and with apparent benefit to the individual, we have learned the whole story. Granted that an organ frequently demands removal to save the life which it is jeopardizing, granted also that it is quite possible that the obliteration of its function may not be inconsistent with a good degree of health and comfort, there is still something in the subtle physiology of the body which we have not yet grasped, and surgery with all its refinements may some day appear crude as the solution of the problems of morbid function.

Lumpe has collected seven cases in which malignant degeneration of the cervical stump has taken place (*Zentralblatt für Gynäkologie*, November 4, 1905, p. 1354). Three of these were reported by Chrobak, whose advocacy of supravaginal hysterectomy is well known in connection with several hundred operations which he had performed or the reports of which he had analyzed. One was a sarcoma in which the stump was covered by peritonæum, while in the other two the stump was treated extraperitoneally. In both of the latter cases the stump became detached from the abdominal wall.

Olshausen (Veit's *Gynäkologie*, ii, p. 711), in discussing the operation of supravaginal hysterectomy, stated that these were the only reported cases of this kind with which he was acquainted, and he did not consider so small a number an argument of any value against the operation.

Savor (*Zentralblatt für Gynäkologie*, 1898. p. 1368), at a meeting of the Obstetrico-Gynæcological Society of Vienna, June 14, 1898, demonstrated a case of carcinoma of the portio vaginalis following laparomyomectomy, the stump having been covered with peritonæum. His conclusion was that though such cases were rare, they afforded a valid argument for the complete removal of a diseased uterus. The same author reported an additional case privately communicated to him by von Hacker. Another case was reported at the same meeting by Von Erlach.

The seventh case furnished the theme for Lumpe's paper, and occurred in a woman suffering with osteomalacia, whose uterus was removed at the fourth month of her ninth pregnancy. At the time the operation was performed there was no evidence of cancer of the portio vaginalis. Eight months subsequently cancer was discovered in this organ, and it was removed by abdominal section. The only unusual condition noted at the operation was the presence of many adhesions.

To the foregoing series I beg to add another case which recently came under my observation:

The patient was fifty-one years of age and was sent to me from Port Chester, N. Y., October 5, 1905. The corpus uteri, ovaries, and tubes had been removed for uterine myomata March 23, 1901, by the late Dr. George R. Fowler, of Brooklyn, N. Y.

The patient recovered promptly from the operation, but subsequently developed carcinoma of the left breast, and this was removed by the same surgeon eighteen months after the first operation. Recovery from the second operation was also prompt, though she has complained of pain and numbness in her side and arm ever since.

She stated, furthermore, that she had been told by Dr. Fowler that a further operation on her uterus would be required, but this was deferred on account of the disease which had developed in her breast.

As the breast operation was performed during or

near September, 1902, it seems hardly probable that cancer could already have made its appearance in the cervical stump, or it would have made more headway in the three years which intervened before she came under my observation.

The patient's general condition was good, though she was of a decidedly neurotic temperament.

The portio vaginalis was quite large, two and a half inches in depth, movable, and the endometrium was very sensitive to the probe. I could hardly believe in view of the size of the organ and the exudate which seemed to surround it that the uterus had been removed. There was great sensitiveness in the tissues surrounding the cervix, cystic degeneration of the mucous membrane of the os uteri, and relaxation of the vaginal walls.

The breast scar was sensitive, especially near the axilla, but there was no evidence of recurrence of the cancer. The cervix was dissected out from the vagina November 10, 1905, and was found well covered with thickened firmly adherent peritonæum. The uterine arteries were absent, and no disease was discoverable within the pelvis. The mucous membrane of the os uteri showed typical epithelioma which had not proliferated to the surrounding structures, nor had the tissues broken down. The patient recovered promptly and I have not seen her since she returned to her home.

The suggestions which occur to me in connection with the consideration of this subject are the following:

(1) The necessity of more careful clinical and pathological records, both public and private, in all the cases in which supravaginal hysterectomy is performed. This would probably result in the discovery of cancer of the cervix or corpus in cases in which it is not suspected and would probably bring to light additional facts in regard to the history of the evolution of cancer.

(2) The periodical examination of those who have undergone the operation in question at not longer than six months intervals. This is especially desirable for those whose tissues are in a bad condition of nutrition or who suffer from hereditary taint.

(3) Complete removal of the uterus offers greater security from cancer than does retention of the cervix. If the patient's history reveals any conditions which suggest the possibility, near or remote, of future degeneration of tissues, complete extirpation should be the invariable rule.

173 EAST LINCOLN AVENUE.

MAXIMS FOR THE SELECTION OF CLIMATE IN PULMONARY, LARYNGEAL, AND BONE TUBERCULOSIS.*

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(1) To deny the beneficial influence of certain climatic regions as a valuable adjuvant in the treatment of tuberculosis is as dangerous and unscientific as the belief in the specific curative quality of any particular climate.

(2) A change of climate, though not necessarily a marked one, except in the very latter stages of the disease if of either a pulmonary or laryngeal character, is nearly always good. While a change from an unfavorable climate to a favorable one, or from a good to a better, must naturally be considered preferable, this rule is by no means inflexible. When the patient has contracted tuberculosis in a favorable climate, a change to another, even to a seemingly less favorable one, may accomplish as much good for this individual as the reverse in others.

(3) The native locality of the tuberculous must be taken into consideration when making a climatic change. The patient who spent his early youth in Norway or other parts of northern Europe, or one born in Massachusetts, Maine, or northern New York, where the winters are rigorous, will usually do better in such climates as Colorado, the Adirondacks, Sullivan, or Orange counties of New York offer. The sons and daughters of sunny Italy and our American born citizens from the warmer zones, will do better in climates such as are to be found in southern California, New Mexico, Arizona, North and South Carolina, Virginia, Florida, Bermuda, etc.

(4) To the foregoing rule, there are exceptions, and besides consideration relating to nativity one should be guided in a large measure by the patient's personal experience. For example: A cold climate may be selected, if he has found by experience that he feels more comfortable and less distressed in winter. A change to a warmer climate is indicated, when the reverse is the case. When the experience of the patient has demonstrated that he felt better when near the sea coast, or vice versa, this factor must also serve as an indication for his domicile while seeking cure.

(5) There exist idiosyncrasies in regard to climatotherapeutics and aerotherapeutics as there exist in hydrotherapeutics, electrotherapeutics, and medicinal therapeutics. These idiosyncrasies cannot be discovered beforehand, they can only be learned by experience.

(6) High (above 3,000 feet), moderately high (1,500 to 3,000), and low altitudes, hot and cold regions, sea coast, and ocean climates, prolonged voyages, and life on house boats on rivers and lakes, extreme dryness and moisture, all these conditions have proved advantageous in number of cases.

(7) The value of any climate to a tuberculous patient cannot be determined or compared with any other, unless the patient lives under careful medical guidance in a sanatorium or private home, and follows the best hygienic and dietetic treatment.

(8) Laryngeal cases, in the earlier stages with relatively little pulmonary envolvement, are often benefited by a change to a moderately high or to a warm moist climate with between 500 and 1,500 feet of altitude, particularly when there is a chronic feeling of dryness in the throat. When there is a tendency to moist catarrh, even the very dry and

* These maxims were presented by the author at the occasion of a discussion on climate in the treatment of tuberculosis before the Clinical and Climatological Section of the National Association for the Study and Prevention of Tuberculosis, at the second annual meeting, in Washington, May 18, 1906. They are the maxims which have guided the author in years of practice among the tuberculous whenever he was called upon to help to decide on a climatic change for a patient.

hot climates, provided dust storms are not frequent, are often beneficial. In pulmonary cases a weak heart, distinctive heart lesions, emphysema, constant fever, and extreme nervousness are contraindications to high altitudes. Whenever such pathological conditions, as were just mentioned, do not exist, great altitudes, and cold or cool or hot and dry regions dust free, or at least relatively dust free will always prove a valuable adjuvant in the treatment of tuberculosis. Early pulmonary hæmorrhage per se need not be considered in determining a choice of climate. However, as a rule, and particularly in cases inclined to frequent hæmoptysies, long distant journeys should be made with frequent rests and great altitudes approached only gradually. Not a few cases with slight bronchial symptoms (bronchitis), but weak hearts and evidences of mixed infection do well at the sea coast for the greater part of the year. Prolonged ocean voyages may also prove beneficial in such cases. The patient, however, must not be subject to seasickness, must be fond of the ocean, and be in a situation to travel in comfort and with ease on a steamer or large ship, with a medical officer on board.

(9) The ideal climate for the average pulmonary patient, in the earlier and more hopeful stages of the disease, is the one where the extremes of temperature are not great, with the purest atmosphere, relatively little humidity, much sunshine, and all conditions which permit the patient to live comfortably out of doors the largest number of days out of the year, and the largest number of hours out of the twenty-four. For tuberculosis of the bones and joints and scrofulous affections of childhood the sea coast climates in our temperate zones comes nearer to deserving the term *specific* than anything else. The peculiarly beneficial influence of sea coast climate in bone and joint tuberculosis is doubtlessly to be ascribed to the aseptic and ozonic quality of the air, and the iodides and other salts suspended therein. But pure air and outdoor life, in whatever locality, can and should be utilized in the treatment of tuberculosis and scrofulous affections of childhood.

(10) In the choice of locality for the purpose of a climatic change for any patient, besides the pathological considerations enumerated in paragraph 8, many factors must be taken into account. These are:

(A) If the patient wishes to return to his present home, after improvement or restoration to health, may he do so safely or not? Experience has shown that when great climatic changes have been made patients frequently relapsed when returned to their former home.

(B) If the patient is married or single, young or old, willing or unwilling to leave. If the patient is subject to nostalgia, and generally much attached to home environments, sending him far away, and particularly if against his wish may often produce disastrous results, for mental depression retards recovery and aggravates pathological conditions.

(C) If the patient is sanguine and cheerful he will usually do well even at long distances from home, in isolated regions, within or outside of a sanatorium.

(D) For the morose and hypochondriac patient isolation or long distances away from home have often produced the same result as nostalgia.

(E) To remove an advanced and evidently hopeless case from his home to a long distance is as cruel as it is unscientific, unless it is done by the patient's special request and with the likelihood of obtaining the object in view to lessen his sufferings and make him happier in general. Slight climatic changes with short distances to travel are often beneficial in such far advanced cases when made with the absolute consent of the patient.

(F) The patient's financial condition must be such, that by his removal to distant localities and his subjecting himself to the hygienic and dietetic treatment in special institutions or health resorts, he will not become destitute and a burden to the community which has extended its hospitality to him. His means should be sufficient to avoid all possible anxieties and worry in this respect.

(11) When the situation is such, that the choice of home climate or home treatment must be taken into consideration we should bear in mind the following: The patient will do better in the outskirts of the city than in the city, better in the higher parts of the locality than in the lower, better in a clear or relatively clear, dustless atmosphere than in a dusty one; better in a pure, smokeless, or relatively pure and smokeless locality, than in one full of smoke and odors; better in a locality where he may get the benefit of whatever sunshine there is than in a valley, cañon, or narrow street surrounded by high buildings; better where there are few houses than many; better where there are relatively few people than where there is overcrowding; better where there is little traffic and little noise than the reverse.

(12) Lastly, we must consider that the majority of consumptives are recruited from the laboring classes, and those we must cure in the same or nearly the same climate in which they will have to live and labor after their restoration to health. While the cure of the consumptive individual in his home climate, which is in most instances far from the ideal, may often necessitate a longer space of time, at the end there is an advantage from this. Experience has demonstrated that relapses among this class of patients are fewer, and the cures thus more assured and lasting than those obtained in more congenial climates. Our hope for the eradication of tuberculosis in the present state of our social life lies in prevention by education, better housing of the laboring classes, abolition of child labor, the treatment of tuberculosis in children in sea coast and inland sanatoria, the improvement of the social condition of the masses in general, utilization of selected climates for the well to do adult cases, the application of the hygienic and dietetic treatment to all, and to the majority the sanatorium treatment at home or in special institutions in our home climates.

16 West Ninety-fifth Street.

SHOULD COLD BATHS BE GIVEN FOR FEVER IN YOUNG CHILDREN?

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The good effect of the cold bath in many diseases is more generally recognized every day; not only is it a most valuable method to reduce fever, but as a direct stimulant to the nervous system worn out by long suffering, or more acutely attacked by toxic poisons, it is unexcelled. Multitudes of examples reported by numerous authors attest the truth of this statement.

But may this most efficient method of treatment be used with children? That it is powerful is universally admitted. It reduces temperature, it is a wonderful nervous stimulant, it promotes the elimination of the toxic products of disease, it gives sleep in a manner more natural than any known drug. But it has drawbacks and ugly features that make it often injudicious and sometimes impossible to use it in the best and most thorough manner. The substitutes suggested for the cold bath, while avoiding the discomforts, do not produce the good effects of the true treatment: sponging, cool packing, tepid or cool bathing are totally different from the cold plunges, with constant friction of the surface, which constitutes the Brand method.

The object of this method is twofold, the shock and the reduction of fever. Either may be obtained without the other, but our object in properly selected cases should always be to obtain both. A sudden immersion for a short while in cold water will give sufficient shock to arouse dormant vitality and assist in eliminating toxic poisons, without reducing the temperature. On the other hand, by cool sponging, or bathing in tepid water for a long time, the temperature may be reduced without the general benefit that usually follows the shock of cold immersion or affusion; though the fever abates temporarily, the disorder of the nervous system remains, and little good is done. So it is a recognized fact that fever in itself is not the important factor, but it is of great import as an indication of underlying conditions, toxic or nervous, of which it is an outward expression.

This fact is of more importance in treating children than in the illness of adults. The fibre of the latter is more hardened and able to bear for a longer time the strain upon the system, while the child wins or loses its fight for life much sooner. Its tender organs wear out easier, especially its nervous system. It possesses in far greater degree than the adult the power of resiliency and recuperation in convalescence, but it cannot cope with the disease itself without external aids. And in the use of remedies we find that the delicate organism of the child is readily impressed by the various forms of treatment suggested. For this reason many physicians fear to use strong remedies with children, being anxious to avoid doing harm while endeavoring to do good. Foremost amongst the remedies that the timid fear to use may be mentioned the cold bath.

And this is hardly to be wondered at when one considers the very disagreeable circumstances that must necessarily surround this method of treatment. It is undoubtedly a terrific shock to be taken from a hot bed of fever and be plunged into cold water, to be held there in spite of every vigorous protest for a certain definite time of agony while strong friction is made over the various portions of the body. The child invariably screams and cries, and after removal from the tub is usually, for a time, shivering and pinched with cold, presenting a pitiable object with chattering teeth. It is wise to have soft hearted members of the family in another part of the house during and immediately after the performance.

Yet, in spite of these admitted drawbacks, I am prepared to advise the use of cold baths in children, even infants, whenever the high fever and flagging powers point to the possibility of an impending collapse; and the child is to be tubbed not once only, but whenever the same symptoms return in sufficient severity to call for such treatment. I have seen children snatched from death by the fearless prosecution of this course, and I have also witnessed the total inefficiency of other methods in similar cases when fear of consequences held the hand of the timid physician and sacrificed the life of the child.

In the summer of 1899 I was attending a child, six years old, who had typhoid fever with quite high fever; her general condition was remarkably good, there being no other complication, yet her fever remained constantly above 103°, and each afternoon would reach 104° or more. She was very carefully watched by her mother, being the only child, and nursed by a most competent trained nurse. As the high temperature persisted the parents expressed great anxiety, and orders for general sponging with alcohol and water at frequent intervals were given. These orders were explicitly obeyed, but the child's fever went higher each afternoon in spite of sponging for fifteen to twenty minutes twice or thrice a day. As she had no other serious trouble, and as she was a child hard to manage usually, I allowed things to go on longer than usual, but when the father came to me in great consternation one night with the afternoon record of 105° in spite of sponging, I ordered the cold bath (60°) with constant friction. Ten minutes in the bath reduced the temperature 3.2°, and gave her a very quiet and satisfactory night. There was much trouble in giving the bath, but the result was so satisfactory that it was ordered for repetition as soon and as often as her temperature reached 104°. But two more baths were required, on the two succeeding afternoons, before the decline of fever set in and the child made an uninterrupted recovery.

While there was nothing desperate in this case, there were repeated failures in our efforts to make any lasting impression on the fever by sponging, followed by very successful reductions from the bath, giving excellent sleep and a continuance of the lowered temperature for nearly twenty-four hours.

The prolongation of the low temperature is not to be expected always. In desperate cases, due to toxic poisoning, in which the fever rises and continues so high as to threaten the child with prompt heart failure and death, the reduction of fever may be only temporary. At first there may be even little reduction of fever, the only good effect being to quiet the nervous sys-

tem in contrast to the constant delirium and wakefulness that has preceded it. There will be a slight fall in temperature also, which will have been lost by the time the three hour interval has passed; then give the bath again, and after one or two baths there will be not only a nervous improvement, but the fever also will have been lessened, perhaps one, two, or even three degrees. At the same time there will be a longer period of lowered temperature, so that 104° will not be reached at the end of three hours, and the baths will be required less and less often.

When the extreme severity of the case calls for this method of treatment neither the tender age of the child nor its apparent great illness should stand in the way of proper and systematic bathing. The fever is to be reduced, and the nervous shocks are to be sufficient to rouse the resistance of the child. The youth of the sufferer is no bar. I have records of a baby, thirteen months old, who had sixteen cold baths in four days, and whose life was undoubtedly saved by that heroic procedure. It was a case of bronchopneumonia in the Maryland General Hospital.

I have used it in similar conditions subsequent to measles, and at times with excellent outcome. I consider it the only available means to check the rapidly rising temperature of malignant scarlet fever, which presents such a well recognized curve of unchecked fever ending in the death of the child. When this is noted, or even suspected, I feel that the physician is deficient in his practice if he should neglect to use the most powerful antipyretic known. I have seen this very neglect cost the life of more than one child.

In convulsions of young children the rectal temperature should always be taken, as surprising high temperatures may often be found to exist, and it would be manifestly improper to use for such a condition the too usual method of parboiling for convulsions. The proper treatment should be a cold, rather than hot bath, to reduce the fever and calm the over excited nervous system of the child.

I have seen several children die from failure to recognize this condition in time to apply successfully the proper treatment.

While I contend strongly for the use of cold baths even in young babies, I do not fail to understand that the method is capable of doing harm in improper cases. Every child may not be able to stand the severe shock of a cold bath, so I would have the physician himself give the first bath, or stand by while it is being given, to note its effect on the child. Terror and fright, even manifest physical suffering from the cold, are not bars to its usefulness. A crying, screaming, struggling child is better than one sunk into the lethargy of coma, or working in convulsions. Cyanosis and failure to respond to the shock by crying and struggling are signs of evil to be looked for and feared. Under these circumstances the bath must be stopped, the child wrapped in blankets, and stimulated with whiskey or digitalis.

The length of time to keep a child in the bath is to be judged by its effect upon the patient and the result aimed at. A short dip will probably suffice for a stimulating shock, three or four minutes may be required to check a high and rising fever. Always study the condition of the patient during and after the bath. It is well to be present at each bath, certainly at the first two or three, until the capacity of the child to stand the shock shall have been demonstrated. And even then a competent nurse should always be in charge. Older children, say, six or eight years, stand severe tubbing remarkably well. They fight against the cold vigorously, but react rather promptly, and are much benefited. This applies to children of normal strength. It is treatment too severe for those whose general condition is bad; but when a desperate illness appears one must take chances in fighting it.

With our knowledge of the efficiency of proper hydrotherapy I feel that the time has passed when a child should be allowed to die of hyperpyrexia and its consequences without the use of every means in our power to control it.

10 East Read Street.

REMARKS ON ALBUMINURIA, CYLINDRURIA, AND BRIGHT'S DISEASE.*

By S. J. Meltzer, M. D.,
New York.

The subjects I intend to deal with this evening are eminently practical. In the life of a busy physician hardly a day passes in which he is not confronted by the problems involved in the diagnosis of Bright's disease of the kidney.

What constitutes Bright's disease? It would seem that we all know what it is, it is inflammation of the kidney; it is nephritis. But at the last meeting of the American Medical Association, Stengel (1) stated, as Bradford and others did before him, that it was necessary to distinguish between nephritis in the sense of the pathologist and Bright's disease in the clinical sense. And a few months ago at the meeting of the German Naturforscher und Aerzte, the brilliant Munich clinician, Friedrich Müller, (2) recommended to drop the term Bright's disease because it had lost its original significance; neither does the term nephritis fit all the forms which we include in it. He proposed to substitute the name "nephrose," which has the merit not to signify anything in particular. Now how do we diagnosticate Bright's disease or nephritis or nephrose? I venture to say that ninety-eight physicians out of every hundred will promptly answer: by the presence in the urine of albumin and casts. But let me read to you a passage of an important paper which appeared about a year ago on the *Limitations of Urinary Analysis* by one of the advanced clinicians of the younger generation in this country. Richard C. Cabot (3), of Boston, concludes his studies with the following words:

"The attempt to estimate the anatomical condition of the kidney by the measurement of albumin and the search for casts is fallacious in the extreme. The most reliable data about the urine are those most simply and quickly obtained, the twenty-four hour quantity, the specific gravity, and the color."

That is startling indeed. Since Hippocrates physicians were instructed to study color, quantity, and all possible physical properties of the urine; for

* Read at a meeting of the East Side Physicians' Association, March 16, 1906.

more than two thousand years physicians all over the world employed these simple data which Cabot states to be the most reliable to estimate the anatomical conditions of the kidney, and nevertheless it is only eighty years that we have known of these anatomical conditions, and known how to diagnosticate them. Bright (4), who in 1827 told us for the first time of the diseases of the kidney which are now designated by his name, learned to diagnosticate them during life by nothing else but the presence of "coagulable urine" in cases of dropsy. In reading Bright's report we find that of the fourteen cases with autopsies he diagnosticated correctly during life the anatomical conditions of the kidney in eleven of them, after he studied the relations of three cases. The presence of coagulable urine helped Bright to make uninterruptedly correct diagnoses at the very first attempt, while the innumerable studies of the simple data of the physical properties for thousands of years proved to be futile.

Would these latter studies do better service in the future? But even if I suggest that my esteemed friend in his eagerness to expose false claims went a little too far in his discrediting of albuminuria as a diagnostic aid in diseases of the kidney, he certainly had sufficiently provoking causes for his pessimism. To quote only one striking result of his studies in the Massachusetts General Hospital: Of twenty-one cases which the careful studies at the autopsy revealed to be acute glomerular nephritis "only five were diagnosticated as nephritis during life, and not one was recognized as acute nephritis." Neither is Cabot alone with such experience. In a recent painstaking scholarly study from the Johns Hopkins Hospital by Charles P. Emerson we find, for instance, that of eleven cases of extreme chronic passive congestion, chiefly heart cases, yet anatomically with no microscopic sign of nephritis, in eight the clinical diagnosis of nephritis has been made. Again 75 per cent. of error in diagnosis. With experiences like these, and many other disturbing facts we cannot wonder that a spirit of distrust is gradually pervading the medical literature here and abroad against the reliance upon urinary examinations, especially against the over estimation of the diagnostic value of albumin and casts.

However, the present state is only an accentuated phase in the development of this chapter of medical science, and it did not spring up abruptly either. Permit me to give a brief outline of the beginning and growth of the various studies and observations which gradually led up to the present state.

Soon after the appearance of the publications of Bright, nephritis became the subject of much study among pathologists and clinicians. Rapid strides in gross and minute anatomy were made, but controversies also soon began and wrangles followed ever since. But this was confined to the pathology of Bright's disease, to the definitions, divisions, interpretations, and classifications. In the domain of diagnosis there was peace. For nearly half a century after the first publication of Bright it passed without any contradiction that the presence of albumin in urine means nephritis. By an observation of Claude Bernard upon himself, namely that after eating raw eggs, ovalbumin would appear in his urine, some literature grew up in the fifties of the last century on that subject, but it did not affect the pathognomonic value of the albuminuria in Bright's disease. Neither was it affected by isolated mention of some few cases of transitory or continued albuminuria "without casts in the sediment" and without the unfavorable course of a chronic nephritis (Frerichs, 1851; J. Vogel, 1856; Ultzmann, 1870). The first publication which effectively called attention to the occurrence of albuminuria in apparently healthy persons was that of Leube (6) in 1878, who reported the results of examination of the urine of 119 apparently healthy soldiers. In the same year also Dukes (7) began his series of communications on the albuminuria of adolescents, to which W. Gull (8) had called attention a few years previously. In the year following, Saundby (9) published his article on the diagnostic value of albuminuria based upon the examination of 145 male patients, 105 of whom had albumin in their urine. The literature on that subject began to grow rapidly and the discussion became quite animated. We may state that Leube undoubtedly was the first one to use the term "physiological albuminuria." But in the sense as it is used now,* or at least as it should be used, the conception of physiological albuminuria was first urged by Senator (1882) (10), and its actual existence was demonstrated especially by the elaborate experiments of Posner (1886) (11). Physiological albuminuria means that the urine of every normal person contains traces of albumin. The amounts are very small, only about one milligramme per litre, and can be demonstrated only after evaporating large quantities of urine. What Leube means by physiological albuminuria is the more or less frequent occurrence of albuminuria under conditions which are still to be considered as physiological.

I wish to call attention to a fact which was apparently overlooked by most writers on that subject, namely that the oldest writer who claimed that albuminuria is a physiological phenomenon is Dr. Bostock, the chemist, or "the laboratory man," as we would say to-day, who made the urine analysis for Bright. With the interest we may attach to that matter, you will pardon me if I read a part of Bostock's letter to Bright which contains this statement. It reads as follows:

"I may appear to be encroaching upon your province, if I offer any remarks upon the inferences which may be drawn from the presence of the albuminous matter in the urine, but as my remarks will principally refer to the chemical nature of the fluid, you may perhaps think them not altogether out of place. It is commonly said that the presence of albumin in the urine is a morbid occurrence, and it has even been supposed to be a pathognomonic symptom of a certain state of the constitution, or still more, to be an indication of the existence of certain specific diseases. The first of these positions may be literally true, if we regard the albumen as existing in a state which is coagulable by heat; but it must be admitted on the other hand, that an albuminous state of the urine is produced by such a variety of circumstances, and many of them of so trifling a nature as to render it almost a constant occurrence. In a great majority of cases it may be detected in the urine of persons in apparent health by means of the appropriate tests. In my own person I have very

* See Senator, *Deutsche medizinische Wochenschrift*, 1904, No. 50.

seldom found the urine entirely free from it, and I have observed it to be increased to a considerable amount by the slightest cause."

Bostock's view on the physiological nature of albuminuria is as radical as that of any of the subsequent writers. Bright published Bostock's letter without any comment, but he continued even after the receipt of that letter to consider the presence of albumin in the urine as a pathognomonic symptom of the existence of a certain specific disease. And why should he not? Did he not meet with and publish also cases of dropsy due to other diseases than that of the kidneys in which the urine proved to be free from albumin, and this by the examination of the same Dr. Bostock?

The physiological albuminuria in the sense we have defined it above has apparently only a theoretical interest. It satisfies the mind of some investigators to know that the pathological appearance of albumin in the urine is only a quantitative transgression of the normal conditions. The amount which is normally present in the urine is, as we have stated before, too small to be detected in the comparatively small quantities which we usually examine and by the reageants we usually employ. According to Dreser (13), Heller's test will bring out albumin if present in the proportion of 30 milligrammes to the litre. The potassium ferrocyanide test is a little more sensitive, it brings out albumin when present in the proportion of 20 milligrammes to the litre. However, some of the reagents are very sensitive and are capable of demonstrating albumin even if present only in very minute quantities, and here the question of physiological albuminuria might have a practical bearing indeed. For instance, Spiegler's reagent (14) demonstrates albumin in a dilution of 1 to 350,000. Now Spiegler claimed that scabies is accompanied by albuminuria because by his reagent he found albumin in the urine of fifty cases of scabies. Hübner (15), however, reported recently that in the examination of the urine also of fifty normal individuals with Spiegler's reagent albumin was found to be present almost in every case.

The method inaugurated by Leube, i. e., of examining by current methods the urines of large numbers of healthy individuals which, as has been stated before, was subsequently employed by many other investigators, brought out two instructive practical results. In the first place it was safely established that there are a number of perfectly healthy individuals whose urine, even the first passed after a night's rest, shows perceptible quantities of albumin. The percentage of such individuals varies considerably with the different observers. Thus we find the figures of the following authors to vary as follows: Leube (16) in his first series about four per cent.; Fürbringer (17), about twelve per cent.; Grainger Stewart (18), thirty-three per cent.; Capitan (19), about forty-four per cent., and finally Chateaubourg (19a), 76 per cent. We should remark here in parenthesis that Capitan as well as Chateaubourg employed Tanret's reagent, for which it is claimed that it is capable of demonstrating albumin in a dilution of 1 to 200,000, that means five milligrammes to the litre. Hence, perhaps, these high percentages. Furthermore, it seems that the further the investigators continued to search, the higher their percentages grew. Thus Leube's (20) second series of observations made on one hundred soldiers only four years ago gave him as high a figure as thirty-four per cent. of healthy individuals with albuminuria. Interesting is the statement recently made by Schreiber (21) who made continued observations for the last twenty-five years in the poliklinik of the University of Königsberg. The examination of the first 200 individuals gave an average of about four per cent., next it rose to nine per cent., a few years later it came to fifteen per cent., and now it is already about twenty per cent. The amount of albumin found in these cases is often one per mille and more.

The second important and practical point which was brought out by the first studies of Leube was the influence which muscular activity exerts upon the appearance of albumin in the urine of healthy persons. Leube's observations were made as stated before upon soldiers who had to go through their military exercises every forenoon. The urine was examined soon after and the lesson it taught was unmistakable. In the first series the occurrence of albuminuria was in sixteen per cent. as against four per cent. for the morning urine, and in the second series it was fifty-nine per cent. as against thirty-three per cent. These results were repeatedly confirmed in similar investigations and in studies upon bicycle riders, football players, etc. We might remind here of the report made a few years ago of observations made by Darling (22) on the Harvard crew; the training always brought out perceptible albuminuria.

Muscular effort as a factor in the causation of albuminuria manifests itself in many ways. Marcacci (23) reported, about simultaneously with Leube, that movements with his arms for about ten or fifteen minutes produced the appearance of albumin in his urine.

The occurrence of albuminuria during labor as was reported by Aufrecht and Friedenberg (24) has probably its root also in muscular effort.

The fact that albumin occurred more frequently in the urine collected about noon stimulated investigations regarding the variability of the albuminuria during the course of the day independent of muscular effort or diet. Some cases were found, indeed, in which at certain periods of the day, especially before noon, the urine contains albumin regardless of rest and diet. This led Pavy (25) to introduce the term "'cylic albuminuria," which, however, covers also the type of albuminuria I am going to mention presently.

In 1887 A. W. Stirling (26) described a large group of cases which were characterized by postural albuminuria, i. e., the urine of these individuals would be free from albumin as long as they remain in a lying position; albumin would appear, however, as soon as they got up. This type is now known as *orthostatic* or, as Heubner and some of the German writers prefer to term it, *orthototic* albuminuria. Just recently the casuistic of this form of albuminuria began to multiply. The individuals affected with orthostatic albuminuria as a rule show otherwise no pathological signs, especially no manifestations indicating a distinct form of nephritis. According to Leube albumin appears in these cases only in a standing position, sitting does not have such an effect. Neither does any muscular effort

bring on albuminuria in these individuals as long as they retain their lying position.

Another important type of physiological albuminuria is that first described by Gull and Dukes as *albuminuria of adolescence* and which the Germans at the instance of Leube now term *Pubertäts-Albuminurie.* Dukes who studied the manifestations of this form of albuminuria in a school at Rugby, England, for over thirty years, states that it occurs in about eighteen per cent., which coincides about with the recent statement of Lommel (27) and Matthes who studied it in over 500 apprentices in factories in Jena. It occurs mostly at the age between fourteen and twenty. In some the albumin seemed to be temporarily so high as to reach 0.5 per cent. Some writers speak of both last mentioned forms of albuminuria as being one and the same type. While it is true that a good many afflicted with orthostatic albuminuria are adolescents, there are on one hand a good many more adolescents with albuminuria not of an orthostatic type, and on the other hand orthostatic albuminuria occurs also at ages far above adolescence. It seems therefore justifiable to consider both forms of albuminuria, at least for the present, as separate types.

Temporary albuminuria can be brought on by a number of causes. Since Grainger Stewart it is known that in many individuals cold baths will bring on albuminuria. Opulent meals even without raw eggs might sometimes be the cause of the appearance of albumin in the urine, and some authors speak of *alimentary albuminuria,* putting it on a parallel with alimentary glycosuria. Mental strain and great excitement occasionally are capable of bringing on a considerable albuminuria even in such individuals who are not responsive to other influences. Fürbringer (28) described such an instructive case. From him (29) I have also learned that there is a growing belief in the existence of a neuroasthenic albuminuria in this country. Personally I did not come across an authoritative statement to this effect in the literature of this country. Of course, I am not speaking of albuminuria spuria. A few young women have albumin in their urine shortly before menstruation. It probably can be classified as belonging to the type of the albuminuria of adolescence. Schreiber (30) described some years ago that compression of the thorax produces albuminuria. This in combination with muscular effort might be responsible for the occurrence of albuminuria in musicians who play wind instruments (31). It was recently described by Schreiber (32) and others that bimanual palpation of the kidney brings on temporary albuminuria in previously albumin free urines. Intestinal disorders still falling within the physiological latitude, like constipation and moderate diarrhœa, are also capable of causing albuminuria.

To recapitulate briefly: The urine of all normal persons contains minute quantities of albumin. This is physiological albuminuria.

A number of individuals have fair traces of albumin, demonstrated by the usual reagents even in their morning urine, that means in the urine passed after a night's rest. A still larger number of individuals show albumin in their urine after muscular effort. This phenomenon is still within the physiological latitude.

About one fifth of all persons have during adolescence some degree of albuminuria. Some of these and some other individuals show an orthostatic form of albuminuria. These forms of albuminuria are not physiological. Senator (33) who does not want to consider them as exactly pathological calls them, however, abnormal. He and other writers are somewhat pessimistic with regard to the prognosis of these cases. Dukes (34), however, who has seen more of these cases than anyone else and who had opportunities to examine again many of these individuals in their manhood, asserts that as a rule albuminuria of adolescence disappeers completely.

There are cases of simple albuminuria which do not belong to any of the types described so far. They last for many years without showing any cyclic or postural character. The patients never had or have other symptoms indicating a disease of the kidney, or in fact any other disease. Those are the forms which some physicians call idiopathic, essential, or functional albuminuria. It is, however, instructive to find a clinician like Stintzing (35) stating that in a case of this type even after eighteen or nineteen years' standing it was still impossible to decide whether it was not nephritis after all.

Albuminuria in anæmia or albuminuria in fever which disappears with the defervescence may be quoted as instances of pathologic albuminuria which are not of nephropathic origin. However, this is not beyond dispute. We might quote here as a qualified instance of physiological albuminuria the instructive observation of Shattuck (36), that albumin was present in the urine in seventy-five per cent. of his patients who were above fifty years. However, if we look at this fact in the light of the statement recently made by Councilman (37), namely, that "if the diagnosis of chronic interstitial nephritis is made in all cases which show some degree of atrophy of parenchyma and increase in interstitial tissue, few individuals over fifty escape it." We have to think that albuminuria of those who did not escape it is probably not of a physiological character.

The history of the diagnostic value of casts is in some respects a repetition of that of albuminuria. From the time of their discovery by Henle in 1844 (38) until 1891 casts were considered as a pathognomonic sign for Bright's disease and as a sort of a higher court; where albuminuria left a doubt, the presence of casts in the urine gave the final positive decision. With the introduction of the centrifuge, which greatly facilitated the collecting of microscopic elements, observations gradually accumulated which threaten to deprive the casts of their unerring judicial power. Radomski (39), Kossler (40) and others have reported a number of cases of various diseases in which hyaline and granular casts appeared in the urine without having been accompanied by albumin. Some of these cases came to autopsy and it was established that the kidneys were free from pathological processes. On the other hand, Krauss (41), Niedner (42) and other writers have recently reported cases of chronic parenchymatous nephritis in which the urine contained numerous casts without albumin. Of more interest to us here is the occurrence of casts in the

urine in normal or nearly normal cases. As in albuminuria unusual muscular effort causes the outpouring of casts. J. Müller (43) observed it after bicycle races, Macfarland (44) after football games, and Darling (45) in the Harvard crew. In all of these cases the cylindruria was accompanied by albuminuria. Constipation also causes cylindruria. In a series of experiments by Wallerstein (46) on animals the occlusion of the anus soon caused the appearance of hyaline, granular and epithelial casts in the urine. In a series of experiments by Glaser (47) on persons who were not accustomed to alcohol, the drinking of beer produced cylindruria in about twenty-five per cent. Luthje (48) found that sodium salicylate causes the appearance of casts in the urine.

Henle (44), the discoverer of casts, noticed it in a normal kidney. Litten (50) with the first presentation of Thorbeck's centrifuge reported to have observed an occasional hyaline cast in the urine of perfectly normal persons. It was, however, not until the past year that we were surprised with reports telling us that at least every other normal person is passing casts in his urine. Lüthje who, as mentioned before, studied the effect of salicylates upon cylindruria, employed for his centrifugalization not the entire urine but only the part which contains the nubecula, the cloud which frequently forms in the urine after standing. Klienberger and Oxenius (51) in their attempt to verify the statements of Lüthje employed also his method in the examination of normal urine and thus found out that as many as seventy-eight per cent of normal individuals have casts in their urine. When the entire urine is centrifugalized so much material is thrown down that the delicate casts are covered or destroyed. The observations of Klienberger and Oxenius were recently confirmed by Gentzen (52) who by using the method of Lüthje obtained casts in fifty-nine per cent. of normal cases.

We are then at present with regard to the occurrence of casts in urine nearly in the same position as we are with regard to occurrence of albuminuria. And even if we hesitate to speak of a physiological cylindruria we have nevertheless to acknowledge that cylindruria is nearly a normal phenomenon occurring very frequently in normal individuals, and is easily brought on by the same factors which produce albuminuria.

That is the present status. What did we learn?

We have learned that the kidney transudes or secretes normally a very small amount of albumin, and connected with it or parallel to it an occasional cast is formed within the tubules. The processes which are concerned in the transudation of albumin and formation of casts are perceptibly stimulated by such factors as muscular effort, excitement, etc., which form an integral part of the normal life. During adolescence, when the body is passing through a transitional period, when all the organs manifest an increased sensitiveness, the processes controlling the activities of the kidney possess also an increased susceptibility to stimulation, the daily factors affecting the daily life have a profounder effect. On the other hand when stronger stimuli affect all parts of the body like disease, poisons, and injuries, but which have no direct effect upon the kidney, it happens, as we may expect, that the normal processes of the kidney respond with an increase of activity, with a greater transudation of albumin and formation of casts. This may occur as was just stated without any change in the local mechanism of the kidney. But in all these cases the increased activity subsides as soon as the stimulation is interrupted and we see indeed that for instance the abnormal quantity of albumin disappears as soon as the fever disappears or as soon as body or mind are at rest again. Hence *there is in the first place this one difference between the albuminuria and cylindruria brought on by normal, abnormal, or pathological stimulations of the normal kidney and the albuminuria and cylindruria due to a disease of the kidney itself. It is of only a temporary nature in the first instance and it is of a more or less permanent character in the latter intsance. And there is another important difference: The albuminuria and cylindruria are a good deal more extensive, when they are caused by a disease of the kidney itself, than when only an increased stimulation is at the bottom of their occurrence.*

From the history of albuminuria and cylindruria as I outlined it here briefly we may learn another and to my mind important lesson. As long as the detection of albumin in urine was carried out by methods incapable of revealing minute quantities, and the casts were looked for in deposits obtained without the aid of the centrifuge, albuminuria and cylindruria were of great assistance in arriving at a correct diagnosis. With the invention and use of finer reagents for albumin and more subtle methods for collection of casts, albuminuria and cylindruria began to lose their diagnostic importance. It is like turning up too much light to detect the transparent hyaline cast; it is the dim light which brings out the slight differences in refractility. Bright with his simple method of boiling the urine in a spoon over a candle made a correct diagnosis in every case; while Spiegler, to quote an instance, with his very fine reagent for albumin was misled to diagnosticate nephropathic conditions in fifty cases of scabies which he accidentally undertook to examine.

The last point illustrates to my mind one of the pitfalls of modern medicine. I risk to go on record with the statement that modern medicine with its tendency to employ indiscriminately in the practice of medicine the finest methods used in the sciences of medicine for the study of normal conditions is not infrequently on a wrong path. It is often simply a logical confusion and it makes mischief. It is a logical confusion to employ in the search for pathological conditions methods which are more appropriate to obliterate the line dividing the normal from the pathological. And it often makes great mischief. A trace of albumin by a delicate reagent and a hyaline, granular, or epithelial cast which a fine working centrifuge brings to light are capable of destroying a man's happiness, incapacitate him for business, and for supporting his family, and drive him into the hands of the unsavory metabolism specialist.

I agree then with the view that in making the diagnosis of Bright's disease the reliance upon the presence of albumin and casts in the urine might be indeed fallacious in the extreme, but only when employing too fine methods and relying upon single

examinations. *The continuous presence of good traces of albumin and casts of different varieties after the patient was put to rest and withdrawn from injurious influences speaks for Bright's disease.* If we confine ourselves to that we will hardly ever fall into an error of commission. That, even under the most favorable conditions, we should not rely upon albuminuria and cylindruria alone for the making of a diagnosis, goes without saying—albuminuria and cylindruria are no pathognomic symptoms, they should form one link of a chain of signs and symptoms which point to the diagnosis of Bright's disease. As to what constitutes Bright's diseases I shall say only this: I believe that until we have a good deal more knowledge of the function of the kidney and the activities of its specific tissues and complicated mechanisms, we better leave the present situation unchanged; new classifications and new names do not make new and better knowledge. For all practical purposes we would for the present get along in the practice of medicine, it seems to me, if we identify Bright's disease with the one type of nephritis: the parenchymatous, which can be either acute, subacute, or chronic. In the diagnosis of chronic interstitial nephritis, be it of the primary, secondary, or arteriosclerotic variety, albumin and casts never played an important part.

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DISEASES OF THE DIGESTIVE ORGANS IN THE PATHOGENESIS OF ARTERIAL HYPERTENSION.*

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The splanchnic circulation is at present regarded as one of the most important regulatory mechanisms in the control of general arterial pressure. When we consider in relation to this fact that this circulation is substantially coextensive with the digestive apparatus, one is almost led, on a priori grounds, to assign to the varying conditions of these organs an important rôle in the modification and control of arterial tension. I was, therefore, greatly surprised to find that in the literature on blood pressure, which includes up to the present time, about four hundred titles, this question has never received a formal discussion. In the volume on *The Clinical Study of Blood Pressure,* by Dr. Theodore Janeway, which is the most recent and exhaustive review of the subject with which I am acquainted, the possible ætiological relationship of digestive disorders to arterial hypertension is not even referred to. It was my intention to supplement the clinical and physiological review of the subject by some experimental investigations, which circumstances have made it impossible to complete, and which will therefore, have to be deferred until some future time.

In considering the various possible relationships of morbid states of the digestive apparatus to the vascular system it would seem, a priori, that the general vascular tension might be influenced in two ways: 1. Through reflex nervous influences originating especially in the gastrointestinal mucosa and in the peritonæum, which is in close relationship to it, and also perhaps, from other portions of the

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splanchnic area; and 2, by the effect produced by the absorption of various chemical substances, especially bacterial toxines and the end products of perverted digestion. With reference to the first of these methods it may be said that while the physiology of the vagus and sympathetic filaments, which supply these parts is not fully understood, enough is known to justify the statement that modifications of vascular tension may be produced through these channels. The slightest reflection upon the physiological and anatomical conditions presented will, I think, convince anyone of the reasonableness of this proposition. The tension of the fluid in the bloodvessels is the resultant of three factors, viz., the force of the heart's contraction, the volume of the circulating fluid, and the resistance offered by the peripheral circulation.

It is, perhaps, not too much to say that the last condition is, if not more important, yet more constantly operative than the others; and variations in the calibre of the terminal vessels under ordinary conditions very nearly completely control the fluctuations of intravascular pressure. The vasomotor mechanism, which regulates the blood supply to the abdominal and other organs, is, of course, the medium through which this peripheral resistance is modified, and such facts as those observed in the experiments of Jastreboff, who found in experimental laparotomy upon animals a considerable rise of blood pressure at the moment of incision through the peritonæum, and those of Cook, who found a marked rise of pressure upon stimulation of gastric mucosa with capsicum, are very suggestive, and taken in connection with many other investigations along these lines justify the assumption that important modifications of the vasomotor mechanism and, of course, of vascular tension may thus be induced. It is perfectly clear that these influences, both in their local effect upon the splanchnic circulation, and in their more remote effects upon the heart and general vascular apparatus may operate in both directions. We know for instance that stimulation of the vagus filaments produces a fall in the general blood pressure by decreasing the frequency of the heart action and diminishing the total volume of blood in the arteries; but experiments such as those of Cook with capsicum, would seem to indicate that in the gastric mucosa at least, vasoconstrictor stimulation was predominant.

We have secondly to consider the influence of the chemical products of digestion, either normal or perverted, of bacterial products, especially in the lower part of the intestinal tract, and certain secretions, especially those of the liver. It is probable that the most important and most sustained effects upon the vasomotor apparatus and consequently upon vascular tension are derived from these or similar sources. In other words, we must look to the constituents of the circulating fluid for the explanation of many of the most important changes in the vascular supply and vascular tonus. It is thus that adrenalin acts when injected intravenously, producing a powerful vasomotor constriction, which correspondingly raises the blood pressure; and it is thus that the constituents of bile act in the opposite direction leading to the lowering of blood pressure.

One of the first questions which naturally arises in this connection is the influence of normal digestion upon blood pressure. The evidence is somewhat conflicting; Oliver, for instance, stating that there is a constant rise, which he says persists far beyond the variations caused by muscular action and temperature; while Weiss and von Recklinghausen have found a gradual fall when digestion was in progress. I have myself made a number of observations on healthy subjects, and my results have agreed with the last named observers. The fall was never very considerable, rarely amounting to more than 5 or 6 m.m. of Hg. and sometimes the pressure remained unchanged, but in no instance did I find a rise. There are so many factors to be taken into account in the digestive processes that it is difficult to analyze and estimate them. It seems probable that the absorption of the end products of digestion would stimulate the vasomotor mechanism and thus lead to a rise of blood pressure, but this absorption is anticipated by the reflex vasodilatation, which occurs as a regular physiological event in any organ which is performing an important function, and this would offset, and perhaps more than offset, the possible rise which might otherwise take place. In my own observations there was later a rise of pressure following the initial fall, and it is possible that the discrepancy between the observers mentioned may be due to the different times of observation. Whether the digestive processes under pathological conditions would have a reverse effect or not, is a question which we are not as yet prepared to answer. It seems quite probable, however, that the accumulation within either the stomach or intestines of irritating indigestible débris of a more or less solid character, together with the chemical products of perverted digestion and bacterial processes may, like capsicum, exert a pressure raising influence upon blood tension through the reflex nervous mechanism above referred to. Such cases as the following are at least suggestive:

A lady, thirty-five years of age, consulted me on account of severe gastric disturbances, the result of achlorhydria. The urine and blood were normal. Her blood pressure was 150. With a strict diet and suitable treatment for two weeks the stomach symptoms disappeared, and the blood pressure dropped with the improvement to 120.

In how far the perversion of the normal secretions of the digestive tract may influence vasomotor states and through them arterial tension is another problem which cannot at present be solved. The depressing effect of bile salts is one of the conspicuous facts to be borne in mind in this connection, and it may be that any interference with the normal secretion and normal circuit of these salts might, by the removal of a normal inhibitory influence, permit the vasoconstrictors to increase peripheral resistance, which would, of course, raise arterial tension.

When we come now to certain fairly constant results of digestive disorders in the shape of exaggerated bacterial action, a field is opened up which, it appears to me, is of the greatest importance in this connection. Perverted digestion is nearly always tantamount to delayed digestion, and it is well known that any great prolongation of the digestive processes usually weakens the action of the enzymes and bacteriolysines, and favors the prolific growth of the intestinal flora. From the operation of these causes two conditions usually result,—viz.: 1. The undue accumulation of intestinal gases, which in-

crease intraabdominal tension and which may to a greater or less extent interfere with the physiological expansion and contraction of the volume of the splanchnic circulation, and, 2, the production in great excess of the numbers of microorganisms and the chemical products of their growth and probably of their virulence as well.

The importance of the first factor may possibly not be very great in the direction of increased pressure, but the second, in my opinion, furnishes to a large extent the key to the relationship, however large or small it may be, which exists between diseases of the digestive organs and arterial hypertension, which is our present thesis. The pathological action of these bacterial products must be for the most part, if not entirely, due to their effect upon the cardiovascular mechanism after their absorption into the portal circulation. This raises at once three important questions: 1. Can chemical substances acting through the blood, produce a degree of hypertension sufficiently marked and prolonged to constitute an important morbid state; 2, can these chemicals act indirectly as well as directly; and 3, are the products of the intestinal flora capable either directly or indirectly of producing such results?

With regard to the first question, there is not the slightest doubt that certain chemical substances, introduced into the circulation, will produce a rise in the arterial tension. Of these adrenalin may be taken as a type. The physiological effects of this substance, however, are very transient, and the pressure quickly falls back to its previous level. It would seem, at first sight, that a transient influence of this sort could not be regarded as an important factor in the production of a more or less permanent hypertension. In fact it has been assumed and boldly stated again and again that the regulatory mechanisms which have to do with the blood pressure are fully capable of counteracting such influences. This, however, is only true within certain limits, and I am fully convinced, very largely on the ground of clinical observation, that hypertension to all intents and purposes permanent in character and serious in degree may be produced by deleterious substances of various sorts, which either stimulate the vasoconstrictors, or inhibit the vasodilators, or possibly both. In fact, many of the cases in which serious degrees of hypertension are supposed to be the result of organic vascular change are simply the result of a constant vascular hypertonus or spastic condition of the muscular fibres of the arterioles, and will yield completely to the sustained effects of vasodilators cautiously but energetically pushed to the limit. I will briefly recite such a case.

Mrs. D., age seventy-four, was suffering from constant substernal pain with severe exacerbation upon the slightest exertion, with marked dyspnœa and intense headache. These symptoms had been present to a greater or less extent for a year or more, but for a week had been extreme in degree. The heart was markedly enlarged, the left border being one and a half inches too far to the left. There was no bruit, but the second aortic sound was enormously accentuated, and the blood pressure was over 200 with a 12 centimetre armlet. The temporal and radial arteries showed the characteristc changes of well advanced arteriosclerosis. Here now was a case of arteriosclerosis, apparently typical in its character in which the hypertension was presumably the result of irremediable organic changes in the peripheral vessels with, of course, secondary heart involvement. Nevertheless, as the condition was desperate I decided to attempt a reduction of the blood pressure at all hazards by the use of vasodilators. I began with two minims of a one per cent. solution of nitroglycerine every four hours, increasing the dose three to four drops each day until fifteen drops were reached. Up to this time there had been no distinct impression upon either the symptoms or the arterial tension, although the potency of the solution was demonstrated in other cases. As this dose was passed, however, a slight fall began to manifest itself, and in three or four days the pressure had been reduced to 135, with absolute relief of all the symptoms, with a maximum dose of about twenty drops. (I have given over thirty drops four times a day.) The patient was able to sit up and walk around the room without exciting anginous paroxysms, and had been translated from a condititition of great torture and impending death to one of perfect comfort.

Now, no one will contend for a moment that the nitroglycerine had removed any of the organic changes present in the heart and bloodvessels. There is, in fact, only one possible explanation and that is that the severe symptoms present in this case were the result of a persistent spasm of the arterioles so extreme as to require for the maintenance of the circulation a tension which threatened the life of the patient; remitting slightly, but never intermitting for weeks and months. The quantity of etherial sulphates and phenol found in the urine in this case told the story of a circulation surcharged with toxic material which had kept up this persistent arterial spasm until an antidote was found in the heroic use of a vasodilator.

This observation does not stand alone, but I think that standing by itself it proves that chemical products can maintain arterial hypertension in the face of the numerous defensive arrangements provided by Nature to protect the organism against this accident. It is impossible to experimentally reproduce the gradual evolution of a pathological state. Pathological processes may be and perhaps usually are incessant, and the supply of toxic material, unlike the experimental introduction of graduated doses at definite intervals, may be constant. As additional proof that vasomotor stimulants contained in the circulating blood may give rise to a serious and permanent hypertension, I wish to cite the facts concerning nicotine, and lead poisoning, and uræmic intoxication. Nicotine, especially when inhaled in the form of smoke, produces a prompt and marked rise in arterial tension, which persists for several hours; so long, in fact, that according to Cook, if repeated several times a day it becomes continuous. This undoubtedly plays an important rôle in the chronic pathological processes of habitual smokers. In the circumstances of chronic lead poisoning again which occupies a conspicuous position in the ætiology of arterial hypertension and arteriosclerosis, we find strictly corroborative facts. Here again the persistent effect of a chemical poison is demonstrated by the fact that the heightened blood pressure falls with the elimination of the lead, again proving that continuously high pressure is not necessarily the result of organic vascular change. Uræmic hypertension is further clearly the result at least in great part of the retention in the blood of excrementitious material, and the observations of Gross, Laquer, and Cook, which I

am able to corroborate by my own observations, show that the hypertension rises and falls with the phenomena of autointoxication. It does not seem necessary to adduce further facts in support of the contention that chemical poisons may and do maintain for an indefinite period hypertension of a serious and even dangerous degree.

The second question, as to whether these chemical poisons can operate in a circuitous and indirect manner in the absence of a direct pressure raising action is entitled to an affirmative answer. In proof of this it is only necessary to offer the well known clinical facts of chronic alcoholism in conjunction with the immediate physiological effects of alcohol upon the circulation. We are abundantly justified upon purely clinical grounds alone in assigning to alcohol a prominent place in the ætiology of arteriosclerosis with its associated and, probably, antecedent high arterial tension. In spite of this fact it has been demonstrated by Cook, Cabot, and others that the immediate effect of alcohol is not a raising but a lowering of the arterial tension. The final result of heightened blood pressure, which undoubtedly occurs as a sequence of chronic alcoholism cannot be explained, as is the similar condition resulting from chronic nicotine poisoning, by the effects of the alcohol upon the vasomotor mechanism, but must be regarded as a secondary result of various remote structural changes together, of course, with certain anatomical alterations in the cardiovascular apparatus. These latter may tend directly to the production of a heightened arterial tension; but beyond this and of probably equal importance, are the functional and nutritional disturbances occuring as a result of structural changes in other important organs which lead to the accumulation of toxic material in the blood. In both of these ways undoubtedly alcohol produces its effects even though it is a vascular depressant and lowers the blood tension appreciably. The bearing of these observations upon the question of intestinal toxines is sufficiently obvious. In order to demonstrate their importance it is not necessary to show that their immediate physiological effect is a heightened arterial tension, as they may act like alcohol in an indirect manner through the perversion of nutritional metabolic and eliminative processes.

Coming now directly to the third question, that concerning bacterial toxines in the intestinal tract, and exceptionally in the stomach as a factor in the production of arterial hypertension, we are confronted by the greatest difficulties. Anything like a systematic study of the contents of the intestinal tube in transit through its different segments is obviously impossible. It is probable, however, that the most important pathogenic bacterial processes occur below the cæcum where they are, fortunately, somewhat more accessible to study although the difficulties are still well nigh insurmountable. We have to deal with a profuse variety of organisms, some fifty in number, some of which, the streptococcus and colon groups for instance, we know are capable of assuming pathogenic rôles of the most virulent character.

It is unnecessary to dwell upon the well known fact that the mass of fæces under ordinary conditions is composed principally of bacteria, further than to emphasize the enormous possibilities of such quantities of microorganisms in the production of chemical products possessed of varying degrees of toxicity. We do not know precisely to what extent soluble toxic products are excreted by these organisms individually and collectively. We do know, however, that the dominant organism in the lower intestinal tract,—viz.; the bacillus coli communis contains within itself toxines of astonishing virulence. Vaughan and Cooley have shown that the substance of the pulverized organism is so intensely virulent that 0.2 milligramme, equal to about 1/300 of a grain will kill a guinea pig weighing 200 grammes. Assuming the same susceptibility per kilogramme of weight, six centigrammes or about one grain would be fatal to an average human being weighing seventy kilogrammes, or about 150 pounds. They tell us, it is true, that under ordinary conditions the toxines contained in the germ cell do not diffuse from it into the culture medium; but the ordinary conditions of a culture medium in vitro may not prevail in the intestinal tract; and it cannot be denied that there is a possibility of such a disintegration of the cell wall as will liberate considerable quantities of these toxines. For instance, these same investigators have shown that digestion of the colon bacillus liberates its intracellular toxines without modifying their virulence.

Now, proteolytic ferments have been demonstrated throughout the extent of the intestinal tract, probably not belonging to the succus entericus proper, but the residue of pancreatic ferments which have escaped destruction in transit. The quantity of these proteolytic ferments probably varies widely in different cases and under different conditions, and digestion of the microorganisms with the liberation of their toxines undoubtedly goes on to a varying degree throughout the extent of the intestinal tract. Then, again, bacteria are themselves active proteolytic agents when dealing with dead organic matter. A large proportion of the organisms in the lower bowel are dead, and possibly an autobacteriolysis occurs with liberation of unchanged toxines. It remains, furthermore, to be shown to what extent, if at all, bile salts and fatty acids and numerous other of the usual constituents of the intestinal contents may affect the diffusibility of these intracellular toxines through the cell wall. When we consider, in addition, that the bacillus coli communis is a pyogenic organism, which rôle it could not play without the extracellular diffusion of its toxines; that it penetrates the intestinal wall, and enters the circulation, and in its elimination through the genitourinary tract produces localized nephritic lesions and cystitis; that it invades the bile ducts producing various lesions; that it enters the peritoneal cavity producing fatal septic peritonitis; and that endocarditis, meningitis, hepatic abscess, and pleuritis are among its conquests, we are certainly excusable for questioning the impenetrability of the cell envelope in which these death dealing toxines are said to be securely sealed. When we place side by side with these facts the further fact that there are some fifty other organisms, less numerous, it is true, but some of them like the streptococcus, capable of producing fatal intoxication, we shall find that the possibilities for the manufacture of large quantities of intestinal toxines is certainly very great.

It may be objected, that to a large extent these are the normal condition of the intestinal tract, and that they, therefore, have no special relation to diseases of the digestive organs and especially of the gastrointestinal tract. Such an objection is not well founded, as the inhibitory action of the normal secretions is impaired in disease; and, further, the atony incidental to many gastrointestinal diseases affords unusual opportunities for germ proliferation; and, what is more important may so change the character of the culture medium as to greatly intensify their virulence and convert a perfectly harmless saprophyte into an intensely pathogenic organism. Such incidents are strictly in accord with the established facts of bacteriology.

The experiments of Vaughan and Cooley lead them to conclude that such of the bacterial toxines as found their way into the portal circulation were destroyed by the liver. This is very likely true under ordinary conditions and is strictly in accord with established facts; but the dosage may at any time be relatively too great for the defensive mechanism of the body which includes, besides the liver, various other agencies such as the antibodies of the blood, etc.; and disaster may ensue, as it occasionally does, in the form of acute fatal intoxication. More commonly, however, in the ordinary types of disease of the digestive organs, the capacity of the defensive machinery is only slightly exceeded either by increase of dosage or a weakening of functional integrity; and as a consequence chronic metabolic and structural disorders ensue. The latter type comprises the large army of patients suffering from the intoxications secondary to gastrointestinal disease.

Now, what is the precise relationship existing between these facts and the clinical picture of arterial hypertension? It may be that the available facts at present do not justify a dogmatic opinion. In the first place it must be admitted that a very large proportion of these cases suffer, for a considerable time at least, from hypotension rather than hypertension. Still, there has been a not very small group of cases coming under my own observation in which there appeared to be conclusive reasons for assigning the arterial hypertension to antecedent toxic conditions resulting from disease of the digestive organs. Furthermore, a careful review of the principal facts seems to me to bring this conclusion strictly in line with the teachings of scientific medicine. Whether these toxines act directly upon the vasomotor mechanism remains to be shown. In the multiplicity of organisms that exist it would seem quite probable that both pressor and depressor toxines might be formed, but in either event the facts connected with chronic alcoholism prove beyond a doubt that these toxines may give us arterial hypertension as a final result through their indirect effects upon the vital organs of the economy regardless of their primary influence upon blood pressure.

407 W. MAIN STREET.

Woven Catheters may be sterilized by boiling in saturated ammonium sulphate solution. Catheters and bougies may be kept asceptic if they are wrapped in gauze wet with the soap spirits of the German pharmacopœia.—*American Journal of Surgery.*

THE HIGH FREQUENCY SPARK IN THE TREATMENT OF PREMATURE ALOPECIA.

BY GEORGE M. MACKEE, M. D.,
New York,
Instructor in Dermatology at the New York University and Bellevue Hospital Medical College; Radiotherapeutist at the College Clinic.

Considerable confusion has recently been caused by the many different classifications of alopecia, each investigator originating a new division best suited to his own findings. The generally accepted classification is an ætiological division into congenital, senile, and premature, the first two of which will not be considered in this article. Premature alopecia is again subdivided according to its mode of origin into idiopathic, neurotic, seborrhœic, etc., etc.

Although considerable difference of opinion exists between the various authors regarding the exact relation of certain parasites to the various scalp affections, it is universally accepted that the majority of cases of alopecia are due to bacterial invasion.

Formerly the desquamative diseases of the scalp centered around pityriasis capitis as a type, but now Unna incorporates most of these conditions under eczema seborrhoicum capitis, a subdivision of true eczema, and which he considers responsible for a large percentage of baldness. He divides this condition into seborrhœa sicca, a dry scaly condition which he asserts is due to the bottle bacilli of Unna, and seborrhœa oleosa, a complication of this condition with the excessive secretion from the sudoriferous glands. Many authors agree with Unna's theory, but with the exception that most of them consider the oily state to be caused by a hypersecretion of the sebaceous instead of the sudoriferous glands.

Sabouraud, in his exhaustive work on the desquamative diseases, alleges that pityriasis is the starting point of all desquamative diseases of the scalp causing alopecia. According to his theory petyriasis capitis is a dry scaly condition, caused by the spore of Malassez, which is the same organism alleged by others to be the bottle bacillus of Unna.

When petyriasis becomes impetiginized or complicated with the staphylococci (morococcus of Unna) we have what Sabouraud calls a steatoid pityriasis, which closely resembles, if it is not identical with, Unna's seborrhœa sicca. Now, when to this condition is added an excess of oil we have an oily pityriasis in which Sabouraud states to find his oily bacillus, or what he designates as the séborrhée microbacillaire. He also averts that the first two conditions are superficial, while the latter is a deep seated affection.

It is not the intention of the author to enter into a discussion of relative value of the many different theories advanced upon this subject. For the purpose of this article it will suffice to recognize two general forms of premature alopecia.

First.—Loss of hair due to systemic and neurotic disturbances. Under this heading is included all cases of alopecia in which there is no evidence of the desquamative diseases. It also includes all grades of alopecia areata.

Second.—Loss of hair primarily due to bacterial invasion. This includes all the cases presenting evidence of local disease, with the exception of tenea, favus, etc. In short, the conditions usually known and recognized as pityriasis, seborrhœa sicca, and seborrhœa oleosa.

At a glance it will be seen that the successful treatment of alopecia depends upon the proper employment of the three following rudimentary principles:

First.—The use of parasiticides to destroy bacterial invasion.

Second.—The use of internal remedies and hygienic measures to improve the general health.

Third.—The production of an improved local circulation.

As has already been mentioned, in a vast majority of the cases of alopecia, the loss of hair is produced by a bacterial invasion, causing a condition usually called either seborrhœa sicca, or seborrhœa oleosa, depending upon the local condition found in an individual case. In many of these cases the hair will cease to fall out, and begin to grow again as soon as the cause of the trouble is overcome. In such cases all that is required is the daily use of a parasiticide. In cases of long standing associated with impoverished circulation and vitality it is often necessary to employ some irritant in addition to the above treatment. Many patients having an alopecia produced by worry, overwork, or other forms of nerve exhaustion will respond at once to regulation of the diet, attention to proper hygienic measures, internal remedies, and the local use of irritating or stimulating applications. There are, however, many cases of alopecia regardless of the cause which do not readily respond, and still many others unfortunately which do not respond at all to these methods of treatment, no matter how skillfully prescribed. It is the successful treatment of nearly one hundred such cases that gives to the author a desire to report observations covering a period of three years.

It seemed advisable in cases of alopecia from any cause which did not improve after the prolonged use of the usual methods to devote more attention to the local circulation. Working upon this theory strong solutions and ointments of corrosive mercuric chloride, resorcin, beta naphthol, salicylic acid, etc., were tried, but it was found that the hyperæmia produced was in most cases very transient, while in others blistering, scaling, and an undesirable congestion, lasting for several days or weeks, was the result.

The next experiment consisted of a constriction of the circulation by applying a broad rubber band around the head above the ears. This of course produced a congestion lasting as long as the band was allowed to remain in position. At first, this treatment appeared to be efficacious, but observations over several months proved it to be based upon erroneous principles, as what was required was a local vasomotor dilatation lasting several hours and causing an increased volume of blood to circulate through the capillaries, instead of a congestion produced by a venous stasis.

The vacuum cup was then tried, but when applied to the entire scalp at one time, it was found to act in much the same manner as the elastic band. When applied to small areas at a time, the result was more promising, but the treatment was too tedious to be considered.

About this time the high frequency current was receiving much attention from dermatologists. One of the first noticeable effects, when this remarkable current was applied to the skin in the form of a spark, was a hyperæmia which persisted some time after the treatment was given. The fact that this treatment was practically painless and produced such a desirable hyperæmia suggested the fact that it might be applied to the scalp in cases of persistent alopecia with gratifying results.

The beneficial action of the high frequency spark is twofold, both stimulating and bacteriacidal, and may be summarized as follows: Its prime action in the treatment of alopecia rests in its power to produce a vasomotor dilatation, causing a physiological hyperæmia lasting for several hours. This hyperæmia is mainly caused by the action of the actinic rays upon the vasomotor nerves. (These rays have been extensively and very successfully used in the form of the Finsen light in the treatment of alopecia areata.) Their action is materially enhanced by the severe electrical bombardment and also by the heat effects.

During the period of hyperæmia, which lasts from six to twelve hours, the hair follicles receive an increased blood supply, and increased resistance to germ invasion is established. The fact that this hyperæmia ceases after a few hours is very important, as when a hyperæmia lasts for several days or weeks it becomes a chronic congestion, causing a hypertrophy of the connective tissue cells, produces a soil of low vitality, and liable to produce very untoward results. The bactericidal properties of the spark is both powerful and penetrating. This effect is produced by the actinic rays, by the heat effects, and also by the production of large quantities of ozone. This ozone is practically produced upon the scalp and undoubtedly penetrates to some extent, for its odor can be detected some hours after a treatment.

Technics.—The unipolar discharge from any of the ordinary high frequency outfits as supplied with x ray coils may be used, but the Piffard hyperstatic transformer is to be preferred, because for this purpose it may be actuated by either the static machine or the Ruhmkorff coil. In cases where a hyperæmia is produced by a mild treatment it is preferable to use the transformer in conjunction with the static machine, as the treatment is less disagreeable, and the undesirable heat effects are much less marked. The electrode should be attached to one of the terminals of the secondary coil of the transformer, and the strength of the current regulated by the static spark gap. With an eight or ten plate machine running to full capacity it is usually possible to employ a spark gap of one inch. If the gap is too long the effluve from the electrode tends to condense into a heavy spark which is

unpleasant to the patient and is not productive of the desired results.

In cases where the hyperæmia is not readily produced by this method it is desirable to attach the transformer to a coil. This may be accomplished by connecting the chains, which are attached to the Leyden jars of the transformer, to the coil terminals, and reducing the spark gap to about one fourth to three fourths of an inch. If preferred, the spark gap may be placed between the Leyden jars and muffled by means of glass. Any interrupter may be used, with about from two to seven ampères through the primary. Although the effluve is much less when the transformer is used in connection with the coil than with the static machine, the sparks are very much stronger, and a reaction is obtained very quickly. With the static machine it usually requires from five to ten minutes to produce an active hyperæmia, while the same result is obtained in less than half the time with the coil.

It must be remembered that the most important object of this treatment is the production of a hyperæmia, and unless the treatment is of sufficient length and strength to produce this reaction very little will be accomplished. To obtain the best results two or three séances should be given each week. While applying the spark the electrode should be kept in contact with the hair and in motion, so as to avoid the heat effects which are strong enough to burn the hair if allowed to remain stationary for several seconds. This of course is especially true when the coil is used.

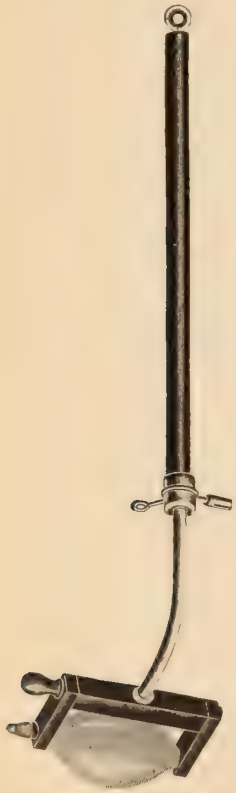

FIG. 1.

FIG. 2.

The choice of electrodes is a matter of little importance. The silvered glass instrument filled with carbon, as shown in Fig. 1, is easily handled and covers a large surface. The Piffard roller, shown in Fig. 2, is a very desirable instrument for this purpose. The roller may either consist of a glass vacuum bulb for mild effects, or a silvered glass bulb filled with carbon for stronger effects.

The following cases are selected from the history cards to show the effect of this treatment upon the various forms of alopecia. Usually the quickest results are obtained in alopecia of nervous origin:

CASE I.—M. F., female, twenty-five years of age, poor general health and of a neurotic temperament. Two years previous to her first consultation she had an attack of alopecia, which was diagnosticated of nervous origin, and successfully treated by the use of a mixture composed of resorcin, capsicum, cantharides, castor oil, and alcohol. She first came under observation December 6, 1905, presenting a scalp apparently free of disease, but with the hair falling out at an alarming rate since the previous August. The hair was very thin on the top of the head, and on the right side of the median line the scalp was almost denuded. Persistent treatment had failed to relieve this alopecia, which was undoubtedly caused by overwork and worry. Sparkings were commenced immediately and the patient advised to have three treatments weekly. No internal medicine or local chemical applications were prescribed. On December 26th, the hair had entirely ceased to fall out. On February 1, 1906, a heavy growth of down was in evidence. On March 1st the case was progressing so favorably that the sparkings were discontinued and a mild stimulating hair tonic prescribed. Throughout the treatment this patient was very irregular in attendance, had extensive business transactions, accompanied with considerable worry, and suffered from several heavy colds. At the present writing the new growth of hair appears perfectly healthy.

In cases of alopecia due to seborrhœa the results of this treatment depend both upon the severity and duration of the disease. Some cases are extremely resistant, but good results will always be obtained if the treatment be continued for a sufficient length of time. This fact has been demonstrated so often in the author's experience as to produce a feeling of perfect confidence.

CASE II.—M. A., female, twenty years of age. First came under observation October, 1904, suffering from seborrhœa of several years standing. The hair was falling out badly and was very thin. Treated without benefit by the usual methods until August, 1905, when the sparkings were begun and given thrice weekly. At the end of two months a heavy growth of hair had begun, and an improvement in the amount of oil and falling of the hair was noticed. The treatments were continued irregularly until April, 1906, at which time the hair was thick and steadily growing in length. The oily condition was much less marked and the hair fell out very little.

CASE III.—M. B., female, thirty years of age. Suffering from seborrhœa alopecia of many years standing. The hair was very thin and short. Solutions of sulphur, sodium sozoiodolate, resorcin, beta naphthol, etc., greatly improved the oily condition, and materially lessened the loss of hair, but there seemed to be no tendency for new hair to grow. The hair tonics were then discontinued in favor of the high frequency treatment, which proved efficacious in three months.

CASE IV.—M. J., male, twenty-five years of age, suffering from alopecia and seborrhœa sicca. The alopecia had progressed rapidly for about two years, un-

til the hair on top of the head was extremely thin. Chemical treatment reduced the scaly condition, but did not improve the alopecia. The sparkings were applied to this patient twice weekly for three months, when the hair ceased to fall out, and a new growth was in evidence. The treatments were then reduced to once weekly, and a mild antiseptic and stimulating solution advised for daily use. At the end of seven months the patient had entirely recovered his hair.

The next case will illustrate the value of persistent treatment under discouraging circumstances.

Case V.—M. F., male, twenty-three years of age. Patient first came under observation December 1, 1905, in about the same condition as Case IV. The sparkings were applied twice weekly combined with the daily use of appropriate hair tonics. This patient, who was very regular in attendance, showed no improvement until May 15, 1906, when the hair finally ceased to fall out. In the mean time the chemical treatment had been abandoned. At the present writing new hair is growing abundantly.

That this treatment offers encouragement to apparently hopeless cases is shown by the two following histories:

Case VI.—M. M., male, thirty-eight years of age. This patient had been gradually losing hair until the vertex and temporal regions were practically denuded. The high frequency treatment was applied twice weekly for nine months, a good growth of hair resulting.

Case VII.—M. S., male, forty years of age. Hair very thin over temporal region and only a slight downy growth on vertex. This patient received the high frequency treatment combined with the daily use of stimulations for a period of six months without the slightest improvement. He had no confidence in the treatment and consequently was rather irregular in his visits. It was only by discontinuing the hair tonics and assuring him of ultimate success that he could be persuaded to continue his treatments. A few weeks later, however, a heavy growth of course, white down made its appearance and the treatments henceforth were taken with great regularity. At the present writing, after ten months' effort, a good growth of hair is in progress.

It is not necessary, but often advisable, to employ the various chemical combinations in conjunction with the high frequency treatment, and to continue the occasional use of a mild solution having both antiseptic and stimulating properties for some time after cessation of treatment.

Attention has already been called to the fact that the ordinary case of alopecia can usually be readily overcome by the judicious use of the various chemicals. The high frequency treatment should therefore be reserved for the obstinate cases.

It is unfortunate that so much time should be required to obtain desired results, but it must be remembered that the hair growth from the scalp is very slow even when in a healthy condition. Time, patience, and persistency are required; gratifying results will follow. Usually the greatest effort is required in starting the hair to grow, for after it once begins the sparkings can be dispensed with, and stimulation continued by the use of chemicals.

This method is very efficacious in the treatment of the dry brittle hair, which never attains a luxuriant growth, because the shafts are constantly splitting and breaking off. This condition is very common in women, and must not be confused with the rather rare disease known as trichorrhexis nodosa. The following case will illustrate one of this kind:

Case VIII.—M. H., female, forty years of age. The scalp appeared healthy, and the hair, although thick, was very short, hardly reaching to the shoulders. It had been in this condition for many years, and she recalls a mild attack of alopecia areata several years ago. Almost every hair was split at or near the end, and short pieces were constantly breaking off. High frequency treatments were given for four months, at which time the hair, although still splitting at the ends, did not break off and was growing in length.

The history cards show many cases of alopecia areata treated in this manner with apparently good results. One should be very conservative, however, regarding effects produced in this peculiar disease, inasmuch as there is in these patients a distinct tendency to spontaneous recovery. There is no doubt but that this disease can be made to run a much shorter course under this treatment than by the use of any former method, with the exception of the Finsen light. The following interesting case will demonstrate the value of this treatment in cases of this kind:

Case IX.—M. A., female, twenty-eight years of age. This patient, who was referred to the writer through the courtesy of Dr. G. N. Knight, was a neurotic individual in poor general health. She presented a total alopecia of the scalp, which began some months previous as an alopecia areata. The sparkings were applied to the right side of the head every second day for four months, at which time a good growth of hair was in progress on the side treated, while on the corresponding side, although the hair showed some tendency to grow, it had only assumed the dignity of a white down. The sparkings were then applied to the entire scalp. At the end of seven months the hair on the side first treated was about two inches long, while on the opposite side it was about two thirds of an inch in length.

In this connection it is interesting to note the observations of Dr. G. T. Jackson who, at the meeting of the American Dermatological Association held in this city last December, reported three cases of alopecia areata treated with the Piffard spark gap lamp, without the crystal front piece.

The first case was one of total alopecia of the scalp. One side was treated for three months, resulting in a good growth of hair, which, however, fell out shortly after. The treatment was then applied to the entire scalp, again resulting in a growth of hair, which also fell out after a few weeks. The treatments were then discontinued. The second case was also one of total alopecia of the scalp. The hair grew in rather slowly and the case disappeared before the hair had attained any great length. The third case was one of rather extensive alopecia areata which responded beautifully to the treatment. The case was observed for several months, and the result appeared to be permanent.

In the *Archives d'électricité médicale*, February 10, 1906, Vassilides reports fourteen cases of alopecia areata successfully treated in his institution. Two out of the fourteen patients presented the most severe symptoms of the disease. The first case had been afflicted eleven years, and for the past ten years there was not a hair on his head, in spite of the numerous medical treatments he had followed. The second case, that of a young girl of sixteen, became absolutely bald

within a period of a few months, and had been that way for three years. After treating these fourteen patients, he believes he is justified in stating that alopecia is always curable by the currents of high frequency.

The rapidity of the cure depends upon the extent of the bald patches, and the ease with which the hyperæmia is produced. He uses a Tesla coil, a solenoid, and a vacuum glass electrode, and regulates the spark gap so that sparks of about one centimetre in length jump from the electrode. These sparks are applied to the affected parts until a slight erythema is produced. The treatments are given six times weekly. He claims to cure mild cases by this treatment in one month, while refractive cases may require sixteen months. In two cases of alopecia, one of the beard, the other of the scalp, besides the bald areas there were spots of white hair. By the same process the color of the hair was changed to one of darker hue, but he made the observation that in both of these cases it took twice as long to restore the color as it did to overcome the bald spots.

119 WEST TWENTY-FIRST STREET.

Our Readers' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LII.—How do you treat hemicrania? (Closed July 16, 1906.)

LIII.—How do you treat burns? (Answers due not later than August 15, 1906.)

LIV.—How do you treat spasmodic croup? (Answers due not later than September 15, 1906.)

Whoever answers one of these questions in the manner most satisfactory to the editors and their advisors will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short; if practicable, no one answer to contain more than six hundred words.*

All persons will be entitled to compete under the regulations laid down by the postal authorities. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL.

The prize of $25 for the best essay submitted in answer to question LI, has been awarded to Dr. George B. Twitchell, of Cincinnati, whose article appears below.

PRIZE QUESTION NO. LI.

THE TREATMENT OF PROLAPSE OF THE UMBILICAL CORD.

BY GEORGE B. TWITCHELL, M. D.,
Cincinnati.

An umbilical cord has its bloodvessels well protected. Pick up an ordinary, normal cord between the fingers and you will be surprised to find how much pressure has to be exerted before the pulsations will stop; perhaps the veins will be closed first, but still we must recognize that Wharton's jelly is a decidedly good protection to all the vessels.

In every breech case there is a physiological prolapse of the funis, ordinarily the cord is not compressed by the breech, but by the after coming head. Compression by the breech cannot be compared in danger to the child with compression by the head as it enters the superior strait. And yet, the infant mortality in breech cases is not very high. In cases having a moderately contracted pelvis, where the head cannot engage even in the Walcher position, version is the operation of choice attended by a fœtal mortality not, however, entirely caused by cord compression, but often by injuries to the head from pressure. In Leopold's clinic the fœtal mortality from versions of this kind was said to be thirty-five per cent. Surely a very high mortality, but still not so high as the mortality caused by prolapse of the funis.

When all this is taken into consideration it seems strange that prolapse of the cord should be so dangerous to the infant, and indeed it is probable that this condition, properly treated, would not be very dangerous if, unfortunately, it did not occur associated with other conditions not favorable to fœtal life. It occurs where the presenting part and superior strait do not fit well, in transverse and foot presentations, and in contracted pelvis where the head does not engage, and sometimes in multiparous women when the lower uterine segment is very loose.

The treatment should be founded on a consideration of these facts. Where we simply deal with a presentation of the funis, the membranes being intact, preserve the membranes if possible, until full dilatation occurs, after this the treatment will be as in true prolapse. If the os is fully dilated and the membranes ruptured, the child should be delivered as quickly as possible, in transverse cases, of course, by podalic version, in head presentations occasionally forceps could be used, but as a rule, when the accident occurs, the head is so high that version will offer an opportunity for much quicker delivery. Compression of the cord is greatest when the head engages, there may be very little from the breech. So we must deliver quickly when the umbilicus appears at the vulva. This same compression occurs in normal breech cases, and here an accepted rule is to deliver in less than eight minutes from this times. In the cases we are discussing the time, for obvious reasons, should be considerably less than eight minutes. In extracting the head sole dependence should not be put on Mauriceau's method. Forceps to the after coming is easily applied and often saves much time. This cannot be made too emphatic.

Methods of replacing the cord have been suggested and advised, such as placing the woman in the knee chest position, introducing the whole hand, replacing the cord, or using a catheter with a loop holding up the cord and leaving the catheter in—but why describe methods usually futile and always wasting valuable time, methods only to be condemned. Let the cord alone and deliver the child. A clever operator can turn a child in less time than it takes to prepare a loop for a catheter, and deliver before the cord is permanently replaced, if it ever is.

When the os is not fully dilated we meet with a much more serious condition than in the cases we have discussed. Here the indication is to dilate as rapidly as possible and then turn. Manual dilatation is usually the best method. Very often the os can be dilated in a very short time. In multiparæ we may have a very soft cervix, and here the operation becomes very easy. It is possible that a Champetier de Ribes balloon could be used if the cord could be carried above it. With instrumental dilatation I have had no experience. However, manual dilatation offers the greatest advantage, while the cord can be protected by the hand during dilatation. Unfortunately, too many cases come to us long after the cord has ceased to pulsate. Here, of course, the mother simply has to be delivered of a dead infant by whatever manner is safest and best for her.

Dr. A. Walter Jones, of Akron, Ohio, says:

It occasionally happens that the umbilical cord falls down past the presenting part, and is apt to be pressed between it and the walls of the pelvis. The consequence is that the fœtal circulation is dangerously interfered with, and, although not endangering the life of the mother, is serious as regards the life of the child which is very apt to be sacrificed.

Before going into the various methods for treating prolapse of the cord I think it would be well to mention a few of the causes which are responsible for this condition, among which are the following: Unusual length of the cord, deep placental site, insertio velamentosa, shoulder and breech presentations, prolapse of the extremities, hydramnion, multiple pregnancies, and above all contracted pelvis.

In treating prolapse of the cord, our great aim must be to prevent the cord from being unduly pressed on, and all our plans and treatment must have this end in view. If the presentation be detected before the cervix is fully dilated and the membranes are still intact, we must try and keep the cord out of the way. Keep the membranes intact as long as possible, since the cord is very well protected as long as it is surrounded by the amniotic fluid; besides, I believe the expectant plan is best until dilatation is complete. After rupture of the membranes, and if the presentation is still high, the cord should be replaced and held up until the head be engaged. This is best done by placing the patient in the genupectoral position; introduce the hand and place the cord beyond the greatest circumference of the head, and if possible to the back of the child's neck, sustain the uterus externally by the other hand and cease during the pains. If this is not successful I place the patient in the lateroprone position, with the hips elevated upon a pillow, and if this should fail I put a piece of tape through the eye of a flexible male catheter, and catching a loop of the cord with this, push it into the uterus and leave the catheter there until the head engages, so as to prevent prolapse again. It often happens that all our efforts to replace the cord fail, the treatment must then be guided by the circumstances of the case.

If the patient has a roomy pelvis and the pains are strong it may be advisable to leave the case to Nature in the hope that the head may come down before pressure on the cord has had time to prove fatal to the child. Under such circumstances the patient should be urged to bear down, so as to get the second stage completed as soon as possible. If the presenting part is within easy reach I would apply the forceps, since delay must necessarily involve the death of the child. During this time I would place the cord (if possible) opposite one or the other sacroiliac synchondrosis, according to the position of the head, as being the part of the pelvis where there is most room and the cord most likely to be protected. If the head has not descended into the pelvis, and postural treatment and reposition has both failed, and providing the os is fully dilated and other conditions being favorable, turning would then offer the best chance to the child.

This treatment is strongly advocated by Engelmann, who found that seventy per cent. of the children delivered in this way were saved. Turning, however, is by no means devoid of a certain amount of danger to the mother, and the operation in any particular case must be left to the judgment of the physician. I believe a fully dilated os with membranes unruptured so that version could be performed by the combined method (Broxton-Hicks) without introducing the hand into the uterus, would be the most favorable condition and the best treatment.

Dr. Herbert Marion Stowe, of Chicago, writes:

The treatment of prolapse of the umbilical cord in labor depends upon the condition of the cervix and the presentation of the fœtus. In all cases it is either necessary to prevent direct compression of the cord, and hence interference with the funicular circulation, or to deliver immediately as the fœtus cannot survive an interruption of its cord circulation longer than eight or ten minutes.

The treatment of prolapsus funis, by which term we infer that the membranes have already ruptured, may be divided into three classes: Prophylactic, treatment of first stage, and treatment of second stage. Prophylactic treatment. A knowledge of the causes of prolapse is here of great importance. In all classes of flat or rachitic pelves, malpresentations, such as face, brow, anterior or posterior parietal bone presentations, cross births, breech labors, prolapse of an arm or foot, placenta prævia or hydramnion, a careful examination before the membranes rupture to discover a possible forelying cord is very essential. Where any causes of prolapse are present, an internal examination should be made immediately after the spontaneous rupture of the membranes, or, if artificial rupture becomes necessary, the liquor amnii should be allowed to escape gradually, and a careful examination made for prolapse. The earlier this complication is detected the better is the prognosis for the child. Many children are lost because the proper treatment has been delayed by a late diagnosis, until the life of the fœtus has been seriously jeopard-

ized by prolonged pressure on the cord. If the membranes are intact the danger to fœtal life from a forelying cord is at a minimum, hence all measures should be resorted to to preserve the bag of waters, until all the conditions for immediate extraction are present.

Treatment of first stage. This treatment is indicated when the cervix is not effaced or the os dilated. Fœtal danger, latent while the membranes are intact, markedly increases when the liquor amnii flows away and allows the head, in cephalic presentations, to descend deeper into the pelvis and to compress the cord directly against the pelvic bones. Therefore, keeping the head in the upper part of the pelvis where there is more room and the retention of the remaining liquor amnii artificially will frequently postpone the difficulty until the os is dilated. Frequent auscultation of the fœtal heart is necessary here, and as soon as asphyxia is threatened, the solution should be allowed to escape from the bag and some other method tried. Reposition with a catheter or bougie has had a varying success. If the cord has been pushed above the head it is generally necessary to leave the repositor in place until delivery has occurred, as otherwise the prolapse frequently tends to recur.

Posture by placing the patient on that side to which the cord did not prolapse is a necessary adjunct to these various treatments. Inasmuch as prolapse is most dangerous in cephalic presentations and least so in cross births, it is allowable, if the operator is expert in obstetric surgery, to push the head out of the inlet into an iliac fossa, and so produce a cross birth, then insert the bag, dilate the os, and deliver by podalic version. This method, although new, has been done twice successfully by the author. If the danger of compression continues, it is well to dilate the os uteri manually by the Harris method, as by this method one is enabled to keep the head high in the pelvis during the operation. This operation should be guarded by the frequent auscultation of the fœtal heart, and should the fœtus show signs of not surviving the length of time usually necessary for *accouchement forcé*, from twenty to eighty minutes, the dilation may be finished by Dührssen's cervical incisions in the anterior lip, and if necessary, in the posterior lip. The cervix must be effaced for this latter procedure.

Treatment of second stage. If the os is dilated we can either replace the cord with the whole hand or deliver at once. In reposition of the cord, we place the patient in the Trendelenburg or knee chest position, insert the whole hand into the vagina, and shoot the cord past the head in one movement if possible. If not successful, this method should not be persevered in, as frequent or violent handling of the cord is dangerous to the child. If the cord is pushed back of the head, the head may be forced into the inlet by the Hofmeier-Fritsch expression, and if it fits well the prolapse cannot recur.

When the conditions for immediate extraction are present, the delivery of the child is called for. Podalic version is indicated in all cephalic presentations when the conditions for the version are present. This is especially true when prolapse is complicated by other conditions, as face and brow labors, etc. If the head cannot be pushed out of the pelvis a rapid forceps operation is indicated. Prolapse of the cord, complicating breech labors, is treated by simple extraction. Transverse presentation with prolapse is treated by podalic version and extraction. If the child dies during the various treatments, the case is left to Nature, or embryotomy is performed.

Dr. M. W. McCrary, of Woodbury, Tenn., remarks:

Every obstetrician attending a case of this rare preternatural labor should bear in mind the great danger to the fœtus from asphyxia.

The position of the cord is either alongside or below the presenting part, and generally in front of one of the sacroiliac junctions, or behind the pectineal eminence of mother's pelvis. I deem the active causes worthy of remembrance, viz.: The too sudden rupture of the membranes either by Nature or obstetrician, associated with rapid escape of the waters or descent of the hand or foot. So recognizing the causes of death and the prolapse I think it wise to carry out the following precautions:

1st. Be prepared to resuscitate. 2nd. Have forceps in easy reach. 3rd. Make out the exact position and presentation. 4th. Preserve the membranes as long as possible. 5th. Never rupture prominent membranes at the height of a labor pain, associated with nonengagement and os about effaced. 6th. Note condition of fœtus as to life from time to time by feeling for pulsations of cord, do this between pains, for they cease during a pain, but return soon after, yet may be five or ten minutes in so doing. Make several examinations under such conditions, and if still in doubt as to existence of life, auscultate for fœtal heart. 7th. Practice rigid asepsis in use of all instruments, tape, mother's parts, and operator.

Treatment.—Expectant Plan: Seeing a case late in labor, where the cord protrudes, push it back into the vagina, thus avoiding atmospheric conditions, and leave the case to the powers of Nature, if associated with strong uterine contractions, rapid dilatation, average size head, and a nonrigid perinæum, success depending on rapid delivery. So be on the alert for failing pulsations, and if noted resort to the forceps, version, or artificial reposition, provided the indications for any one of them are present, if they are contraindicated then just place the cord where it will receive the least amount of pressure, as near one or the other of the sacroiliac junctions, and leave the case to Nature.

Postural Plan: In seeing a case early in labor before the membranes rupture I try the following in hopes of inducing gravitation of cord towards the fundus: I place the patient on the side opposite to that of the cord, elevate her hips by several firm pillows, and forbid any bearing down efforts. Should the membranes at any time need support, then I introduce a Barnes's bag into the vagina, and slightly distend it. In case the woman tires of this position, then I alternate between it and knee chest position, and if gravita-

tion with dilatation is obtained I place the woman in the knee chest position temporarily, and rupture the membrane, at the same time I grasp the fundus with the other hand, and try and produce engagement, thus blocking the cervical cone. Now I place her back in the lateral position, keeping her hips elevated, and wait for delivery.

Artificial Reposition: Where gravitation cannot be induced by the posture, I wait for Nature to rupture the membranes, and if not having the indications present mentioned under the expectant plan of treatment I then resort to artificial reposition, which is only applicable where we have nonengagement. Where dilatation will admit, I prefer the manual method first. To facilitate the operation I place the woman in an improvised Trendelenburg position, and use my left hand, if the cord lies to the mother's right, and vice versa, working near one of the sacroiliac junctions. If there is a short loop I push it up by its middle; if a long one I first gather it up, and reduce it as a hernia, steadying fundus with one hand. I next carry the cord in the palm of my hand or by the middle and index fingers well above the presenting part. If there is a vertex presentation I carry the cord to the back of neck, retain one hand in the vagina to prevent further prolapse, and try to produce engagement by pressing the fundus down with the other hand. In some cases the cord may be placed over one of the extremities, but this is rare.

In case of failure after several attempts by the manual means I use one of the simple methods of the tape and catheter, as follows: I double a piece of narrow tape or gauze, and run it through the lumen of a firm rubber catheter, the loop of tape emerging at the eye of the instrument. I pass the loop of the cord through the loop of the tape, and if a long loop of cord is down then I first fold it on itself before passing it through the noose. I then make gentle traction on the free ends of tape enough to hold the cord firmly, then I knot the free ends close up to the catheter, introduce the stylet, and place one hand in the vagina, while directing the end of the catheter alongside of it to prevent the cord from slipping in the noose, and carry the cord well above the presenting part. Now I withdraw the stylet and leave the catheter in place until engagement takes place. If this should also fail then speedy delivery is the only hope, either by version or forceps, but whichever one is used the indications for its use must be present. I prefer to use first, if possible, the external method of version, or external and internal combined, lastly the internal method. In doing a version I always carry the cord into the uterine cavity to avoid compression by my arm or after passage of child.

Where the prolapse is complicated with the prolapse of a hand then I replace the hand and cord together, and try to produce engagement. If a foot I replace only the cord, and make traction on the foot to produce a version. In a face or breech presentation I resort to podalic version early.

Lastly, if the child is dead I leave the case to Nature, if not contraindicated.

Dr. Julius Rosenburg, of New York, notes:

Under normal conditions, during the progress of labor, the presenting part occupies the lower uterine segment, acting as and forming an efficient carrier for the escape of the cord. Thus, the most important factor producing this complication is a disproportion between the passage and passenger, interfering with the latter's descent. Direct causes are, malpositions of the fœtus, usually shoulder and arm presentations, hydramnion, plural pregnancy, and excessive length of the cord, the last named being of minor importance. With such conditions present, the force of uterine contractions act directly upon the membranes, causing their early rupture, and, not encountering any obstacle, the cord is swept along with the outrushing amniotic fluid.

The diagnosis of prolapse of the cord is not difficult. A careful vaginal examination readily reveals its presence within the unruptured membrane or in the vagina. However, the literature contains many instances of a coil of intestines escaping through a rent in the fornix vaginæ, being mistaken for the prolapsed cord, usually with disastrous results to the woman. Differing from the prolapse of an arm or shoulder, the misplaced cord cannot endanger the mother's life, and forms no obstacle to the delivery of the fœtus. The treatment, therefore, aims to save the child, and with its life extinct, the case must be managed on general principles without reference to the prolapsed cord.

If a case is seen at an early stage with membranes still intact and the pulsating cord occupying the lower pole of the ovum, the accoucheur must endeavor to delay the rupture of the membrane until dilatation is completed. This is most readily accomplished by elevating the woman's hips and cautioning her against using the abdominal muscles. A full dose of morphine, administered hypodermatically, aids in the management of the case. I also find the introduction of Bram's colporynter of decided advantage. Distended with fluid it forms an elastic cushion in the vagina, aiding dilatation of the cervix, and at the same time retarding rupture of the membranes. A vaginal tampon can be used instead of the calporynter, but is a less efficient substitute.

With dilatation complete and the membranes ruptured, the cord is exposed to pressure and consequent asphyxiation of the fœtus. What to do depends upon the condition of the pelvis and its contents, but whatever is done must be both quick and intelligent. If an arm or shoulder presents, immediate version is indicated, after which the child is extracted as rapidly as safety permits. In breech presentations, with membranes ruptured, cervix partially dilated or dilatable and the funis protruding, a foot should be brought down. This diminishes the presenting diameter, lessens the danger from compression, and enables one to complete delivery with indications arising. The hand which seizes the foot replaces the cord within the uterus. Delivery of the child should be hastened, but not forced, as the child would probably perish from delayed de-

livery of the after coming head. Podalic version is indicated in head presentations, with the cord prolapsed, and the head movable above the brim. However, the pelvis must be of sufficient size to permit the delivery of a living child. It is certainly malpractice to perform version in a pelvis contracted to a degree demanding Cæsarean section or craniotomy. Version, in my experience, is a safer and more rapid operation than the high forceps, and it enables one to remove the cord from its dangerous position without delay.

Is the head firmly engaged and the cord prolapsed the child's chances are slim, version is impossible, and only an immediate and rapid forceps delivery can save its life. However, if the cord's pulsations have ceased and heart sounds are extinct, the expulsion of the fœtus is best left to Nature's forces. A hasty delivery cannot revive a dead fœtus, but may be the cause of serious injury to the mother.

Like many other complications of childbirth, prolapse of the cord may, to a certain extent, be foreseen. Pelvic contraction, plural pregnancy, hydramnion, and malpositions of the fœtus can, in most instances, be diagnosticated during the last month of gestation, which again enables us to guard against, if not prevent, this and other accidents.

Therapeutical Notes.

Treatment of Multiple Articular Inflammation.—After directing attention to the significance of purulent effusion in joints, not only as an expression of infection, but also as a continuing process, Edward Weis (*Medizinische Blätter*, Vienna, May 19th) urges early interference by incision and drainage, in order to check the destructive process. In severe cases the joint may be freely opened; smaller quantities of pus may be removed, and the desired object attained by washing out the cavity with antiseptic solutions. When the secretion is merely serous, it may be entirely removed by absorption. In many cases, however, fibrinous bands, adhesions, or deposits remain and afterwards become organized, forming foreign bodies in the joint. The synovial membrane may be greatly changed and thickened and become decidedly vascular, so that vegetations, originally fibrous, may increase in size. The periarticular tissues also become enlarged and the lymph circulation impeded. This is particularly observed after acute gonorrhœal arthritis and in chronic tuberculosis of the joints. The therapeutical principle of *obsta principiis* applies, therefore, with especial force to joint inflammations. The first object is to check the inflammation, so as to restrict its operation within the smallest limits possible. As it is at present beyond our power to destroy the virus, which causes the arthritis, we must be content with reducing its activity and making the inflammation as mild as possible. Rest and cold applications to the joint are the best agents for this purpose. As soon as the inflammation has run its course, then the removal of the products of inflammation should follow. Surgical methods are resorted to for the purpose of removing circumscribed purulent collections. The other inflammatory deposits are overcome by various means, such as massage, Swedish movements, gymnastics, and mechanical appliances. The application of heat, locally, is a powerful means of improving the blood and lymph circulation, enhancing nutrition and favoring absorption. Electricity is useful to stimulate the vasomotor and trophic nerves. The therapeutics, therefore, is not ætiological, except in a few instances; in the great majority of cases we must be content with symptomatic treatment of joint diseases. As regards the prognosis, it is evident that it depends upon the amount of anatomical alteration involved; therefore, the earlier that a rational and skilful treatment is instituted, the better will be the prospect of recovery.

An Oriental Antidysenteric Remedy, Kho Sam.—At a recent session of the Société médicale des hôpitaux de Paris, Mathiew reported upon the use of Kho Sam, a plant of Annam and Sumatra, in the treatment of 1,263 cases of dysentery. Out of these he was able to follow up 879 cases, among which there was a radical cure in ninety-six per cent. The seeds known by this name have been ascribed by Dibrosky and Heckel to the plant *Brucea sumatrana*, of the family of simaroubeæ (Quassiæ), which is allied to *Brucea antidysenterica*. Physalix has found a glucoside in the seed *Khosamine*, which, in a small dose, is emetocathartic and a cholagogue. It is slightly antiseptic and thickens the blood. Barrois, of Nancy, reported five cases of colonial dysentery cured with this drug. The hydroalcoholic extract has been compressed into tablets, each representing one grain. Their effects have been remarkably successful. The best dosage is six or eight tablets daily. Lemoine has recently reported a case of colonial dysentery radically cured in two days by this remedy (*La Tribune médicale*, May 29, 1906).

Scopolamine in Puerperal Eclampsia.—Laurendeau (*Le Journal de médecine et de chirurgie*, Montreal, Canada, vol. i, No. 7) claims that two processes concur in producing the condition of eclampsia: (1) Intoxication of the economy, or toxinæmia; (2) hypertension of the bloodvessels. The combination of these two syndromes bring about a state of hyperexcitation of the nerve centres, which is manifested by intermittent discharges with unconsciousness. The two remedies, scopolamine and veratrum, admirably respond to these primary indications; the first calms the nerve centres, the second lowers vascular tension. He recommends that as soon as called to a case of eclampsia, the physician should at once give a fiftieth of a grain of scopolamine hydrobromide and a fifth of a grain of morphine and fifteen drops of fluid extract of veratrum viride by hypodermic injection, making the injections deeply into the thigh. Wait for an hour and a half; if in this space of time or later the crises are repeated, repeat the dose as before. This may be again performed at the end of another hour and a half, except that this time only ten drops of veratrum are given. These doses

should not be exceeded, nor continued. In this way the patient takes 0.6 gr. of scopolamine, gr. 0.6 gr. of morphine, and 40 drops of veratrum v'ride.

Treatment of Lead Colic.—Delearde and Dubois (*La Presse médicale*, February 14, 1906), in lead poisoning, recommend spinal cocainization in doses of 0.01 to 0.03 of cocaine dissolved in 2 to 4 c.c. of sterilized water. Within a few minutes after the injection the cramp disappears. The bowels move several times during the twenty-four hours after the injection. This treatment has the advantage of promptly alleviating the pain and immediately checking vomiting. It is possible to employ some inoffensive succedaneum to cocaine for the spinal cocainization.

Relief from Arterial Hypertension by Dechlorization.—Louis Rénon (*Bulletins et mémoires de la Société médicale des hôpitaux de Paris*, May 10, 1906) reported a case of a man, sixty-one years of age, suffering with interstitial nephritis, with a bruit de galop, slight œdema of the ankles, and polyuria without albuminuria, who suddenly had an attack of extreme dyspnœa. Examination revealed some pulmonary œdema and marked arterial hypertension. There was diminution in the chlorides of the urine showing retention. The patient was fond of salt, and several times daily ate bread and butter spread thickly with it. He was put on a strictly water diet for thirty-six hours, and subsequently upon a diet free from chlorides. Upon the second day the dyspnœa disappeared and it was observed that the arterial tension gradually diminished until in two weeks it was decidedly reduced. The importance of a diet free from chlorides in the treatment of certain forms of uræmia and cardiorenal cachexia has been already pointed out by other clinicians. Bergouignan and Fiesinger have recently reported upon this subject, and have observed a progressive augmentation of the appetite and increase in weight during the process of dechlorization. Rénon points out that their cases also prove that excessive retention of the chlorides is perhaps capable of causing by its own action, loss of weight, and cardiorenal cachexia, which is an interesting and important observation.

Relief of Convulsive Facial Neuralgia by Röntgen Rays After Failure of Surgical Methods.—Beclere and Haret report an interesting case of epileptiform facial neuralgia of Trousseau to the Société médicale des hôpitaux (*Bulletin et mémoires de la Société médicale des hôpitaux de Paris*, May 10, 1906). The patient, a hospital attendant, thirty-three years of age, had suffered with intense facial neuralgia for seven years. He had had all the upper teeth of the left side extracted and the articular branch of the infraorbital nerve, but without any benefit. The ganglion of Gasser was then removed, producing an amelioration; the pains disappeared, but returned after an interval of six or seven months. Then the superior cervical ganglion was removed, which again afforded relief, but only for four months. At this time, after surgery had done almost everything possible for the patient, the pains were very intense and came on ten or twelve times a day. The Röntgen rays were now directed to the affected area, and four séances at one week's interval, with the rays directed into the interior of the mouth and the alveolar border, caused complete disappearance of the pains. More than a year has now passed without any return of the attacks. Without claiming a definite cure, the author believes that in case there should be a return, he would be warranted in again resorting to this treatment. He suggests that, without anticipating such decided results in all cases of obstinate facial neuralgia, it is at least worth while to give this method a trial before resorting to serious surgical operations such as extirpation of the Gasserian ganglion, which produces facial paralysis, and does not always permanently relieve the neuralgia.

A Form of Migraine Which Yields Only to Thyreoid Medication.—Levy and Rothschild affirm that certain obstinate forms of headache are due to thyreoid deficiency, and they have found that such patients may be relieved by thyreoid tablets. They advise in every migraine of unknown cause that inquiry be made into the functions of the thyreoid and for the presence of symptoms of hypothyreoidism. If these signs are present, thyreoid medication should be resorted to.—*Bulletin et mémoires de la Société médicale des hôpitaux de Paris*, May 17, 1906.

Treatment of Scabies.—Brocq uses an ointment consisting of equal parts of balsam of Peru, fresh styrax ointment, and lanolin or petrolatum. —*Journal de médecine de Paris*, July 1st.

Treatment of Saturnine Amaurosis by Amyl Nitrite.—Rist and Bonnait-Leguente (*La Tribune médicale*, June 30th) report an interesting case of acute lead poisoning with sudden blindness in a man who had worked for ten years where articles of lead were manufactured. On the eighth day of an attack of lead colic, which he had treated with purgatives, he complained of intense headache and general stiffness of the body, but the abdominal symptoms were mitigated. The following morning he was completely blind, and was taken to the hospital Saint-Antoine, in the service of Dr. Béclère. In order to relieve vascular hypertension, he was allowed to inhale five drops of amyl nitrite. There was immediate reduction in the arterial tension, and the patient voluntarily announced that he could see much better. The following day, the amblyopia had returned with moderately increased blood tension. The same treatment was adopted with the same striking result. The next day the patient was seen reading a daily paper, and the following day he was discharged, apparently in good health. Not only had the blindness gone entirely, but a transitory albuminuria associated with the increased arterial tension had likewise disappeared. From the notes of the case it does not appear that any other medication was given than two five drop doses of amyl nitrite on two successive days. Examination of the eye ground showed a transitory albuminuria neuroretinitis in both eyes, without hæmorrhages; there was a complete return to the normal at the subsequent examination.

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THE TONSIL AS THE STARTING POINT OF SYSTEMIC INFECTION.

Of late years it has been rather freely taught that various infective organisms found in the tonsil a ready entrance into the system. Apparently this teaching will have to be revised in the light of certain important considerations brought forward by Dr. Abraham Jacobi in the presidential address which he delivered before the American Pædiatric Society at its recent annual meeting in Atlantic City (*Archives of Pædiatrics*, July).

In the first place, Dr. Jacobi calls attention to some well known clinical facts that seem *a priori* to militate against the prevalent idea that infection of the system by way of the tonsil is common and easy. Among these is the absence, almost if not quite complete, of changes in the neighboring lymphatic glands in cases of superficial infection of the tonsils. He then proceeds to anatomical considerations. These relate chiefly to the dense fibrous structure that lies between the proper tissue of the tonsil and the site of its implantation and to the preponderance of evidence against the assumption of free connection by lymphatics between the tonsil and the system.

In this anatomical inquiry Dr. Jacobi finds himself obliged to challenge certain deductions set forth about a year ago by Dr. George Bacon Wood (*American Journal of the Medical Sciences*, August, 1905). For example, he quotes from Dr. Wood's article as follows: "The most important infections of the cervical lymphatics originate through the tonsil, and because of the importance of the tonsil in the origin of the infections I feel that the term tonsillar is a most appropriate one." The following is Dr. Jacobi's comment: "He takes things too easy. What he sets out to prove he simply postulates. He takes the theory of tonsillar invasion for granted, wisely concludes there must be a sufficient number and calibre of afferent and efferent vessels, and courageously postulates as an anatomical fact what he proposes as a theory."

Dr. Jacobi deprecates deductions drawn too readily from injection experiments in the laboratory, pointing out that what happens to an injection driven in under pressure is not necessarily identical with what occurs to invading microorganisms in the absence of pressure. He points, too, to the almost constant changes in the tonsil, consequent on repeated acute or chronic inflammation, which render it even less open as a portal of general infection than it was in infancy. On the whole, he seems to us to have adduced very good reasons for questioning the assumed readiness of the tonsils to pass infection on to the system.

HORIZONTAL SUCCUSSION.

In cases of hydropneumothorax or of pyopneumothorax the well known method of producing the succussion, or splashing, sound, recommended by Hippocrates, is still practised. The patient, while seated upon some firm support with his arms extended, is seized by the shoulders and suddenly shaken. Under favorable circumstances the sounds are very distinctly audible to the bystanders, and also to the patient.

M. A. Chauffard, in a recent communication to the Société médicale des hôpitaux de Paris, points out the fact that where this sign is elicited it is positive evidence of the presence of air and liquid in the pleural cavity, but states that its absence does not show that liquid and air are not present. In fact, he says, where the liquid is effused in large quantity and the air is compressed at the upper part of the chest, this sound of splashing cannot be elicited by shaking the patient while he is in the upright or sitting posture. He has found, however, that if the patient is made to bend forward until the chest is horizontal, or if he is placed upon his stomach, and shaken, the examiner's ear applied to the back of the thorax will readily distinguish the characteristic sounds.

This expedient, which Chauffard calls "horizontal succussion," is of distinct value in enabling one to recognize the presence of a relatively small quantity of air with a large liquid effusion, which might escape the observer if the examination

had been made only in the upright position of the chest. The examination may be conducted with the patient in either the dorsal or ventral decubitus. If it is conducted systematically, the author is of the opinion that all cases of gas and liquid in the chest will be recognizable, and that cases of so called "silent hydropneumothorax" will no longer be encountered.

MARRIAGE AND GENITAL CANCER IN WOMEN.

The present remarkable and hopeful activity in the study of cancer is strikingly shown in the fact that the seventh volume of the *Archives of the Middlesex Hospital*, of London, is entirely devoted to the fifth report from the Cancer Research Laboratories. Two of the contributions embodied in the volume relate particularly to cancer in women, and mostly to cancer of the genital tract. One of them, entitled Menstruation, Childbirth, and Cancer, is by Walter Ball, M. B., B. S.; the other, on Cancer of the Uterus, Vagina, and Vulva, is the joint production of W. Lloyd Andriezen, M. D., and Archibald Leitch, M. B., Ch. B. Each of the articles is a statistical study based on the records of the hospital. In many respects, naturally, the statistics, though relating to great numbers of observations, do not furnish a sufficient basis for extensive generalization, and this fact is quite realized by the authors. They constitute, however, very valuable data, and on a few points they seem to warrant certain general deductions.

Mr. Ball, who does not confine his survey strictly to the genital organs, deals only with the records for the ten years 1895 to 1904, during which period 1,492 cases of malignant disease in women were under observation in the hospital. In 984 of them a history of the menstrual function was recorded, and it is these cases that he first considers. The site of the primary malignant growth in these instances was the uterus in 504 (the cervix in 464, and the body of the organ in 40), the vagina in 9, the vulva in 20, the ovary in 30, the breast in 285, the rectum in 51, and some other part in 85.

Of the 464 cases of cancer of the cervix, 443 occurred in married women (of whom 398 had borne children and 45 were nulliparous) and 21 in those who were not married. The proportion of cases of cancer of the cervix occurring in the unmarried was therefore 4.5 per cent., "whereas," says Mr. Ball, "the percentage of unmarried women over the age of twenty-five in the population of London at the last census was over 20 per cent." "Hence," he adds, "after making correction for the relative numbers of married and unmarried women in the population, it appears that a married woman is about five times as likely to suffer from cancer of the cervix as an unmarried woman."

Even this striking disparity is not so great, if our memory is correct, as Dr. Thomas Addis Emmet's great experience would indicate. Of course it is not the mere fact of their being unmarried that confers upon single women this close approach to immunity; it is probably their freedom from the cervical injuries that so often attend childbirth and abortion, and it is worth recalling that in one of Dr. Emmet's very few cases of cancer of the cervix in the unmarried he was informed by the patient that she had had an abortion. As regards the past occurrence of pregnancy in the subjects of cervical cancer, it is of course generally impossible to obtain trustworthy information; that it may be presumed to have occurred in some instances only emphasizes the almost complete exemption of nulliparæ from cancer of the cervix.

Some of our readers may remember that several years ago there was a little discussion between the late Dr. T. Gaillard Thomas and the late Dr. Paul F. Mundé as to the communicability of cancer *in coitu*. In the contribution furnished by Dr. Andriezen and Mr. Leitch there is a paragraph devoted to cancer *à deux*, including mention of one case that has a bearing on this question. Cancer of the penis had existed in the husband of one of the women who had cervical cancer, but the husband died seven years before the first symptom showed itself in the woman. This single instance derives added importance from the fact that Andriezen and Leitch's statistics cover a period of fifty years.

BULLET WOUNDS AND THE CHANGEABLE RELATIONS OF VARIOUS STRUCTURES.

The good old rule that, in examining a gunshot or other similar wound, we should put the part of the body implicated into the attitude that it was in at the moment the injury was received rests, of course, upon the fact that the relations of many parts are materially altered by changes of attitude. We doubt if the extent of these variations is generally appreciated; hence we are of the opinion that G. Lenthal Cheatle, C. B., F. R. C. S., Eng., has rendered an important service by reporting, in the July number of the *Journal of the Royal Army Medical Corps*, the results of certain experiments undertaken by him to show the degree of some of the changes of the character under consideration. It may be remarked incidentally that it was under the smart

of a flippant criticism that he entered upon the experiments. "I was led into these experiments," he says, "after a criticism by Surgeon General W. F. Stevenson, C. B., which was made upon a case I ventured to publish in the *Journal of the Royal Army Medical Corps*, January, 1905, in which he based his attack upon the positions of the skin wounds, and imagined that on those grounds alone he could cast doubt upon a careful post mortem examination made by myself and others."

The extent to which in some regions the skin may glide over the underlying structures, as ascertained by Mr. Cheatle, is somewhat astonishing. For instance, a marked point on the anterior wall of the axilla, not far from the level of the nipple, was found to move upward about five inches when the man who was the subject of the observation raised his arm above his head to the full limit. The nipple itself, says the author, rises from an inch and a half to two inches when the arm is so raised. On the other hand, the skin being fixed, it may be the subjacent parts that move to such an extent as to alter the relations materially. As an example of this fact, one may note that a mark made over the centre of the patella when the subject is standing with the leg extended is entirely above the bone when extreme flexion at the knee is effected. Moreover, some of the internal organs may so change their position under the influence of variations in posture that a bullet which would ordinarily wound them may pass them by altogether.

THE INFECTION ATRIUM OF THE TYPHOID BACILLUS.

Since we are aware that the typhoid bacillus may be found in the blood in a large percentage of cases during the first week of the illness, or at the time when the medullary swelling of the lymphatic follicles is progressing, but has not proceeded far enough to allow masses of bacteria to enter the circulation, a little modification of our present idea of the pathological ætiology of this disease is necessary.

Infection of animals by the introduction of the *Bacillus typhosus* into the intestinal tract, according to Brion and Kayser (*Deutsches Archiv für klinische Medizin*, lxxxv, 1, 4, 5, 6), is well nigh impossible, meaning of course the production of a septicæmia and not a lymphatic involvement of the intestine. During the stage of incubation and in the first week bacilli have very rarely been found in the stools—only seven times by Brion and Kayser in 200 cases. Moreover, throughout the course of the disease the stools of very many patients do not show any typhoid bacilli at all, and they disappear quite rapidly from the fæces after the fever subsides in the vast majority of cases. To be sure, they may sometimes be demonstrated at varying periods after an attack of typhoid fever, but those organisms appearing later come in great part from the bile.

In view of these facts the idea that the lymphatic follicles of the small intestine are the infection atria of the typhoid bacillus loses in value. The early bacteriæmia, the late appearance of the organisms in the fæces, and the discovery of them in the urine in twenty-five per cent. of the cases during the second week speak against the infection occurring so low as in the ileum, but rather for its occurrence at some higher point, probably in the tonsils, from which, according to the authors, it would have easy access to the blood stream. Moreover, in children, in whom Peyer's patches are well marked, but typhoid fever rare, nonspecific involvement of these lymphatics are not uncommon. However the infection occurs, it seems more probable that the lymphatics of the lower part of the small intestine are infected from the blood supply, and not *vice versa*. Certainly the prodromal symptoms of typhoid fever are more commonly those of a blood infection than of an intestinal catarrh.

THE NEUROTIC NAPOLEON.

The question of whether or not Napoleon Bonaparte was an epileptic will perhaps never be settled conclusively. It has lately been studied anew by Dr. Cabanès in a contribution to a work entitled *Les Indiscrétions de l'histoire*, and in the *Progrès médical* for July 7th M. J. Noir presents us with an abstract of Cabanès's essay. In favor of a negative answer to the question it may be said that no competent observer seems to have left a record of having seen the great soldier in a frank epileptic fit, and we confess that we can accord but little significance to the so called stigmata on which Lombroso and his adherents lay stress.

On the other hand, the nervous peculiarities of Napoleon seem to mark him as at least a highly neurotic individual, and history has handed down the story of some strange traits in his family that support this inference. We are reminded by M. Cabanès that Napoleon's father was a toper and a man lacking in moral sensibility, also that his sisters, particularly Pauline, were immodest and hysterical. Napoleon himself was exceedingly sensitive to changes of atmospheric temperature; he often suffered from unilateral headache and appears to have had auditory illusions.

He had a spasmodic affection of the arm, the shoulder, and the lips. He was excessively irritable and given to violent outbreaks which made him at times unapproachable. He seems to have had a mania for destruction, so that he whittled pieces of furniture, broke articles that were presented to him, pinched children while he caressed them, and took pleasure in shooting the rare birds with which Josephine had stocked Malmaison. The least opposition set him into a paroxysm of rage.

Napoleon's pulse was habitually very slow, ranging ordinarily between 30 and 35 and never mounting above 55, and this slowness of the pulse is reputed to be common in epileptics. He had periods of excessive depression, and sometimes they amounted to fainting spells. But we may well imagine that his psychical defects vanished when a campaign was on, and it would be daring to assert that he was really the subject of epilepsy.

DRUG HABITS.

The part which drugs have taken in the history of civilized nations of the West is very great. Alcohol, particularly, has swept away whole tribes of savages who were in the way of the white conqueror. In all probability, too, it has helped to eliminate the unfit and to produce a race "vaccinated" against alcoholism as well as against tuberculosis, syphilis, and other scourges which are gradually becoming more and more attenuated as they filter down through the generations. It is not very long ago that the victim of alcohol was thought to be deliberately vicious, choosing the path of degradation with his eyes open; the courts take that view now and sentence the drunkard to varying terms in prison, with the well known lack of good results, nay, even with the worst possible result, that of destroying what vestiges of self respect may remain. A more recent view of the matter is that excessive addiction to alcohol is a disease. The main remedy has been to seclude the victim with others of his class in more or less well equipped sanatoria. Here he is likely to enjoy his rest and the extremely congenial companionship. By exchanging stories of past experiences he learns to take a very lenient view of his peccadilloes, and this fact, coupled with the idea that he is suffering from a vaguely diagnosticated disease, is not unlikely to cause a quick relapse on his discharge.

Narcomania, of which alcoholism is but a phase, is more probably a symptom. The victims of congenital mitral stenosis or patent foramen ovale, the immense number of sufferers from a functional weakness of the heart muscle, the inheritors of gouty and rheumatic, tuberculous, or other dyscrasias frequently go through life with a vague notion that they are not quite normal until the first glass of wine or whiskey dissipates the impression. The shyness, the sense of physical unfitness, the aloofness disappear and a confidence is born that is felt to be too valuable to lose. The kindly drink is resorted to again and again till a chronic condition results that is tersely and accurately described by the latest slang word, "stewed." If these unfit members of the race happen to be thrown in contact with users of opium or cocaine, the system, further weakened by alcoholic indulgence, readily acquires the new habit and the euphoria produced by the modern trio of narcotics becomes speedily indispensable. The temporary mental exaltation caused by the early doses does not follow later indulgence, but a craving is established that, if not satisfied, causes suffering which, even if it is only one quarter as dreadful as it appears to the observer, must be agonizing indeed.

Alcoholic excesses are frequently controlled by the exercise of will power, but the will cannot battle against morphine or cocaine addiction. The victim must be helped. We believe good permanent results might follow careful diagnosis of the fundamental physical condition, and treatment, mainly hygienic, directed to its removal. It is an interesting question whether in the case of an intractable rheumatism, with its terrible pains, it might not be better merely to control the continuance of the morphine habit and so permit the sufferer to get something out of life.

Normal, healthy people, unconscious of their metabolic processes, will probably continue to misunderstand and condemn the unhappy class of narcomaniacs. But physicians should approach them in the same spirit as they approach other sick people. Their position is pitiable; to acute physical suffering are added the gloomy imaginings of a profoundly pessimistic mind. What wonder if they turn to the only friend in sight, which, if treacherous, presents a suave and smiling front. A swallow or a needle prick, and black Care vanishes from the stage; Fancy rolls back the portals of her magic cavern, conjures up her train of gorgeous and fantastic sprites, and tricks intoxicated reason into oblivion of the sordid realities of existence; one by one the higher faculties drop into slumber, till at length fancy, wearied herself, with her Walpurgis night attendants, vanishes into the darkness and leaves a brain steeped in blessed forgetfulness.

News Items.

NEW YORK CITY AND STATE.

A Gift to the New York Postgraduate Medical School and Hospital.—A gift of $5,000 has been made to the New York Postgraduate Medical School and Hospital, by Mr. and Mrs. Edgar E. Brandon, of Oxford, Ohio, "in memory of their infant son, William Templeton Brandon," to establish an obstetrical ward in connection with the hospital.

An Accident to a Physician.—Dr. John Van Duyn, of Syracuse, was seriously injured on Friday, July 13th, in a head-on collision between his automobile and a rapid transit car on the University line of that city. He was attended by Dr. D. M. Totman, who witnessed the accident and who had him conveyed at once to the hospital where his wounds were dressed and he was made as comfortable as possible. We are not informed of the extent of his injuries, but at last accounts he was said to be "resting comfortably." Dr. Van Duyn is professor of the history of medicine in Syracuse University College of Medicine, a position created for him when he resigned the chair of surgery, in which he was succeeded by Dr. Totman.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending July 21, 1906:

	July 21.		July 14.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	60	17	51	11
Smallpox	..	..	2	..
Varicella	29	..	31	..
Measles	268	8	293	15
Scarlet fever	72	6	86	10
Whooping cough	59	7	45	10
Diphtheria	206	28	224	36
Tuberculosis pulmonalis	393	182	392	163
Cerebrospinal meningitis	3	12	7	12
Totals	1,090	260	1,131	257

PHILADELPHIA AND THE MIDDLE STATES.

Removal of Dumping Grounds.—So many reports of objectionable dumping grounds have been received by the board of health that Director Coplin has directed their removal. He fears that they may form the breeding places of mosquitoes, attract rats, or the like.

Personal.—Dr. Gordon G. Walton, of Paterson, N. J., is in the General Hospital in that city with a fracture of the right hip, the result of an accident on Saturday, July 14th, at Little Falls, in a runaway while attending there the patient of a physician who was on a vacation.

State Medical Censors to Meet.—The censors of the fifth censorial district of the State Medical Society will meet in York, Thursday, August 9th. Physicians from Cumberland, Franklin, and Fulton counties will attend the convention. Among the prominent speakers will be Major James E. Pilcher, of Carlisle.

New Filter Plant Inspection in Pittsburgh.—Superintendent Edwards, of the bureau of health, and Dr. Matson, city bacteriologist, have lately inspected the new filter plant and gave it a thorough examination. The typhoid situation is not improving much on account of the scarcity of inspectors. The present inspectors have decided that all inside closets must be made to drain directly into the sewer.

City Hospital Appointments.—Dr. Leonard D. Frescoln has been appointed assistant chief resident in the Philadelphia General Hospital; Dr. William W. Richardson has been appointed assistant physician in the insane department of the Philadelphia General Hospital; Dr. Louis Schwartz has been appointed junior resident physician in the Municipal Hospital.

Distribution of Diphtheria Antitoxine Free to the Poor.—Dr. Samuel G. Dixon, State Commissioner of Health of Pennsylvania, has been distributing antitoxine gratuitously to the needy, and reports very encouraging results. In those cases where it was possible to follow exactly the directions there was no mortality. The whole mortality of cases reported as diphtheria was 3 per cent. The department advises that antitoxine be used in every suspicious case.

The Lehigh Valley (Pa.) Medical Association.—At the annual meeting of this association, held at Easton, Pa., on July 11th and 12th, the election of officers resulted as follows: President, Dr. Charles McIntire, of Easton; vice-presidents, Dr. G. W. Guthrie, of Wilkes-Barre; Dr. A. F. Myers, of Blooming Glen; Dr. J. H. Wilson, of Bethlehem; and Dr. O. H. Sproul, of Flemington, N. J.; secretary, Dr. C. J. Kistler, of Lehightown; assistant secretary, Dr. William P. Walker, of South Bethlehem; treasurer, Dr. A. A. Seem, of Bangor. The winter session of the association will be held at Bethlehem on the second Tuesday in February, 1907.

The Health of Philadelphia.—During the week ending July 14th, the following cases of transmissible disease were reported to the Bureau of Health:

	Cases.	Deaths.
Typhoid Fever	76	15
Scarlet Fever	12	0
Chicken Pox	7	0
Diphtheria	40	4
Cerebrospinal Meningitis	2	0
Measles	33	3
Whooping Cough	57	11
Tuberculosis of the Lungs	102	64
Pneumonia	18	23
Erysipelas	1	0
Puerperal Fever	2	2
German Measles	1	0
Tetanus	2	0
Mumps	2	0
Cancer	15	16

The following deaths were also reported from transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 16; dysentery, 1; cholera morbus, 1; diarrhœa and enteritis, under two years of age, 115. The infant mortality was 178 under one year of age and 28 between one and two years of age. The total number of deaths were 539, corresponding to an annual death rate in 1,000 of 19.08, in an estimated population of 1,469,126. There were 24 still births, 17 males and 7 females. No unusual meteorological conditions were observed.

BOSTON AND NEW ENGLAND

The Franklin District, Mass., Medical Society.—The following programme was presented at a meeting held at Greenfield, on Tuesday, July 17th: Fractures Involving the Elbow Joint, by Dr. H. G. Stetson; Granular Ophthalmia, by Dr. B. P. Croft; Report of a Case of Purpura Hæmorrhagica, by Dr. Charles Moline.

Pasteur Treatment of Rabies Suspects in Boston.—It is announced that hereafter Boston will take care of its own rabies suspects. That is, all persons bitten by mad dogs, who would otherwise have to be sent on to the Pasteur Hospital in New York, at a cost of $200 or more each will be treated at the Boston City Hospital at far less expense. Three cases have been treated successfully, the patients being discharged cured after a period of two weeks each, so it is alleged, but to make it certain, the patients will be kept under observation for some time.

The Mortality of Boston.—The number of deaths reported to the board of health for the week ending July 14th, was 174, as against 201 the corresponding week last year, showing a decrease of 27 deaths, and making the death rate for the week 15.07. The number of cases and deaths from infectious diseases was as follows: Diphtheria, 34 cases, 3 deaths; scarlatina, 26 cases, 1 death; typhoid fever, 12 cases, 2 deaths; measles, 36 cases, no deaths; tuberculosis, 41 cases, 15 deaths; smallpox, no cases, no deaths. The deaths from pneumonia were 19, whooping cough 4, heart disease 23, bronchitis 3, marasmus 8. There were 8 deaths from violent causes. The number of children who died under one year of age was 39, under five years of age 54, persons over sixty years of age 35, deaths in public institutions 53.

BALTIMORE AND THE SOUTH.

The Maryland Tuberculosis Sanitarium Commission.—Governor Warfield has appointed the following members of the Tuberculosis Sanitarium Commission: Hon. John Walter Smith, Snow Hill; Dr. H. Warren Buckler, Baltimore; Dr. Henry B. Jacobs, Baltimore; Dr. Guy Steele, Cambridge; Dr. C. H. Conley, Frederick county; Dr. Charles H. Ellis, Elkton.

The Richmond (Va.) Academy of Medicine and Surgery.—The following programme was prepared for a meeting of this academy, held on Tuesday, July 24th: Anæsthetics in Obstetrics, by Dr. D. J. Coleman; Interstitial Nephritis, by Dr. Truman A. Parker; Exhibition of Patient Recently Operated Upon for Excision of Gasserian Ganglion, by Dr. J. S. Horsley.

The College of Physicians and Surgeons, of Little Rock, Ark.—Articles of incorporation for this college have been filed, showing Dr. C. R. Shinault, president; Dr. G. M. D. Cantrel, vice-president; and Dr. W. P. Illing, secretary and treasurer. The three foregoing, together with Dr. E. Meek, Dr. A. E. Sweatland, and Dr. D. C. Walt, constitute the directorate. The college will be housed in the old Maddox

Seminary buildings, which were sold recently to representatives of the new organization, and will open October 1st.

The Jefferson County (Ky.) Medical Society.—The following programme was arranged for a meeting of this society, held at Louisville, on Monday, July 23rd: Report of Clinical Cases: Retroversion Complicated by Pregnancy, by Dr. W. F. Boggess; Obstetrical Case, by Dr. Edward Spiedel and Dr. Charles Hibbitt; Pathological Specimens, Intussusception, by Dr. J. B. Bullitt; Paper: Deciduoma Malignum, by Dr. Irvin Abell; Discussion, led by Dr. A. M. Vance and Dr. A. M. Cartledge.

The Tri-County (Miss.) Medical Society.—A number of physicians representing the counties of Pike, Lincoln, and Copiah, Mississippi, held a meeting at Brookhaven, Mississippi, on Wednesday, July 18th, and organized a society with the above given name. Officers were elected as follows: President, Dr. D. W. Jones, of Fernwood; vice-presidents, Dr. J. A. Rowan, of Wesson; Dr. J. W. Bennett, of Brookhaven; Dr. W. H. Bates, of Osyka; secretary and treasurer, Dr. W. H. Frizell, of Brookhaven. The next meeting of the society will be held in Brookhaven, September 11th, and the meetings after that will be held quarterly.

The South Piedmont (Va.) Medical Association, composed of physicians from Lynchburg, Danville, and contiguous counties, held its second convention at Lynchburg, on Tuesday, July 17th. The election of officers resulted as follows: President, Dr. S. T. A. Kent, Ingram; vice-presidents, Dr. H. B. Melvin, South Boston; Dr. W. L. Robinson, Danville; Dr. W. L. Williams, Brookneal; Dr. F. J. Gregory, Keysville; secretary, Dr. G. A. Stover, South Boston; treasurer, Dr. J. L. Kent, Lynchburg. The next meeting will be held at Danville, in January, 1907.

The Mortality of Baltimore.—The report of the health department for the week ending July 21 showed a total of 246 deaths, as compared with 281 the corresponding week of last year, 250 in 1904, and 220 in 1903. The annual death rate in 1,000 of population was: Whole, 21.90; white, 20.36; colored, 30.14. The principal causes of death were:

Typhoid fever	1	Pneumonia	8
Measles	1	Diarrhœa (under 2 years of age)	47
Scarlet fever	2	Bright's disease	21
Whooping cough	4	Congenital debility	16
Diphtheria	3	Lack of care	6
Consumption	25	Old age	3
Cancer	13	Suicide	1
Apoplexy	13	Accidents, etc	14
Organic heart disease	13		
Bronchitis	2		

The following number of cases of infectious diseases were reported, as compared with the corresponding week of last year:

	1905.	1906.		1905.	1906.
Diphtheria	13	14	Mumps	1	..
Scarlet fever	11	11	Whooping cough	8	4
Typhoid fever	20	30	Chicken pox	..	2
Measles	23	5	Consumption	13	21

CHICAGO AND THE WEST.

Statement of Mortality in Chicago for the Week Ending July 14, 1906, compared with the preceding week and with the corresponding week of 1905. Death rates computed on United States Census Bureau's figures of midyear populations—2,049,185 for 1906 and 1,990,750 for 1905:

	July 14, 1906.	July 7, 1906.	July 15, 1905.
Total deaths, all causes	498	471	447
Annual death rate in 1,000	12.67	11.98	11.69
Sexes—			
Males	298	272	248
Females	200	199	199
Ages—			
Under 1 year of age	123	99	107
Between 1 and 5 years of age	44	34	49
Between 5 and 20 years of age	39	34	38
Between 20 and 60 years of age	201	199	190
Over 60 years of age	91	105	63
Important causes of death—			
Apoplexy	11	12	10
Bright's disease	36	41	32
Bronchitis	10	11	13
Consumption	58	50	49
Cancer	18	27	21
Convulsions	9	6	7
Heart diseases	40	34	30
Intestinal diseases, acute	68	56	72
Measles	1	5	8
Nervous diseases	26	17	18
Pneumonia	33	32	26
Scarlet fever	5	10	4
Suicide	5	7	11
Typhoid fever	5	5	6
Violence (other than suicide)	31	36	30
Whooping cough	2	3	3
All other causes	132	114	100

For the season of the year public health conditions remain satisfactory. During the first fortnight of July the death rate was 12.32 in a thousand of population. This was 20 per cent. lower than the average July rate of the previous ten years—which was 15.47. It was 51 per cent. lower than the average of the decade 1886-1895—which was 25.55; and it was 58 per cent. lower than the average of thirty to forty years ago—which was 29.91 in a thousand.

GENERAL.

Smallpox at Colon.—On July 19th the Isthmian Canal Commission at Washington received a cablegram from Colon saying that there were twenty-seven cases of smallpox on the isthmus, all in negroes. No Americans have the disease, and so far there have been no deaths. No cases exist on the isthmus outside of Colon. All are said to be mild in type and all are quarantined. This is the first instance of an outbreak of smallpox on the isthmus since the United States undertook the construction of the canal. The opinion is expressed, however, that the authorities are in a position to grapple with the disease, and probably will be able to stamp it out without great difficulty.

The Toronto Meeting of the British Medical Association.—The Lehigh Valley Railroad, in connection with the Grand Trunk system, has arranged for a special service for those who contemplate attending the meeting of this association, August 21st to 24th, the object being to provide either a special train or special accommodations for an all daylight fast run to Toronto from New York and Philadelphia. These roads invite correspondence from physicians, at as early a date as possible, in order that there may be time to perfect these arrangements. A communication addressed to A. J. Simmons, G. E. P. A., 1460 Broadway, New York, will be given immediate attention, either in person or by letter.

The Telephone and the Doctor's Fee.—According to the *Sun's* cable despatch from London, the Vienna correspondent of the *Lancet* writes that the general use of the telephone has resulted in unpleasant conflicts between patients and medical advisers. Many patients find the telephone very convenient as a means of obtaining medical advice without having to pay the usual fee. In order to put an end to all doubts as to the lawfulness of charging for telephone consultation a case was brought in court where a patient who on several occasions, even in the night time, asked for professional advice refused to pay the fee. The judge decided that advice must be paid for whether given in the consulting room, by letter, or telephone, or at the bedside. The special knowledge of a practitioner which was acquired after long years of study, the judge said, could never be the subject of sweating. It was the duty of a practitioner to decide whether the case was such that he might safely give instructions by telephone after he had seen the patient on a previous occasion. It is the intention of the branch division of the medical council to require members to charge for such consultations.

Health in Army Camps of Instruction.—According to the New York *Tribune*, the army medical officers are much pleased with the results of the precautions which have been taken to preserve the health of troops on duty at the seven camps of instruction, where will be mobilized in the next few weeks all the infantry, cavalry, and field artillery, together with some militia. Some time before the camps were occupied the army surgeons and quartermasters arranged for special apparatus to equip them with hygienic sewerage and water supply departments. The system was a thorough one and involved the purchase and installation of the latest methods of camp conveniences. The results have been observable on every side. There was some criticism of these arrangement on the ground that it would not preserve the element of emergency which would be encountered by troops suddenly ordered into the field. Of course, in time of war, the mobilization of a large body of soldiers would have to be at places where the conveniences and comforts were improvised, perhaps in great haste and with inadequate facilities. It was considered when the situation was fully discussed by the military authorities, however, that nothing was to be gained by approaching this incomplete state more nearly than was absolutely necessary. The first condition to be made by the army surgeons was bound to be the preservation of the health of the troops, and it was reasoned that in this respect the dire emergency, with its costly demands upon individual comfort and hygiene, might profitably be ignored.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

July 19, 1906.

1. Medical Treatment of the Japanese Army (*To be continued*), By CHARLES LYNCH.
2. Therapeutics Based on Pathological Physiology, By RICHARD C. CABOT.
3. Use and Abuse of Pulmonary Gymnastics in Tuberculosis, By EDWARD O. OTIS.
4. Pulmonary Gymnastics in Tuberculosis, By HENRY B. DUNHAM.

2. **Therapeutics Based on Pathological Physiology.**—Cabot says that treatment based on pathological physiology is not the best type of therapeutics yet worked out; neither is it the worst. It occupies a position intermediate in value and efficiency between ætiological treatment or that which removes the cause of disease, and symptomatic treatment which simply smothers a symptom. It is based on theories of the nature and trend of the body's reaction against the *materia morbi*, theories which like all valuable hypotheses must be constantly and empirically verified. Empiricism is not a type of treatment, but an essential element in all treatment. Nevertheless, theory is invaluable because it furnishes the motive power of most scientific progress; empirical verification guides, but does not initiate this progress. Treatment which aims to remove the cause of disease should neglect very largely the individual factors in the case, but treatment based on pathological physiology can be effective only by ascertaining and respecting the physical and psychical peculiarities of each individual and the unique relations in which he stands to his family, his work, his education, his place of residence, and many other aspects of his environment. Ætiological or symptomatic treatment must first ascertain at what spot in the organism the trouble resides. To that spot it then directs its energies. But treatment based on the individual's manner of reacting to the disease must study the whole individual so far as it can discover him.

3, 4. **Pulmonary Gymnastics in Tuberculosis.**—Otis thinks that pulmonary gymnastics or deep breathing, which are quite generally recommended and used in the treatment of pulmonary tuberculosis, are all too frequently thus recommended and employed, both by the physician and the patient himself, in a vague, indefinite, and indiscriminate fashion, both as to the method of their application and as to the class and condition of the patients to which they are applied. In patients who do not show acute symptoms and with a tendency towards arrest or well on the road to arrest, and possessing a certain amount of vitality, pulmonary gymnastics carefully applied and supervised would appear, both from experience and theory, to be useful in aiding and hastening the arrest; at least, there is no conclusive evidence that harm results therefrom. Furthermore, it has been shown that the patients themselves express a sense of well being from such deep breathing and the mental effect is of value. Used in unfit cases, and many cases on the border line can only be determined as fit or unfit by trial, harm may obviously ensue. It is therefore that pulmonary gymnastics are to be applied with the same discrimination and individual application as any other form of treatment. Indiscriminate use of them can only be followed by the same results as the indiscriminate use of any other remedy, sometimes to good effect, sometimes to the injury of the patient. The author describes the methods employed by Meissen, Nahm, and others: First, a deep inspiration is taken through the nose, the mouth being closed. Second, the breath is held for a moment. Third, a deep expiration through the nose or mouth. The inspiration can be strengthened by gradually raising the arms to a horizontal position or over the head, and letting them fall in expiration. The expiration can also be strengthened by uttering a short word at the end of expiration, for example, "one," then "two," etc. Six such breathing movements are to be taken at one time, which may be repeated many times during the day, and they may be performed either reclining, standing, or walking. Violent and fatiguing efforts in deep breathing are to be avoided. Dunham believes that oxygen is in a sense one of the most valuable and necessary food elements in the proper nourishment of animal life. In treating tuberculosis, just as the digestive powers should be exercised and their function stimulated to the limit of assimilation, so the lungs should be exercised and have constantly within their alveoli as much of the freshest, "most appetizing" air as they can possibly assimilate. Eating, even if there be no appetite, is urged under proper limitations. Respiration beyond the involuntary demand for oxygen may also be urged with due restrictions and proper limitations. An "appetite" for fresh air should be produced, together with increased assimilative capacity for fresh air. At first, the deep breathing may be partially forced; later, the breathing will have become involuntarily deepened from an awakened systemic desire for oxygen. It is to be understood that none but afebrile cases should indulge in breathing exercises, and then only upon the advice of the physician. Experiments at the State sanatorium, of Massachusetts, have proved that in many cases of tuberculosis where moist râles and bacilli in sputum are still present, breathing exercises could be indulged in without injury. There were no exacerbations during the period of deep breathing. There were several exacerbations during the period of shallow breathing. The patients either felt the same or slightly better during the deep breathing period. They all preferred the deep to shallow respirations. The average gain in weight was greater during the period of deep breaths. In regard to the physical signs, etc., of the cases selected, one third were incipient, one third moderately advanced, and one third advanced. The average length of stay prior to the test was four months.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

July 21, 1906.

1. Some Recent Rhinological Achievements and Tendencies. Address of Chairman of Section on Laryngology and Otology, at the Fifty-seventh Annual Session of the American Medical Association, at Boston, June, 1906, By OTTO T. FREER.
2. Report of Four Cases Showing the Results of Kilian's Operation, By FREDERICK L. JACK.
3. A New Method of Anastomosis of the Vas Deferens, By G. FRANK LYDSTON.
4. Elbow Joint Injuries. With Report of Cases, By STEWART L. MCCURDY.
5. The Poison of the Meningococcus, By A. P. OHLMACHER.
6. New Phenomenon of Color Conversion, By GEORGE T. STEVENS.
7. Case of Spontaneous Intracranial Hæmorrhage Associated with Trigeminal Nævi, By HARVEY CUSHING.
8. Radium in Surgery, By ROBERT ABBE.
9. Uncinariasis in Mississippi, By C. C. BASS.
10. A Method of Treatment of Hæmorrhage. Preliminary Note, By GEORGE CRILE and D. H. DOLLEY.
11. What is the Effect on Progeny of the Loss of Teeth in Ancestry? By M. H. FLETCHER.
12. Physical Economics, By ERASTUS EUGENE HOLT.

2. **Report of Four Cases Showing the Results of Killian's Operation.**—Jack reports the cases of four patients who had suffered for years from chronic suppurative ethmoiditis with abscess breaking into the orbit. Exophthalmus varied from slight to marked protrusion of the eye. The operation performed was practically the one described by Killian. The Krause trephine was used for making the opening in the nasal bone, afterwards removing with a bone forceps as

much as was necessary for freer access to the nasal cavity. By this method, the author thinks, there is less risk of breaking downward, an incident which probably would be followed by some deformity. Mosher's graduated curette was found of great value in the deeper parts of the nasal cavity. Convalescence was rapid and uncomplicated. But the results of the x ray examination have been unsatisfactory, which may have been probably due to faulty methods.

3. **A New Method of Anastomosis of the Vas Deferens.**—Lydston is of the opinion that vasectomy should not be performed in any case in which there is a reasonable probability of relief by less radical means. The operation, when properly performed, is practically free from danger. It does not produce atrophy of the testicle, a condition which, when it follows vasectomy, can be explained on grounds rather than disturbed circulation and innervation, incidental to the operation on the vas. Furthermore, it does not produce impotency, as in most of the cases in which the operation is performed the patient is already impotent. But the most important point of all is the fact that while the operation does not produce permanent sterility, it is by no means necessary that the patient should remain sterile after the operation has accomplished its purpose. It is practicable in probably by far the larger proportion of cases to restore the continuity of one or both vasa deferentia at any time the surgeon may so elect, thus restoring fertility. Important fields of usefulness for the operation of vasectomy are sexual neurasthenics, spermatophobiacs, genuine spermatorrhœa, recurrent epididymitis, suspected or known tuberculosis, and malignant disease of the testes. The author describes his mode of operation, and states that of the six patients upon whom he has operated, one has shown microscopically a restoration of the function of the vas deferens by the spermatozoids in the semen. Of the other five, one is apparently a failure, two have given no opportunity for determining their condition, and two cases are too recent for consideration.

5. **The Poison of the Meningococcus.**—Ohlmacher has demonstrated by experimenting on a horse with intravenous injections that there is a powerful poison derived from the meningococcus. The symptoms produced are restlessness accompanied by a rise of temperature, pulse and respiration, progressive asthma, muscular tremors, clonic convulsions, opistotonus, irritation, with repeated soft bowel movements, while death takes place from exhaustion.

7. **Cases of Spontaneous Intracranial Hæmorrhage Associated with Trigeminal Nævi.**—Cushing wishes to record three cases of trigeminal nævi in which have arisen certain complications, due, he thinks, to the fact that the cutaneous lesion may be accompanied by a similar condition of vascularity of the dura mater; it is also suggestive that this membrane receives its nerves of sensation by filaments from the fifth nerve, the same nerve which innervates the cutaneous area. This observation was first made by Bärensprung. The author in conclusion says that vascular nævi occurring on the face show a tendency to conform with the distribution of one or more of the main trigeminal branches. These cutaneous nævi may be associated with some degree of hypertrophy of the deeper tissues of the face, with an enlargement of the eye, and, finally, with the presence of a corresponding nævoid condition of the dura mater. This dural nævus may lead to a spontaneous hæmorrhage during infancy, with consequences similar to those which follow the subdural hæmorrhages occurring during the early months of life from other causes, epilepsy, spastic hemiplegia, or even amentia. Absorption of the clot may lead to corticodural adhesions which in favorable cases can be separated with benefit to the epileptiform convulsions, provided measures such as carotoid ligation are taken to prevent complications from too great a loss of blood during the operation.

8. **Radium in Surgery.**—Abbe has used very powerful radium applications in 127 cases, representing twenty-two different surgical conditions. The greatest interest centres around the new growths, lupus, epithelioma, cancer, and sarcoma. It is of interest to note that the ordinary wart, small or large, is but an overgrowth of the cells normal to the skin, and in every case where he has laid a radium tube on one, it has speedily disappeared through a process of retrograde degeneration of the mass of cells composing it. Of thirty-five cases of lupus and epitheliomata not one has failed to show prompt healing action. Twenty have been cured, at least for the time, and with probability that many are permanent, but with a slight recurrence in some, which always has yielded to a short secondary treatment. In forty cases of cancer, twenty-eight were inoperable, eleven patients would have admitted operation, but were given a radium test, and six of these were subsequently operated upon; the other five are so much improved that operation is hopefully deferred. Seven cases of sarcoma were also successfully treated. He concludes that: Radium action resembles that of Röntgen rays. It differs specifically, and will cure some cases promptly which resist the latter. It is applicable to the interior cavities of nose and mouth inaccessible to the Röntgen ray. It is curative in most superficial epithelial cancers and lupus. It has failed of curative action as yet in forty test cases of grave internal cancers. It promises interesting results in other surgical conditions under study.

9. **Uncinariasis in Mississippi.**—Bass has sent out a general letter to 993 physicians in Mississippi, inquiring about cases of uncinariasis, to which he received eighty-eight replies, with seventy-one specimens of fæces, sixty-one of which contained eggs of uncinaria. These cases represented twenty-three of the seventy-six counties of Mississippi. The treatment is simple, satisfactory, and definite. It consists in emptying the alimentary canal with a purgative, giving sixty grains of powdered thymol divided in two or three doses, two hours apart. In two or three hours a saline cathartic should be given. During the course of treatment no food, alcohol, or oil is allowed. This cure should be repeated once a week until no ova are found. It will require from one to a dozen courses. It must be remembered that sixty grains of thymol is an adult dose. The author believes that the State is widely infected with a disease slower, yet more deadly, either directly or indirectly, than yellow fever, tuberculosis, malaria, and smallpox. Besides, the daily financial loss is enormous. The legislature should therefore be appealed to, and knowledge of the disease disseminated to the physicians and laity.

11. **What Is the Effect on Progeny of the Loss of Teeth in Ancestry?**—Fletcher thinks that the increasing tendency in our modern civilization to dental degeneration is the inherited result of neglect and decay of teeth in former degenerations. While we are not in danger of a toothless future, yet we can imagine a future state in which the teeth of man might be rudimentary. In fact, it is not uncommon now for our wisdom teeth to be diminutive in size, or not to erupt at all. In structure our teeth are perceptibly rudimentary, and in consequence, they are lacking in power to live a normal, healthy life.

MEDICAL RECORD

July 21, 1906.

1. Multiple Motor Neuritis, Including Landry's Paralysis and Lead Palsy; with Reports of Cases, By William G. Spiller and Warfield T. Longcope.
2. Diet in Tuberculosis, By Herbert Maxon King.
3. Manifestations of Syphilis Associated with Pulmonary Tuberculosis, By John H. Pryor.

4. Reflex Symptoms and Referred Pains Caused by Stone in the Kidney, By STELLA STEVENS BRADFORD.
5. The Ophthalmoscope as an Aid to the General Practitioner, By CLARENCE P. FRANKLIN.

1. Multiple Motor Neuritis, Including Landry's Paralysis and Lead Palsy.—Spiller and Longcope describe four cases which, they say, might be classed as Landry's paralysis, two with necropsy, but which they regard as atypical forms of multiple motor neuritis, atypical in the rapidity of their development, one case developing complete paralysis of all four limbs with great tenderness of all the muscles of the limbs to pressure in about twenty-four hours. The authors continue that cases of rapidly developing paralysis of all four limbs are not common. Undoubtedly many cases classed as Landry's paralysis are caused by neuritis, but to assume that all have this ætiology, as some writers have done, is unjustiable. The literature of Landry's paralysis has become so extensive that it is inadvisable to review it. The subject has recently been discussed by Hans Lohrisch, and the report of his case, among others, shows that Landry's paralysis may be spinal in origin. Lohrisch found disease of the gray matter in all parts of the spinal cord and medulla oblongata, as shown by hæmorrhages, degeneration of medullary sheaths in the gray matter, degeneration of the nerve cells, and of the anterior roots. He describes it as a diffuse acute poliomyelitis. The authors believe that many cases with the symptom complex known as Landry's paralysis are cases of multiple motor neuritis. The ingenious theory of Edinger may give an explanation for the first manifestations of the paralysis in the lower limbs. The nerves of the lower limbs are most employed, and therefore are most susceptible to poisons, and in Landry's paralysis, as in tabes resulting from another poison, the symptoms are first manifested in the lower limbs.

2. Diet in Tuberculosis.—King states that in the matter of food for the tuberculous invalid, our teaching, up to the present time, has been largely empirical. Weight gains have followed heavy feedings, consequently the diet should be pushed to the limit of toleration. From time to time, to be sure, warnings have been sounded against the danger of overfeeding, but they have been less heeded than would have been the case if they had originated from convincing scientific experimentation, rather than from individual judgment, however good, based upon mere observation of gross phenomena. To determine with any certainty the standard food requirements for tuberculous invalids, we shall have to make a more thorough study of metabolism than has yet, so far as he is aware, been done. It is not sufficient to compare the total nitrogen output of the urine with the total proteids of the food, but the fæces must be analyzed at the same time in order to differentiate between endogenous and exogenous metabolism, and thus determine the amount of nitrogen required in the food to balance the pathological tissue catabolism. This means the clinical application on a large scale of the methods which have characterized some of the recent brilliant researches in physiological chemistry, and involves work practicable only in tuberculosis hospitals and sanatoria. A more careful inquiry into the whole subject, however, is assured when its importance is realized, for it must be conceded that it is not consistent practice to unnecessarily overburden the organs of digestion and elimination, and at the same time to insist upon body rest. The author narrates several cases of forced feeding, and describes daily food régimen which was found practical. He adds a detailed menu which was experimentally given to twelve patients. King is of the opinion that a tuberculous invalid without acute symptoms may be given a proportioned diet of from forty-five to eighty calories per kilo of body weight, without danger of overfeeding; but vigilance must be exercised, for there are many exceptions to the general rule.

BRITISH MEDICAL JOURNAL

July 7, 1906.

1. Some Points in the Surgery of the Lung (*Cavendish Lecture*), By Sir W. MACEWEN.
2. The Borderland of Epilepsy: Vertigo (*Lecture I*), By Sir W. R. GOWERS.
3. Neurasthenia. Its Nature and Treatment, By D. DRUMMOND.
4. On Cancer, By Sir S. WILKS.
5. The Opsonic Theory and Its Practical Application to Medicine and Surgery, By G. W. ROSS.
6. Observations on the Opsonic Index of Tuberculous Patients Undergoing Sanatorium Treatment, By G. A. GRACE-CALVERT.
7. The Electromotive Changes in Heart Block, By G. A. GIBSON.

1. Lung Surgery.—Macewen, in the Cavendish lecture, gives a series of observations on the physical, physiological, and pathological phenomena met with in dealing with human lungs and their pleuræ. The admission of air to the pleura, and its results has been the greatest barrier to the surgery of the lung. When pulumothorax causes absolute collapse of the lung, and this condition is persistent, pulmonary consolidation may ensue. The longer air exists in the pleural sac the drier the serous surfaces become, and even when extra fluid is poured out the natural secretion is altered, and its capillarity and cohesive power are defective. In such cases, after repeated tappings, if the pulumothorax persists to a marked extent and threatens pulmonary collapse, open the pleural cavity by removal of a portion of rib, if necessary, as near the seat of the pulmonary injury as possible, and close the wound in the lung by suturing the visceral layer of the pleura where permissible. Then place the two pleural layers together by bringing the parietal into contact with the visceral layer. This must be effected by firm pressure on the chest and diaphragm. Cohesion will again occur between the two layers of the pleura and the pneumothorax will disappear. Maintain the aperture in the costal pleura until the wound in the lung is healed, or at least until it has been firmly sealed by exudation. The writer has long taught that molecular cohesion and capillarity are the principal forces at work in maintaining the expansion of the lung, and also that when collapse of the lung does take place, these forces can be brought into play, so as to produce reexpansion of the lung. Although the molecular cohesion is slight at any given point between the two pleural layers, yet when distributed over the entire surface of the periphery of the lungs, its cumulative effect is very great and amply sufficient for the purpose. The possibility of the pleuræ becoming dry must be considered. Blood acts very satisfactorily as a lubricating fluid; sterilized water is sometimes used and acts well. When pathological changes supervene the behavior of the pleura may be modified accordingly. Plastic exudation or fibrinous patches lessen greatly the power of moleular cohesion; there is also an absence of the normal lubricating fluid. The primary shock which ensues upon the admission of air to the pleuræ, and which follows the collapse of the lung, is probably due primarily to the effect upon the heart, although the compression of the lung, impairment of the respiratory exchange of gases, and the displacement of the mediastinum are also contributory causes. When one lung collapses the heart and great vessels lose much of their support.

5, 6. Opsonins.—Ross discusses the opsonic theory and its application to medicine and surgery. Among his conclusions are the following: 1. These substances, so essential to phagocytosis do not act upon the leucocytes (as a stimulant to the leucocytes, for example),

but they combine with the microorganisms and prepare them for phagocytosis; hence the name *opsonins,* from *opsono,* I cater for. The conception of their mode of action is that the opsonins are carried in the lymph to the nest of microbes which are responsible for the morbid process; that they chemically unite with the microrganisms, and that then, and not until then, the leucocytes have the power of enveloping and destroying these microorganisms. Thus it follows that the amount of phagocytosis which is observed is a measure of the quantity of opsonins present in any particular plasma, and does not represent the vital activity of the leucocytes. 2. The opsonins in a normal serum are almost completely destroyed by heating for ten minutes at 60° C. 3. The opsonins have been shown to be distinct from the bacteriolysins, agglutinins, and the antitoxines. Certain generalizations have emerged from the investigation of numerous cases. 1. If the bacterial infection be strictly localized, the opsonic index of the blood as concerns the particular microbe causing the infection, is below normal. 2. In infections which are not strictly localized the opsonic index will be found high at one time and low at another; that is, the opsonic index in systemic infections tends to fluctuate from high to low. This characteristic is well shown in cases of acute pulmonary tuberculosis. In early or advanced cases that have been in bed for some time, the index is low. 3. Normal individuals, not the subject of any bacterial infection, present a constant opsonic power to the various pathogenic bacteria. In the diagnosis of obscure tubercular conditions, the opsonic method is of great value. Grace-Calvert thus sums up our present knowledge regarding the opsonic index in pulmonary tuberculosis. 1. In slight early cases it is above normal. 2. In acute cases it fluctuates greatly from day to day. 3. In chronic cases it is below normal. 4. In sanatorium cures it is variable.

LANCET.

July 7, 1906.

1. Myelitis (*Harveian Lecture*), By J. S. R. Russell.
2. Tuberculosis of the Cæcum, Ileocæcal Valve, and Appendix, with Four Unpublished Cases, By C. B. Keetley.
3. A Means of Checking the Spread of "Sleeping Sickness," By J. L. Todd.
4. A Note on the Action of the Serum of Various Mammals on the Bacillus Pestis, By G. Lamb and W. H. C. Forster.
5. The Old and the New in Ocular Therapeutics, By A. M. Ramsay.
6. Medical Attendance on the Working Classes, By J. H. Keay.
7. Two Cases in Which Gastroenterostomy Was Performed in the Case of Operation for Perforated Ulcer, By E. Ward.
8. A Case of Cyanosis with Polycythæmia, By J. W. Russell.
9. A Case of Hæmatomyelia Due to Trauma, with Observations on the Course in the Spinal Cord of the Secretory Nerves to the Sweat Glands, By W. A. Rees.
10. Motor Driver's Spine (?), By W. J. Burroughs.
11. Some Throat Affections, By W. H. Kelson.
12. The Leuhartz Treatment of Gastric Ulcer at the Eppendorfer Krankenhaus, Hamburg, By J. V. Haberman.

1. **Myelitis.**—Russell, in the Harveian lecture, states that true myelitis, meaning by the term an inflammation of the spinal cord, is a rare malady. Much of what is spoken of as myelitis is in reality a softening of the spinal cord consequent upon vascular occlusion, in which inflammation plays no part except it be that some inflammatory process in connection with the walls of the bloodvessels permits of the thrombosis or clotting which results in the cutting off of the blood supply from some area of the cord, which results in softening. In true myelitis there is round cell infiltration, engorgement of vessels, and in many places actual hæmorrhages. In softening only degenerative changes are seen. As for chronic myelitis—a slow progressive inflammation of the spinal cord—the writer holds that no such thing exists. Cold, rheumatism, or gout have no power to start an interstitial, slowly progressive inflammation in the connective tissue of the cord. Prognosis is most uncertain in true myelitis; seemingly hopeless cases recover under appropriate treatment. Irrespectively of whether the patient be suffering from syphilis or not, there is no treatment that can compare with mercury. Mercurial inunctions are to be preferred to oral administration; in acute cases mercurial injections may be highly desirable. The inunctions should be given along the spinal column.

2. **Cæcal Tuberculosis.**—Keetley states that when tuberculosis of the intestine forms a solitary tumor, the ileocæcal valve or cæcum is the part usually affected. Tubercle of the rectum while not uncommon, usually leads to ulceration and fistula rather than to tumor. These forms must be distinguished from the extensive ulcerations which complicate the last stage of pulmonary tuberculosis. Appendiceal tuberculosis is nearly always secondary to disease of the cæcum. In the four cases reported by the writer the dominant factor was disease of the ileocæcal valve and cæcum. The process may be ulcerative, or hyperplastic, or peritoneal. But there is always thickening. The symptoms are mainly those of chronic or subacute inflammation. When the cæcum is not involved the usual diagnosis is that of chronic appendicitis. When the cæcum is involved and a tumor is felt, malignant disease is often suspected, especially when the patient is no longer young. Blood or mucus may appear in the stools, the bowels being irregular. With either tuberculosis or cancerous disease of the cæcum great wasting occurs. But the tuberculous cases have the characteristic tubercular facies. There might be a fair hope of curing ileocæcal and appendiceal tuberculosis without excising the disease, merely by an ileostomy combined with suitable general treatment.

3. **Sleeping Sickness.**—Todd concludes that the enormous spread and great increase of sleeping sickness in the Congo basin have been due in great measure to the increase in travel following the opening up of the country. Cases of trypanosomiasis, though apparently healthy, may be detected by their enlarged glands. Therefore the advance of the disease should be checked by the serious application of quarantine measures dependent for their efficiency upon cervical gland palpation.

4. **Immunity to Plague.**—Lamb and Forster, suspecting that the immunity to plague enjoyed by many mammals (horses, oxen, sheep, goats, dogs, rabbits) might be due to some inherent properties of the blood serum, have investigated the subject. They found that the serum of all the animals mentioned above proved to be as good a medium for the growth of the plague bacillus as ordinary nutrient broth. From their experiments it would seem that normal mammalian serum is devoid of any bactericidal action on the plague bacillus, and the explanation of the immunity to the disease must be sought for elsewhere.

9. **Sweating Centre in Man.**—Rees reports a case of hæmatomyelia, or hæmorrhage into the spinal cord, occurring in a man, aged forty-two years, and due to a fall. The hæmorrhage probably started at the first dorsal segment of the cord, producing its maximum effects at this level. From observations on the nervous phenomena of the case, the writer concludes that while in animals there is a subsidiary sweat centre in the lumbar enlargement of the spinal cord, it is nonexistent in man. Normally human sweating is produced by impulses conveyed to the periphery by secretory nerve fibres which pass down the cord from the sweat centre

or centres situated in the medulla or upper part of the cord; the passage of these impulses in his patient was interrupted by the hæmorrhage in the cervical region into the gray matter round the central canal. So that the secretory fibres for the sweat glands probably pass down the spinal cord in the gray matter.

LYON MEDICAL.

June 24, 1906.

1. Renal Calculus Diagnosticated by Means of Radiography. Nephrolithotomy, By ARCELIN and RAFIN.
2. A Case of Hippus Observed in the Course of a Cerebral Abscess, By CHARLES BOURRET.

1. Renal Calculus Diagnosticated by Means of Radiography.—Arcelin and Rafin report a case of persistence of lumbar pain and other symptoms after the removal of a vesical calculus which raised the suspicion of a coexistent renal calculus, a suspicion which was proved to be correct by radiography. A calculus which weighed thirteen grammes was removed by a nephrolithotomy, and an uncomplicated recovery followed.

2. Hippus in the Course of a Cerebral Abscess.—Bourret reports a case of cerebral abscess of otitic origin in which the pupils rhythmically dilated and contracted independently of light, accommodation, respiration, or cardiac action. There was no hemianopsia, paralysis of the extrinsic muscles of the eye, or nystagmus, and only a slight diminution of the strength of the left arm. The abscess was found to be about the size of a pigeon's egg, and after it had been evacuated all of the symptoms produced by it immediately disappeared, with the exception of the hippus, which continued to persist for seven or eight hours and gradually died away. The hippus was present on both sides, but was more marked on the left, opposite to the lesion.

July 1, 1906.

Histological Study of the Gland of Bartholin, By A. JAMBON and G. CHABOUX.

LA PRESSE MEDICALE.

June 23, 1906.

1. The Number of People Suffering Simply from Typhlocolitis Who Are Improperly Operated on for Appendicitis Which They Have Not, By Professor DIEULAFOY.
2. The Food of the Laboring Class of Paris at Home and in Popular Restaurants According to Two Recent Investigations, By LEON BERNARD.

1. People Improperly Operated on for Appendicitis.—Dieulafoy, in response to the many replies which have been called forth by his recent article on this subject, reasserts his position, that as a result of insufficient care in diagnosis many persons who have not appendicitis are operated on for that disease. He denies the statement that has been made that appendicitis frequently is a result of enterocolitis, and tries to explain how it is possible to make a differential diagnosis between the two conditions.

June 27, 1906.

1. Fatty Infiltration and Zone of Rupture in Disease of the Liver Due to Disease of the Heart (Foie Cardiaque), By EMILE GERAUDEL.
2. The Examination of the Gastric Juice in Diseases of the Stomach, By L. SALIGNAT.
3. The Viscosity of the Blood and Cyanosis in Heart Disease, By R. ROMME.

1. Fatty Infiltration and Zone of Rupture in "Foie Cardiaque."—Geraudel states that the principal lesions observed in cases of this disease are and atrophy and a steatosis of the suprahepatic zone which by their combination produce a very thin median portion of the arch, and that the zone of rupture of the capillaries is localized at this place.

LA SEMAINE MEDICAL.

June 27, 1906.

Subacute Cholecystitis of Typhoid Fever, By F. LEJARS.

Subacute Cholecystitis of Typhoid Fever.—Lejars reports the case of a woman, thirty-five years of age, who was making a favorable convalescence from an uncomplicated attack of typhoid fever when seized with a cholecystitis which demanded immediate operation. A calculus was found which was old and explained certain troubles which had existed prior to her illness. Lejars considers that this was a case of latent cholecystitis due to the calculus, which had become infected and purulent during the course of the typhoid fever.

July 4, 1906.

The Condition of Morbid Dread, By P. LONDE.

BERLINER KLINISCHE WOCHENSHCRIFT.

June 18, 1906.

1. The Pathological Institute of Berlin, By J. ORTH.
2. Meninigitis Serosa Spinalis, By F. KRAUSE.
3. The Causes of the Early Loss of Teeth, By Professor WARNEKROS.
4. The Treatment of Impotence, By POPPER.
5. The Therapeutic and Symptomatic Value of Lumbar Puncture in Tuberculous Meninigitis of Children, By E. SCHLESINGER.
6. The Diagnosis of Carcinoma of the Stomach, By L. KUTTNER.

2. Meningitis Serosa Spinalis.—Krause reports a case in which a man was shot in the ear and in the neck. The first bullet was removed by means of a radical operation on the ear, and the patient did well for some time. Nervous symptoms then appeared, which indicated irritation of the spinal cord in the cervical region. About six months after the operation on the ear the fourth, fifth, and sixth cervical vertebræ were laid bare by an incision, and the entire left half of the arch of the fifth was found to be necrotic, while there were smaller spots of necrosis on the right side of the fourth and sixth vertebræ. The posterior segments of these bones were removed. The subjacent dura was of an evident spindle form, the largest part of the spindle corresponding to the necrosis of the arch of the fifth vertebra, and its sac contained a little œdematous fluid. The patient recovered. The purulent necrotic process in the vertebra was considered to be the cause of the serous spinal meningitis.

4. The Treatment of Impotence.—Popper recommends in functional impotence the administration of one or two pills three times a day, each containing 1 gramme of the fluid extract of muiræ puamæ, 0.05 gramme of lecithin, and a sufficient quantity of powdered rhubarb root. This preparation he calls muiracethin.

5. The Therapeutic and Symptomatic Value of Lumbar Puncture in Tuberculous Meningitis of Children.—Schlesinger strongly recommends repeated lumbar punctures in cases of tuberculous meningitis, which he pronounces the most hopeless disease of childhood, because by its means not only may the diagnosis be established, but a chance of recovery be also afforded.

MUENCHENER MEDIZINISCHE WOCH NSCHRIFT.

June 12, 1906.

1. The Nutritive Treatment of Basedow's Disease, By KONRAD ALT.
2. The Reaction of the Typhus Bacilli Demonstrated in the Blood of Patients Suffering from Typhus to the Bactericide Action of the Blood, By EPPENSTEIN and KORTE.
3. The Action of Chalybeate Water on Metabolism, By VANDEWEYER and WYBAUW.
4. Leucoderma in Syphilis, Psoriasis, and Seborrhoic Eczema, By Professor JESIONEK.
5. The Kind and Quantity of Fat for the Nutrition of Nursing Women, and the Effect of Its Diminution on the Milk Fat, By ENGEL and PLAUT.

6. Prophylactic Antisepsis, By CREDÉ.
7. Conservative Treatment of Suppuration in the Accessory Sinuses of the Nose, By HEERMANN.
8. Critical Remarks on Sondermann's Suction Method in Diseases of the Accessory Sinuses, By UFFENORDE.
9. Congenital Ankylosis of the Finger Joint, By H. HOFFMEYER.
10. A Method to Determine the Amount of Albumin in the Urine with Sufficient Accuracy for Clinical Purposes in an Hour, By GEORG BÜCHNER.
11. Cesare Lombroso, By K. RÜHL.

1. The Nutritive Treatment of Basedow's Disease.—Alt reports several cases of exophthalmic goître in which the rapidity of the heart and the other characteristic symptoms of the disease were greatly improved by a diet which contained much fat, consisting principally of milk, whipped cream, and fresh butter. The general condition of the patients likewise became much better, their weight increased, œdema and albuminuria disappeared.

3. Action of Chalybeate Water on Metabolism.—Vandeweyer and Wybauw state that the action of chalybeate waters is to increase the absorption of nitrogenous and carbohydrate materials, to decrease that of fat, and to increase the decomposition of albumin.

7. Conservative Treatment of Suppuration in the Accessory Sinuses.—Heermann means by conservative treatment the treatment of the accessory sinuses from within the cavity of the nose. He describes his method of operating for empyema of the maxillary antrum at considerable length, and more briefly the operations on the sphenoid sinus, the ethmoid, and finally the frontal sinus. He speaks highly of the method of suction as a means to remove the products of inflammation from the sinuses, but considers it useful rather as a supplementary process to the operative procedures, than as a means to supplant them.

8. The Suction Method in Diseases of the Accessory Sinuses.—Uffenorde reports two cases of empyema of the antrum of Highmore, and states that the secretion cannot be certainly and completely removed from the accessory sinuses by means of Sondermann's suction apparatus; that as a means of diagnosis the apparatus is inexact and needs to be supported by positive evidence, and that the apparatus cannot be disinfected with certainty. He is of the opinion that the method may be of service at times, but that it is at best only a help.

June 19, 1906.

1. Differentiation of Streptococci, By E. BAUMANN.
2. The Auscultation of the Vertebral Column, the Sacrum, and the Pelvis, By LUDLOFF.
3. Version in Placentia Prævia, By RUDOLF JOLLY.
4. The Military Surgery of Japan, By ADOLF TREUTLEIN.
5. The Nutrition of Infants of the Laboring Class, By JOSEPH SPAETHER.
6. A Case of Traumatic Œdema, By F. KÖHLER.
7. Treatment of Parenchymatous Keratitis with Hetol, By PAUL COHN.
8. A New Apparatus for Testing Vision, By A. BECK.
9. A Very Simple Method of Anærobic Cultivation in Fluid Nutritive Media, By FRITZ REUSCHEL.
10. The Staining of Spirochæta Pallida, By R. F. M. BERGER.
11. The Value of Statistics in Regard to Rapid Delivery in Eclampsia, By W. LIEPMANN.
12. Theilhaber's Procedure to Lessen the Possibility of Infection During Abdominal Operations, By L. v. STUBENRAUCH.
13. An Unexplained Fever with the Highest Temperature Recorded, By RICHARD HELLER.
14. The Sickness of Kaiser Sigmund (1400-1437), By WILHELM EBSTEIN.

1. Differentiation of Streptococci.—Baumann's conclusions are: 1. On Schottmüller's blood agar a clear area of resorption is formed only by pathogenic streptococci of the type of the streptococcus longus or erysipelatosus, while the stocks obtained by isolation from saliva, fæces, or milk exhibit no marked hæmolysis on this media. 2. Part of the nonhæmolytic streptococci form green coloring matter on blood agar, part do not. No law in regard to this has yet been determined. 3. With pathogenic streptococci a marked hæmolytic action is demonstrated in bouillon cultures, while with nonpathogenic streptococci such action is usually slight. 4. The hæmolysin usually appears in the bouillon cultures at the end of twenty-four hours, reaches its highest degree in from one to three days, and usually requires seven to nine days, sometimes fourteen to twenty, to disappear. 5. A better differentiation between the varieties of streptococci can be made on blood agar than in bouillon cultures. 6. The various kinds of sugar, grape, milk, and cane reveal no differences between the different stocks of streptococci. 7. No growth of streptococci was observed in Barsiekow's nutritive media or in litmus whey.

6. A Case of Traumatic Œdema.—Köhler reports the case of a man, twenty-one years of age, who struck the second finger of his right hand against the edge of a table. No external wound, fracture, or dislocation was produced. After a few hours the entire right forearm became swolen. The wrist, hand, and gradually the arm, became cyanotic, and the local temperature was lowered. The muscles were tender to pressure, the brachial and radial pulse was present, and the veins were normal. The surface of the arm was anæsthetic. There was no fever. The œdema persisted some months under expectant treatment.

ZENTRALBLATT FUER CHIRURGIE.

June 30, 1906.

1. High Hæmorrhoids as a Source of Occult Intestinal Hæmorrhages, By E. E. GOLDMANN.

1. Occult Intestinal Hæmorrhages.—Goldmann refers to hæmorrhages of uncertain origin which originate from hæmorrhoids whose site is high in the rectum. In one instance which he reports, he observed a varix eighteen centimetres above the anus. These hæmorrhages, as Nothnagel and Ewald have observed, are minute in themselves, but keep up constantly so that they bring about a severe anæmic condition in an insidious manner. The blood becomes so intimately mixed with the fæces that it escapes notice until a painstaking examination is made. Rectoscopic examination is necessary to disclose the presence of the varicose growths. Their treatment is, of course, operative.

June 30, 1906.

1. Subcutaneous Symphysiotomy, By P. ZWEIFEL.
2. The Influence of the Uterine Nerves Upon Atony of the Nonpuerperal Uterus, By L. FELLNER.
3. Polemic Against Deep Cervical Incisions and Vaginal Cæsarian Section, By M. BOSSI.

1. Subcutaneous Symphysiotomy.—Zweifel suggests as a still further step in advance, the carrying out of symphysiotomy subcutaneously. By this means the dangers of hæmorrhage from the pudic artery and the formation of an hæmatoma as sometimes seen after pubiotomy, are obviated. He first produces a furrow on the posterior wall of the symphysis with a covered knife to provide a path for the saw and to prevent it from slipping. The rest of the operation is carried out as follows: A minute incision is made into the linea alba to push the bladder out of harm's way, and a catheter is inserted into the urethra. The needle is carried through from below upward under the guidance of the finger and the Gigli saw inserted into the eye of the needle. Zweifel reports three exceedingly successful cases delivered by this operation.

3. Vaginal Cæsarean Section.—Bossi defends himself and his method of rapid dilatation, and condemns Dührssen's deep cervical incisions and vaginal Cæsar-

ean section. He reports 107 cases delivered by his method, with a mortality of five mothers (two of whom died of eclampsia) and of twenty-five children of whom sixteen were dead before operative intervention was undertaken. He concludes: "The forcible delivery by vaginal Cæsarean section and the deep cervical incisions must be excluded from obstetric practice for the benefit of numerous mothers and for the honor of modern surgery which aims at the preservation of organs and their functions rather than at their destruction."

RIFORMA MEDICA

June 30, 1906.

1. Some Remote and Immediate Sequelæ of Typhoid Infection, By V. PATELLA.
2. The Histochemical Demonstration of Mercury, By C. LOMBARDO.
3. The Structure of the Red Blood Corpuscles, By A. GHELFI.
4. Thickening of the Peripheral Veins, By FRANCESCO PANCRAZIO.

1. Sequelæ of Typhoid.—Patella's patient, a youth of twenty-three, recovered from an attack of typhoid fever, and almost immediately began to complain of paræsthesiæ in the limbs (formication, etc.), weakness of movement, lancinating pains in the limbs. Examined three months after the first apyrexia he was found to have somewhat atrophic muscles on the upper limbs. He could not flex the first phalanges, nor extend the last two phalanges. The opposition movements of the thumbs were also absent. The first phalanges of his toes were in hyperextension; the other phalanges in plantar flexion. Atrophy of the muscles of the feet and equinovarus on both sides were also noted. The less distal muscles of each limb were less markedly affected. The patient therefore presented the true type of hand that goes with Aran-Duchenne's paralysis. The diagnosis was posttyphoid polyneuritis. In addition, the patient presented another sequela of typhoid fever, not so well recognized because it comes on very insidiously, and is not easy to make out; namely, posttyphoid endoarteritis. Rattone was the first to describe this condition, and Patella insists that it can be recognized early. The endoarteritis gives rise to the shedding of numerous endothelial cells into the blood current, thus increasing the number of mononuclear nongranular cells in the blood, which grow more numerous towards the third week of typhoid fever. When the endoarteritis reaches its height, the number of endothelia shed diminishes, and the lymphocytes predominate over the mononuclear leucocytes. The mononuclears grow smaller and smaller, and lymphocytosis which then sets in lasts for three weeks or more after the temperature falls to normal. Many mononuclears at this stage present large nuclei surrounded by mere vestiges of cytoplasm. Sections of arteries obtained from patients at this time show marked fatty degeneration of the intima, including a considerable portion of the elastica. A restitution to normal after such grave changes can scarcely be conceived, and thus typhoid fever becomes one of the important causes of endoarteritis in the future study of the latter disease. It is well known that the kidneys may be affected transiently by the toxines of typhoid fever. More serious sequelæ, however, are the interstitial nephritides which may occur after typhoid fever, and which, according to the studies on the arteries just outlined, depend upon arterial invasion. Injections of toxines of typhoid fever in animals, however, have shown to the author's satisfaction that a renal sclerosis involving the entire organ or patches of it may occur independently of the endoarterial changes just mentioned.

2. Histochemical Detection of Mercury.—Lombardo finds that the method of detecting traces of mercury in the tissues of animals poisoned with this metal, which was recommended by Conti and Zuccola, is not trustworthy. The method depends upon the formation of mercuric sulphide in the tissues, and Lombardo claims that the formation of a precipitate such as Conti and Zuccola found, could be secured by other accidental chemical substances besides mercury. When mercury is introduced in the form of the mercuric chloride by intramuscular injections, it probably is absorbed into the circulation in the form of an organic compound which is not amenable to dissociation by the histological method of Conti and Zuccola. Their method does, however, demonstrate that a part of the mercury remains at or near the site of injection for a considerable time. The solution recommended by Conti and Zuccola consisted of a saturated solution of hydrogen sulphide to which five sixths per cent. of nitric acid had been added. The tissues are treated with this solution for from twelve to twenty-four hours at ordinary temperature. The deposit of mercuric sulphide is then looked for under the microscope.

ROUSSKY VRATCH

June 3, 1906.

1. Remarks on Gunshot Wounds with Bullets of Small Calibre in the Russo-Japanese War (1904-1905) (*Communication to the Fifteenth International Medical Congress, Lisbon, 1906*), By A. D. PAVLOVSKI.
2. The Spirochæta Pallida in the Lungs of a Patient with "Pneumonia Alba," By A. N. DOMERNIKOVA.
3. Leucocytosis. Its Therapeutical Effect in Acute Infectious Diseases. The Limitations of Its Diagnostic Value. By M. G. TSHEGOLEFF.
4. A Case of Cyclopia in Man. The Origin of this Deformity (*Concluded*), By N. A. BATOUYEFF.

1. Gunshot Wounds in the Russo-Japanese War.—Pavlovski was one of the chief surgeons with General Kuropatkine's army, in the hospitals at Liao-Yang and in the hospitals of Count Keller's army. His experience covers three thousand cases of gunshot wounds, nearly all of which were fresh cases. The small calibre rifles used by the Japanese were very nearly the same in most respects as those used by the Russians. There was also but little difference in the effects of the projectiles from either side. The principal features of modern gunshot wounds with small calibre protected bullets were that these wounds were penetrating, narrow, straight, passing readily through the body. In most cases these wounds were soft and healed without suppuration under a clot. This was due to the penetrating character of the bullets, which passed into the flesh without carrying fragments of clothing. The small number of germs thus introduced, their comparatively low virulence, the rapid closure of the canal by a clot, and the antiseptic conservative treatment, including the application of the first aid packet, were the chief factors in the aseptic healing of the majority of wounds caused by modern rifle bullets. The individual emergency packet of the Russian army is excellent. Wounds of the skull, the spine, the abdomen (especially the spleen, the liver), were severe and usually fatal. The modern, so called "humane" bullet gives more deaths and produces a larger number of wounded than in previous wars. Now bullets and shrapnels kill more soldiers, while formerly germs killed more men afterwards. The approximate ratio of killed to wounded was formerly 1:4, while now it is but 1:3, but to make up for this, more wounded men now recover than formerly. The number of operations performed on the battlefield and in the hospitals has been materially reduced by the new conditions. In over 3,000 wounded only three amputations, and not a single resection were needed. In ninety per cent. of all cases the business of the military surgeon to-day reduces itself to the skilful application of dressings. The plaster of Paris bandage has received a wide range of employment, owing to the frequency of fragmented

and compound fractures. At the dressing stations near the line of fire starch bandages were found most useful, for they are more rapidly applied, less heavy, and cheaper than plaster of Paris dressings. The standard local anæsthetic in hospitals and at the dressing stations was a 0.1 or a 0.5 per cent. solution of cocaine, which was used for all operations, save laparotomies and amputations. When an inflammatory reaction was threatened, the entrance and the exit of the bullet were often successfully painted with tincture of iodine.

2. **Spirochæta of Syphilis in the Lungs of Syphilitic Pneumonia.**—Domernikova found Schaudinn and Hoffmann's *Spirochæta pallida* in the tissue of a lung from an infant, aged two months, who had died of syphilitic pneumonia (pneumonia alba). The body of this child showed many evidences of hereditary syphilis. Very few spirochæta were found free in the bronchi or the alveoli, but many were seen in the alveolar walls. Levaditi's staining method was used, the lung having previously been hardened in alcohol and formalin.

GLASGOW MEDICAL JOURNAL.

June, 1906.

1. Sterility in the Female; Its Causes and Treatment, By J. K. Kelly.
2. Multiple Telangeiectasia of the Skin and Mucous Membranes of the Mouth and Nose, By A. B. Kelly.

1. **Sterility in the Female; Its Causes and Treatment.**—Kelly regards the essential conditions of fertility in a woman as (1) the secretion of a healthy ovum from the ovary, (2) the meeting of this ovum with a healthy spermatozoon, in the upper part of the genital canal, and (3) a healthy condition of the ciliated lining of the genital canal. Concerning the diseases of the ovum and spermatozoon we know so little that in investigating the causes of sterility in women we are forced to limit ourselves to the condition of the genital organs. With regard to pregnancy, women may be divided into the barren, the sterile, and those who never carry an ovum to maturity. Common conditions which favor sterility from an anatomical standpoint are atresia of the vulva, tumors of Bartholin's glands, vaginismus, thickened and sensitive hymen, constriction of the vagina, and chemical change in its secretion; conditions of the uterus are endometritis, myomata, stenosis, and anteflexion of the cervix, laceration of the cervix, uterine displacements, and imperfect development of the uterus; in the Falloppian tube inflammation of various forms prevents the passage of ova; in the ovary anything which prevents rupture and discharge of Graafian follicles into the peritoneal cavity will cause sterility.

2. **Multiple Telangeiectasia of the Skin and Mucous Membrane.**—Kelly reports two such cases. Bleeding, in such cases, takes place from the tongue and lips, also from the nose, occurring spontaneously. The hæmorrhage is worse in winter than in summer, occurring almost daily. The hæmorrhage is followed by an itching eruption on the flexor aspect of the forearm, the dorsum of the foot, and the back. These cases are suggestive of hæmophilia and may be identical with that condition. Only ten cases of this condition have been reported. None of them have shown any constitutional disease or peculiarity in habits or mode of life. The organs have appeared to be healthy. Examination of the blood gave no additional light. Treatment has been limited to local measures for controlling the bleeding and the use of such drugs as would increase the coagulability of the blood.

THE JOURNAL OF NERVOUS AND MENTAL DISEASE

July, 1906.

1. The Position of the Atypical Child, By Waldemar Heinrich Groszmann
2. The Neuritic Type of Progressive Muscular Atrophy; A Case with Marked Heredity, By Archibald Church.
3. Syringomyelia with Involvement of Cranial Nerves. Probably a Syringiobulba, By Archibald Church.
4. Hereditary Cerebellar Ataxia and General Paresis; A Supplementary Report and a Correction, By Hugh T. Patrik.

1. **The Position of the Atypical Child.**—Groszmann says that with the advance of psychology and educational methods, scientists, especially educators, have begun to realize that a very appreciable fraction of children exist in our school to-day whose educational needs are being overlooked under the usual public or private school régime. Under atypical children the author understands: Neurotic and neurasthenic children, with over stimulation and precocity; imitability; tic; fears and obsessions; vasomotor, trophic, and sensory disturbances; defective inhibition. Or, children of retarded development, the physical causes would be chronic catarrh, chronic difficulties of nutrition, serious visual, and aural difficulties, etc.; impaired conceptual ability due to the retarded brain development. The pseudoatypical children are children whose progress in school was hindered by: Change of school; slower rate development; temporary illness; physical difficulties, such as lameness and deformity, slightly impaired hearing and vision, adenoid vegetations, etc.; furthermore, children of unusually rapid development, with genuine pathological precocity; children who are difficult of management; naughty, troublesome, spoiled children; and, finally, neglected children. From a detailed statement of consideration it becomes evident, says Groszmann, that it is impossible to obtain satisfactory results with atypical children in the public or private schools in conjunction with the home environment. Such children must be removed into an environment where perfect harmony and interaction exists between all influences, and this can only be offered by institutions especially adapted to the requirements of such work. Such an institution must be, as it were, a psychological and physiological laboratory for a scientific study of each case. The author then gives his plan for such an institution, and concludes in stating that a wider application of the proper education of the atypical child has yet to be developed. State or municipal institutions are necessary to obtain this end. Private endeavors can only indicate the path, and, as pioneers, work the field to determine whether or not its further exploitation warrants the expenditure of State funds.

2. **The Neuritic Type of Progressive Muscular Atrophy. A Case with Marked Heredity.**—Church reports a case of the peroneal type of progressive muscular atrophy of the familial type, extending through six, and probably nine generations. Owing to the fact that the disease has invariably descended by the female side with a change of family name in each generation, tracing is difficult. It is the belief in the family that the disease has tended to become more severe and more extensive with succeeding generations. The author gives a full history of the case.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN ORTHOPAEDIC SURGERY.

Meeting of March 16, 1906.

Dr Reginald H. Sayre, Chairman.

The Final Result in a Case of Congenital Dislocation of the Hip Treated by the Lorenz Method was shown in a girl, nine years old, presented by Dr. Wisner R. Townsend.

Pain and Shortening of the Arm, with Multiple Exostoses.—Dr. Dexter D. Ashley reported the case of a woman, fifty-five years old, who came under his observation on March 3, 1906, complaining of pain,

especially in the right arm, of about six months' duration. A radiographic picture of that extremity showed a shortening of half an inch of the distal extremity of the ulna and an entire lack of the styloid process. The bones of both the upper and lower extremities were the seat of a number of osteophytes. The chief point of interest in the case, Dr. Ashley said, was the pain in the right arm, which was especially severe at night. There were no evidences of specific infection.

Hydrarthrosis of Both Knee Joints.—Dr. HERMAN C. FRAUENTHAL reported this case and showed the patient.

Acute Torticollis.—The CHAIRMAN reported the result in the case of a little girl whom he had shown at the December, 1905, meeting. She was then suffering from a marked torticollis which had come on quite suddenly some months before, without any apparent cause. The head was twisted far to the right, and the condition had become so painful that she was obliged to hold her head with her hands. The case was regarded as one of acute inflammation of the cervical vertebræ,and a plaster of Paris jacket and helmet were applied, with the head in a slightly distorted position. At the end of a month the neck of the jacket was sawed through and the head placed in as improved a position as could be secured without pain, wooden wedges inserted to hold the cap secure by a plaster of Paris collar. This was repeated several times, one plaster of Paris jacket and helmet replacing another, until an examination showed that she was free from pain and her torticollis had entirely disappeared.

The chairman did not know what the nature of the inflammation of the bone in this case was. It was apparently of an acute character, and had involved the two upper cervical segments of the spine. These infections were usually secondary to inflammation of the tonsils, but there was no previous history of that kind in this instance. The sudden onset of the symptoms militated against the diagnosis of a tuberculous infection. Treatment by immobilization of the part with plaster of Paris he considered superior to any other method. With inflammation of the second cervical vertebræ the patient frequently experienced a sense of impending death upon lying down.

Multiple Deformity.—Dr. HENRY W. FRAUENTHAL showed the dead body of an eight months' child with double club foot and partial ankylosis of the right elbow and the left hip.

The Ocular Factors in the Ætiology of Spinal Curvatures.—Dr. H. AUGUSTUS WILSON, of Philadelphia, read a paper on this subject.

Dr. THOMAS R. POOLEY said that, personally, he had given very little consideration to this subject, and it had been much the fashion among New York ophthalmologists to rather ignore the relation of eye strain to many diseases as expressed by the author referred to in the paper. He would, therefore, largely confine his remarks to his own individual views in regard to the subject, and, first of all, he called attention to the fact that lateral curvature of the spine, to a certain extent or degree, existed in nearly all people, especially in all artisans—the curvature in right-handed persons being to the right and in left-handed persons to the left. This statement, Dr. Pooley said, he made upon the authority of one of the most distinguished surgeons that America had produced, namely, Dr. Gross. In considering the question under discussion, therefore, the fact should be constantly borne in mind that there were hardly any spines which did not deviate, to a greater or lesser extent, either to the right or to the left of the vertical line. Dr. Gross, as well as orthopædic surgeons, had made distinct reference to cases of lateral curvature resulting from malposition, especially in school children. These minor degrees of spinal curvature, due to malposition, vocation, etc., should not be confounded with abnormal deviations of more serious import, which were usually associated with rickets or osteomalacia and were often distinctly due to a tuberculous process.

Dr. Pooley said that several years ago he saw a child with a convergent concomitant strabismus of both eyes, with the usual error of refraction. The internal recti of both eyes were cut, with restoration of the eyes almost to parallelism and binocular vision. At that time there was no evidence of any spinal affection. A year or two after the operation, however, the child was brought to him with torticollis, which he regarded as a compensating torticollis due to spinal disease. He sent the patient to Dr. Sayre, who agreed in the diagnosis. In that case there was no possible relationship between the eye lesions, which had been remedied a year or two before, and the development of the spinal disease. In the case shown by Dr. Sayre at the present meeting, the torticollis had been apparently cured by the application of a plaster of Paris jacket and helmet, but the child still had convergent strabismus and a malposition of the head in spite of the glasses she wore.

Dr. Pooley did not wish to be regarded as an extremist in denying that malposition of the head from ocular defects or other causes might be productive of lateral curvature. He was well aware, in common with other ophthalmologists, that tilting of the head often resulted from astigmatism. Dr. Gould had rightly emphasized the importance of the fact that the eyes of such patients should not be examined while the head was held in a faulty position (which was done by the patients in order to aid their vision); it should be held erect. If a patient had any error of refraction it should be corrected, whether associated with lateral curvature of the spine or not.

Dr. Pooley called attention to the statement made by the late Professor Helmholtz, of Berlin, that there was scarcely such a thing in nature as an emmetropic eye. With that fact staring us in the face, it was not surprising that errors of refraction should be met with in a great many patients with curvature of the spine, and that astigmatism, especially in the minor degrees, should be one of the commonest conditions.

Dr. WILLIAM F. MITTENDORF said that, as he understood it, the type of lateral curvature that was under discussion was not the grave form that was associated with tuberculous disease of the bone, but was more particularly the form due to local causes and most prone to occur in the young, when the spinal column was still in the developmental stage. His attention had been called years ago to the possible relationship between ocular defects and spinal curvature by a considerable number of his young women patients, who, in addition to having errors of refraction, were under the care of orthopædic surgeons for deviations of the spine. In many of these cases the error of refraction was comparatively slight, but those were the very cases that often gave rise to the most difficulty in growing girls.

While the eye was a defective organ, Nature had provided it with a muscular apparatus that would in many instances offset minor defects. Persons with a certain degree of hypermetropia or astigmatism were often able to go through life without the slightest difficulty, but when such a person became run down in health even a slight degree of astigmatism might become a serious defect. He had not been able to confirm Dr. Gould's assertion that in a left-handed person the left eye was the guiding eye, and *vice versa*. On the contrary, he had found that in left-handed persons, as in right-handed ones, the right eye was usually the guiding eye.

Dr. FRANCIS VALK said that last September, in Buffalo, he read a paper on a subject somewhat similar to the present one, and in the discussion that followed Dr. Gould spoke of the head turning in the direction of the dominant eye. Dr. Valk maintained that the

majority of persons turned their eyes to the right, while Dr. Gould said that the heads were turned to the right, not the eyes. Dr. Valk could not accept the theory that the right eye was the dominant eye, and that if it happened to have an astigmatism of 75° and the other 90°, such a degree of refraction would cause the head to turn either in one direction or the other. On the other hand, we might have a condition of oblique astigmatism, with the axis of each glass at 75°. With that condition patients often showed the tendency to tip the head to one side or the other, so as to bring the emmetropic meridian of the eye nearly vertical. There was another condition, known as hyperphoria, in which the visual axis of one eye inclined to a point above that of the other. This was due to an actual anatomical effect, and in cases where it existed it could readily result in turning the head to one side or the other.

In connection with the remarks made by Dr. Pooley regarding the supposed rarity of the emmetropic eye, Dr. Valk said the fact should not be lost sight of that the person with perfect vision had no reason to consult the ophthalmologist, and the condition of emmetropia might not be so rare as was commonly supposed.

Dr. T. Halsted Myers said he had made a rather careful review of the literature bearing on this subject, and he thought there were enough cases on record to warrant the statement that certain conditions of muscular inequality of the eye produced permanent deviation of the head, which, in turn, might produce lateral spinal curvature. The explanation of rotation, inclination, and tipping of the head given by Stevens seemed very clear.

Dr. P. William Nathan said that in a discussion of this kind it should be clearly understood what was meant by lateral curvature. If one meant simply a slight lateral deviation, without torsion of the vertebræ, such a condition was very common and might result from prolonged faulty position of the body or possibly malposition of the head from ocular or other defects. Such a condition, however, should be clearly distinguished from that which orthopædic surgeons called scoliosis, which went on to progressive deformity of the spine, not only in the lateral, but in the posterior direction, and it seemed difficult to conceive how malposition of the head or body could induce such a condition without other factors in the spine itself being present. If malposition of the head could produce lateral curvature of the spine, with torsion, the speaker saw no reason why a mechanical defect in the pelvic girdle could not produce a similar condition, but such had not been his experience. Together with Dr. Taylor, he had examined many cases of disease of the pelvic girdle, with shortening of one extremity, and while a considerable number of those persons had a lateral deviation of the spine, they had failed to find a single case in which torsion had resulted. All of them had a deviation when they stood on both feet, but none showed decided signs of scoliosis as that disease was generally observed in young adults, and the deviation disappeared immediately when the shortening of the leg was compensated.

Dr. Nathan also called attention to the fact that scoliosis was most apt to come on at certain distinct periods of life. It was seen in young children with rickets and at puberty. The scoliosis which came at puberty was always accompanied by other signs of a general character, such as anæmia, chlorosis, and abnormities of metabolism. Astigmatic defects of the eye were congenital conditions, and if they were the cause of malpositions of the head, and the latter, in turn, were the cause of lateral spinal curvature, we should expect to see a great many more such spinal deviations in young children than was actually the case. As a matter of fact, they were not common before the age of puberty except when congenital or due to rhachitis. A rather careful examination of the cases that had come under his observation showed that most of them occurred in children that presented decided abnormities in their metabolism and those who were of a neurotic temperament. He had therefore been led more and more to the conclusion that a mere mechanical change in the position of the body was not sufficient to produce this extreme deformity which so often developed rapidly in children at or about the age of puberty. He did not mean to imply, however, that a visual defect in a child that was predisposed by other causes to spinal curvature might not increase the tendency in that direction, but he did not believe that as an ætiological factor it possessed the importance that Dr. Gould would have us believe. The speaker said that in all his cases of lateral curvature, the patient's eyes had been examined, and any defects that were found had been corrected, but such corrections did not seem to have hastened the recovery.

Dr. George R. Elliott did not think that any orthopædic surgeon would deny that malposition of the head would lead to compensatory deviation of the spine; that fact was illustrated in wry neck. A lateral deviation of the head from an ocular defect did not differ materially from a lateral deviation from torticollis, and both might result in a certain amount of compensatory lateral curvature of the spine, reaching a high degree in some cases. It was well known that various attitudes of the body might produce the same result. He did not understand that the reader of the paper had asserted that such malpositions of the head produced rotary scoliosis, or, in other words, true disease of the spine. The former class of cases could be cured by proper exercises and gymnastics, while cases of true rotary scoliosis progressed in spite of treatment. He believed that true rotary scoliosis was a disease *sui generis,* and could not conceive of its taking origin from any ocular defect.

Dr. Henry W. Frauenthal said there were two types of lateral curvature which were fairly distinct. One was the result of a paralytic or rhachitic condition, which advanced very rapidly and produced marked deformity. The other type started between the fifth and tenth years, and was usually first noticed in girls when they changed their style of dress. It was this type of spinal deviation that could usually be traced to faulty position of the head or body, due to various causes, such as eye strain, etc., and in time it might produce just the same degree of deformity of the spine as in the cases that were of paralytic or rhachitic origin, and its correction might prove just as difficult.

The Chairman said that, in discussing the question of lateral curvature, the vital point was the prophylaxis. In some persons, no doubt, ocular defects or postural habits or various other factors, such as occupation, etc., might produce a slight functional deviation of the spine, transitory in character, while in other persons of less resistance the same cause might give rise to an intractable scoliosis. If we took, for example, a growing puppy and bent his spine and tied him firmly in that position, in the course of a few months, as had been shown by French experimenters, that puppy would have a permanent scoliosis. The same thing occurred in the human being. If the growing bones were kept in an abnormal position, a permanent abnormity would develop in the course of time. If, in addition to the external, or mechanical, factor, we had to deal with a patient in whom there was some weakness of the muscular support of the spine as the result of a central nervous lesion—which was possibly identical with that causing the irregularities of the muscular apparatus of the eye—or if we had a child that was rhachitic or whose general resistance was otherwise impaired, then these external factors would be apt to produce their results much more rapidly and to a much greater extent. In the treatment of lateral curvature, any bodily defect, whether in the eye or elsewhere, which tended

to induce the patient to hold the head or body in an abnormal position should be corrected. This applied not only to ocular defects, but also to adenoids and other obstructions to respiration, which in turn might give rise to distortion of the thorax.

Dr. WILSON said that, while the origin of many cases of so-called idiopathic scoliosis was still unknown, the cases so classified were being studied more and more carefully, and the probabilities were that more light would soon be thrown upon the ætiology of rotary lateral curvature. No one would be so rash as to assert that the twenty-seven or thirty per cent. of cases of lateral curvature found in school children, and attributed to posture, etc., would all eventually develop into rotary lateral curvature, but, on the other hand, it was impossible to say how many of them might develop into that condition, and the paper of the evening had been presented for the purpose of again calling the attention of the profession to the importance of correcting malpositions of the head and body, especially in children, so that the graver forms of spinal curvature might thus be prevented. The fact had been established that tilting of either the head or the pelvis produced functional scoliosis, and it was also well known that all the cases of rotary lateral curvature, with bony changes, had at one time passed through the stage when the condition was regarded as functional.

A New Celluloid Corset was shown by Dr. HERMAN C. FRAUENTHAL.

Book Notices.

A Compound of Operative Gynæcology. By WILLIAM SEAMAN BAINBRIDGE, M. D., etc., and HAROLD D. MEEKER, M. D., etc. New York: The Grafton Press. Pp. 66.

Dr. Bainbridge is adjunct professor of operative gynæcology on the cadaver in the New York Postgraduate Medical School and Hospital, and it is from his lectures that he and Dr. Meeker, instructor in the same branch, have compiled the brief descriptions of operative procedures of which this little book mainly consists. The descriptions are good, and the appended section entitled Miscellaneous Points abounds in valuable practical hints. The language employed in the book is generally well chosen, but it is marred on the first page by the expression "labium major."

Ikonographia Dermatologica. Atlas seltener, neuer und diagnostisch unklarer Hautkrankheiten. Atlas des Maladies rares de la peau. An Atlas of New and Rare Skin Diseases. Fascicle I. Editæ a Albert Neisser, Breslau. Eduard Jacobi, Freiburg i Br. Berlin: Urban and Schwarzenberg, 1906. Pp. 39. Price, $2.50.

Those who are familiar with the superb illustrations in Jacobi's "Dermochromes" need no introduction to the volume under notice, at least from the standpoint of illustration. As will be remembered the Dermochromes deal in systematic manner with the commoner affections of the skin, while the present work is in a measure supplementary taking up for consideration the rarer lesions and those that are less easily diagnosticated. The fasciculi before us contain contributions from various authors, including De Amicis, Baum, Brooke, Finger, Hallopeau, Jadassohn, Pospelow, and Neisser, covering cases of Norwegian scabies, acne urticata, varus nodulosus, blastomycosis, lymphatic nævus, congenital pachyonychia, erythromelalgia, and a curious lichenoid affection. The descriptive text which accompanies each illustration is in the mother tongue of the contributor. Of these, one is in English, two in French, and five in German. All who are interested in cutaneous affections will find the work of value; in fact, almost indispensable. It is to be continued in half yearly portions containing eight plates, accompanied with appropriate text.

Miscellany.

Postanæsthetic Acetonuria.—Beesly's object in this paper is to show that certain symptoms after operation sometimes followed by death, which are either unaccounted for or attributed to wrong causes, are really due to an acid intoxication of sudden occurrence and variable intensity, originated by the anæsthetic and indicated by the degree of acetone excretion in the urine. Although other circumstances may sometimes have contributed to the fatal result, the intoxication is by itself capable of producing death. He sums up his conclusions as follows: 1. That two separate conditions should be recognized—acute and chronic acetonuria. 2. That ether and chloroform invariably induce a temporary acute acetonuria which may be very detrimental even to an apparently healthy organism. 3. That this acute anæsthetic acetonuria is accompanied by symptoms of acid intoxication, sometimes ending in death, when the kidneys are unable to cope with the increased formation of acetone by a corresponding capability of excretion. 4. That although ether may produce a greater acetonuria, this is less harmful than that produced by chloroform, because ether is less injurious to the cells of the liver and kidneys, and thus does not hinder their power of elimination. 5. That the more plentifully and rapidly excretion is carried on the less serious is the poisoning. 6. That the effects of the poisoning are mitigated by the administration of alkalies, which may also be given with advantage before operation if poisoning be anticipated. 7. That the usual risks of anæsthesia are not increased by the pre-existent chronic acetonuria. 8. That anæsthesia is dangerous with preexistent acute acetonuria, especially if the anæsthetic is chloroform. 9. That a guarded prognosis must always be given when acute acetonuria is present with symptoms of poisoning. 10. That death following the administration of chloroform with symptoms of poisoning may be due to the idiosyncrasy of the patient. Treatment: This must be directed to the removal of the acid intoxication by stimulating the excretions. In the milder cases it is sufficient to administer sodium bicarbonate. Should serious acid intoxication be suspected every means to counteract it should be taken at once; if there is any delay no treatment will be of value. The patient's skin must be made to act freely by heat, either moist or dry. Sodium bicarbonate must be introduced in various ways into the stomach after thorough lavage, by rectal injections, or subcutaneously in combination with saline infusions. At the first signs of collapse free stimulation must be begun.—*British Medical Journal.*

Cœcostomy in Amœbic Dysentery.—Curl thinks that in intermediate cases in which there is a reasonable amount of strength, but in which the dysentery is not being controlled by treatment, cœcostomy is indicated with irrigation of the colon with quinine solution. This operation is preferable to appendicostomy, as it is followed by less sloughing and the fistula may be more easily closed. The appendix should be removed when the cæcum is fastened to the abdominal wound. Improvement usually follows the irrigation, but convalescence is slow and it may be difficult to close the fistula. The after treatment is tedious, and such patients are objectionable in a hospital ward. In certain cases, however, it is a life saving procedure.—*Annals of Surgery.*

Ski Sledges for the Wounded.—Two pairs of skis, that is, four skis, says Captain Reichborn-Kjennerud (*Norsk tidsskrift for militar medecin*), form a couch for a wounded man in the following manner: The tips of the skis are tied on to a stick which is laid over all the four tips of the skis, and a similar stick is tied on to the four skis at the point where the feet are to be.

In the year 1902 in the wild mountains of Norway, a man weighing 99 kg., fell far from any human being, and suffered a dislocation. He was transported on such a couch. The couch which is made for a wounded man on such a ski sledge is hard. By fastening an iron band across the skis, the army stretcher may be comfortably placed on the sledge. A practical ski sledge, made out of one pair of skis, however, is yielding and forms a soft and agreeable couch, as shown by the author's experiments.—Through the *Journal of the Association of Military Surgeons*, July, 1906.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending July 20, 1096.

Places.	Date.	Cases.	Deaths.
Smallpox—United States.			
Illinois—Galesburg	July 7-14	9	
Louisiana—New Orleans	July 7-14	10	1
Massachusetts—New Bedford	July 7-14	2	
Montana—General	June 1-30	7	†1
New York—New York	July 7-14	2	
Ohio—Cincinnati	July 6-13	1	
South Carolina—Camden	July 7-14	1	
Tennessee—Memphis	July 7-14	1	
Texas—Hopkins County	To July 12	50	
W. Virginia—Marshall County	Apr. 1-July 14	24	
Wisconsin—Appleton	July 7-14	3	
Wisconsin—La Crosse	July 7-14	1	
Smallpox—Insular.			
Philippine Islands—Manila	May 26-June 9	2	
Smallpox—Foreign.			
Chile—Antofagasta	May 21-June 4	8	4
Great Britain—Hull	June 23-30	1	
Greece—Athens	June 18-25		1
India—Bombay	June 12-19		3
India—Calcutta	June 2-9		33
India—Karachi	June 10-17	7	1
Madras—Madras	June 9-15		5
Madras—Rangoon	June 2-9		8
Siberia—Vladivostok	May 28-June 4	3	
Yellow Fever—Foreign.			
Costa Rica—Limon (33 miles from)		3	
Mexico—Merida	June 24-July 7	15	12
Plague—Foreign.			
Australia—Brisbane	May 16		1
Australia—Fremantle	May 31	1	
Australia—Perth	May 15		1
Australia—Rockhampton	May 13	1	
Australia—Sydney	May 10		1
India—Bombay	June 12-19		67
India—Calcutta	June 2-9		43
India—Karachi	June 10-17	51	49
India—Rangoon	June 2-9		74
Chile—Antofagasta	May 20-June 4	10	1
Egypt—Alexandria	June 23	1	
Egypt—Minich*	June 27	1	
Peru—Lima	June 9-16	1	1
Peru—Paita	June 9-16	1	1
Peru—Trujillo	June 9-16		1
Japan—Formosa*	May 1-31		788
Cholera—Insular.			
Philippine Islands—Manila	May 26-June 9	2	2
Philippine Islands—Provinces	May 26-June 9	6	2
Cholera—Foreign.			
India—Bombay	June 12-19		20
India—Calcutta	June 2-9		38
India—Madras	June 9-15		3

*Received out of date. †Imported.

Public Health and Marine Hospital Service:

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine Hospital Service for the seven days ending July 18, 1006:

BAILHACHE, P. H., Surgeon. Directed to proceed to Buffalo, N. Y., for special temporary duty, upon completion of which to rejoin station at Stapleton, N. Y.

BLUE, RUPERT, Passed Assistant Surgeon. Temporarily relieved from Sanitary Inspection Board in Washington, and directed to proceed to Tuckerton and Atlantic City, N. J., for the purpose of making physical examinations of keepers and surfmen of the Life Saving Service.

BOGGESS, J. S., Assistant Surgeon. Directed to proceed to Freeport and Sayville, N. Y., for the purpose of making physical examinations of keepers and surfmen of the Life Saving Service.

COBB, J. O., Surgeon. Leave of absence granted Surgeon Cobb for ten days from June 25, amended to read nine days only.

EARLE, B. H., Passed Assistant Surgeon. Temporarily relieved from Sanitary Inspection Board in Washington, and directed to proceed to Ocean City, Md., Chincoteague, Wachapreague, and Cape Charles City, Va.

GIBSON, L. P., Acting Assistant Surgeon. Granted leave of absence for five days.

GOLDBERGER, JOSEPH, Passed Assistant Surgeon. Directed to report to Passed Assistant Surgeon M. J. Rosenau, chairman of the board making investigations as to the prevalence and origin of typhoid fever in the District of Columbia, for temporary duty.

KALLOCH, P. C., Surgeon. Directed to proceed to Sayville, N. Y., for the purpose of making physical examinations of keepers and surfmen in the Life Saving Service.

LLOYD, B. J., Passed Assistant Surgeon. Granted leave of absence for twelve days, from May 25th.

MEAD, F. W., Surgeon. Temporarily relieved from Sanitary Inspection Board in Washington, and directed to proceed to Point Pleasant, N. J., for the purpose of making physical examinations of keepers and surfmen in the Life Saving Service.

MCCOY, J. W., Passed Assistant Surgeon. Directed to proceed from San Francisco, Cal., to Fort Stanton, N. M., reporting to the Medical Officer in Command for duty and assignment to quarters.

ROBERTS, N., Assistant Surgeon. Relieved from duty at Fort Stanton, N. M., and directed to proceed to Washington, D. C., for temporary duty in the Hygienic Laboratory.

SALMON, T. W., Assistant Surgeon. Granted leave of absence for fourteen days, from July 14, on account of sickness.

STIMPSON, W. G., Surgeon. Granted leave of absence for fifteen days, from July 28.

Navy Intelligence:

Official List of Changes in the Medical Corps, United States Navy, for the week ending July 21, 1906:

BACKUS, J. W., Passed Assistant Surgeon. Commissioned passed assistant surgeon, with rank of lieutenant, from May 4, 1905.

GEIGER, A. J., Commissioned passed assistant surgeon, with rank of lieutenant, from May 6, 1906.

MOORE, J. M., Surgeon. Commissioned surgeon, with rank of lieutenant commander, from January 1, 1905.

RIGGS, D. E., Passed Assistant Surgeon. Commissioned surgeon, with rank of lieutenant, from January 19, 1906.

STEELE, J. M., Medical Inspector. Detached from the Naval Academy and ordered home to await orders.

URIE, J. F., Surgeon. Detached from the *Pennsylvania*, ordered home, and granted sick leave for three months.

WRIGHT, B. L., Surgeon. Commissioned surgeon, with rank of lieutenant commander, from May 10, 1906.

Army Intelligence:

Official list of Changes of Stations and Duties of Medical Officers serving in the Medical Department of the United States Army, for the week ending July 21, 1906:

BIRMINGHAM, H. P., Major and Surgeon. Left Fort McPherson, Ga., *en route* to manœuver camp, Chickamauga Park, Ga., for duty as Chief Surgeon.

BOYER, P. L., First Lieutenant and Assistant Surgeon. Left Fort Sam Houston, Texas, with 1st Cavalry, *en route* to camp of instruction at Austin, Texas.

BROWNLEE, CHARLES Y., First Lieutenant and Assistant Surgeon. Left Alcatraz Island, Cal., with the 22nd Infantry, *en route* to camp at American Lake, Washington, for duty.

CARSWELL, R. L., First Lieutenant and Assistant Surgeon. Left Depot of Recruits and Casuals, Angel Island, Cal., *en route* with 22nd Infantry to camp of instruction at American Lake, Wash., for duty.

CLARKE, JOSEPH T., Major and Surgeon. Left Fort Ethan Allen, Vermont, with the 15th Cavalry, *en route* to Mount Gretna, Pa., for duty.

CHURCH, JAMES R., Captain and Assistant Surgeon. Left Fort Robinson, Neb., with Tenth Cavalry, *en route* to Camp of Instruction at Islay, near Fort D. A. Russell, Wyo.

DEVEREUX, J. R., First Lieutenant and Assistant Surgeon. Left Fort Logan, Col., on fifteen days' leave of absence.

DUNCAN, L. C., First Lieutenant and Assistant Surgeon. Left Fort Snelling, Minn., with troops *en route* to camp of instruction at Fort Benjamin Harrison, Ind.

EDGER, BENJAMIN J., JR., Captain and Assistant Surgeon. Left Fort Sam Houston, Texas, with Field Artillery, *en route* to camp of instruction, Austin, Texas.

FLAGG, CHARLES E. B., Captain and Assistant Surgeon. Left Vancouver Barracks, Wash., with troops *en route* to camp at American Lake, Wash., for duty.

GRISSINGER, J. W., First Lieutenant and Assistant Surgeon. Reports arrival at Camp Roosevelt, camp of instruction, Mount Gretna, Pa., for duty.

HALLORAN, PAUL S., First Lieutenant and Assistant Surgeon. Left Fort Leavenworth, Kans., with the Second Squadron, 9th Cavalry and Field Artillery, *en route* to Camp of instruction, Fort Riley, Kans.

JOHNSON, R. W., Major and Surgeon. Left Fort Crook, Neb., with 30th Infantry, *en route* to camp of instruction at Fort Riley, Kans.

KELLER, WILLIAM L., First Lieutenant and Assistant Surgeon. Left Fort Douglas, Utah, with troops *en route* to camp of instruction at Fort D. A. Russell, Wyo.

KIRKPATRICK, THOMAS J., Captain and Assistant Surgeon. Left Fort Moultrie, S. C., *en route* to Fort McPherson, Ga., for temporary duty.

LITTLE, WILLIAM L., First Lieutenant and Assistant Surgeon. Left Fort Sam Houston, Texas, with the 1st Battalion, 26th Infantry, *en route* to camp of instruction near Austin, Texas.

MONCRIEF, WILLIAM H., First Lieutenant and Assistant Surgeon. Left Fort McPherson, Ga., with the 17th Infantry, *en route* to Chickamauga Park, Ga., for duty.

PHALEN, JAMES M., First Lieutenant and Assistant Surgeon. Reports arrival at Fort Clark, Texas, for duty with Squadron, 1st Cavalry, *en route* to camp near Austin, Texas.

POWELL, WILLIAM A., First Lieutenant and Assistant Surgeon. Reports arrival at Fort Leavenworth, Kans., to accompany troops marching to camp of instruction at Fort Riley, Kans. Upon completion of this duty to return to his station at Jefferson Barracks, Mo.

PURNELL, HENRY S., First Lieutenant and Assistant Surgeon. Left Fort Mackenzie, Wyo., with troops *en route* to camp of instruction at Fort D. A. Russell, Wyo.

PYLES, WILLIAM L., First Assistant Lieutenant and Surgeon. Granted one month's leave of absence with permission to apply for an extension of one month.

QUINTON, WILLIAM W., Captain and Assistant Surgeon. Left Fort McPherson, Ga., with the 17th Infantry, *en route* to Chickamauga Park, Ga., for duty.

ROBBINS, C. P., Captain and Assistant Surgeon. Left Madison Barracks, N. Y., *en route* to Camp Roosevelt, camp of instruction at Mount Gretna, Pa.

ROBERTS, WILLIAM, First Lieutenant and Assistant Surgeon. Retired from active service July 15, 1906, on account of disability.

SNYDER, H. D., Major and Surgeon. Left Fort Sam Houston, Texas, *en route* to camp of instruction at Austin, Texas.

THOMASON, HENRY D., Captain and Assistant Surgeon. Left Whipple Barracks, Ariz., *en route* to Fort Huachuca, Ariz., for duty with the 5th Cavalry, *en route* to camp near Austin, Texas.

WILSON, COMPTON, First Lieutenant and Assistant Surgeon. Left Fort Sheridan, Ill., *en route* with two battalions, 27th Infantry, to camp of instruction, Fort Benjamin Harrison, Ind.

The following assignments of assistant surgeons, recently appointed, are ordered:

HANSON, LOUIS H., will proceed from Eau Claire, Wis., to Fort Liscum, Alaska, and report to the commanding officer for duty at that post, relieving First Lieutenant Chester J. Stedman, U. S. Army.

JONES, HAROLD W., will proceed from St. Louis, Mo., and report to the commanding general, Department of California for assignment to duty with troops in camp in Sequoia National Park, Cal.

LOVE, ALBERT G., will proceed from Memphis, Tenn., to San Francisco, Cal., and report to the commanding general, Department of California, for assignment to duty with troops in camp in Yosemite National Park, Cal.

PINKSTON, OMAR W., will report to the commandant of the U. S. Military Prison at Fort Leavenworth, Kan., for temporary duty.

REED, HOWARD A., will proceed from Milford, Pa., to San Francisco, Cal., and report to the commanding general, Department of California, for assignment to temporary duty until October 1, 1906, when he will report to the medical superintendent of the Army Transport Service in San Francisco, Cal., for assignment to duty.

SCHMITTER, FERDINAND, will proceed from Schenectady, N. Y., to Fort Egbert, Alaska, and report to the commanding officer of that post for duty, relieving First Lieutenant John R. Bosley, assistant surgeon.

The following-named assistant surgeons, recently appointed, will proceed from the places set opposite their respective names to San Francisco, Cal., and take the transport to sail from San Francisco on or about July 25, 1906, for the Philippine Islands, and upon arrival at Manila will report to the commanding general, Philippine Division, for assignment to duty:

FREEMAN, C. E., La Grange, Mo.

HOPWOOD, L. L., Des Moines, Iowa.

MCINTYRE, H. B., Randolph, Vt.

NICHOLS, HENRY J., Binghamton, N. Y.

REASONER, M. A., Morrisonville, Ill.

Births, Marriages and Deaths.

Married.

CLARK—CHAPMAN.—In Walled Lake, Michigan, on Thursday, July 12th, Dr. R. L. Clark, of Detroit, and Miss Prudence Eliza Chapman.

Deaths.

ALISON.—In Ardmore, Pennsylvania, on Monday, July 16th, Dr. Robert H. Alison, aged fifty-nine years.

BAETHIG.—In Buffalo, N. Y., on Saturday, July 14th, Dr. Henry Baethig, aged fifty-five years.

BUGGE.—In Brooklyn, N. Y., on Tuesday, July 17th, Dr. Charles M. Bugge, aged sixty-five years.

CAMPBELL.—In Detroit, Michigan, on Friday, July 13th, Dr. W. S. Campbell, aged sixty-eight years.

COLEMAN.—In Princeton, Kentucky, on Saturday, July 14th, Dr. R. S. Coleman.

GORDON.—In Pocahontas, Illinois, on Thursday, July 12th, Dr. C. C. Gordon.

HALLER.—In Harrisburg, Missouri, on Tuesday, July 17th, Dr. Edwin Clay Haller, aged sixty-three years.

HORTON.—In Wolcott, N. Y., on Thursday, July 12th, Dr. David B. Horton.

MCQUESTEN.—At Squirrel Island, Maine, on Thursday, July 19th, Dr. Eugene F. McQuesten, of Nashua, N. H., in the sixty-third year of his age.

ODIORNE.—In Cambridge, Massachusetts, on Monday, July 16th, Dr. Walter B. Odiorne, aged thirty-three years.

PARKS.—In East Boston, Massachusetts, on Friday, July 13th, Mrs. Parks, wife of Dr. J. Wilson Parks, aged forty years.

STREET.—In Bridgeton, Pennsylvania, on Sunday, July 15th, Dr. David R. Street, aged forty-eight years.

TERRY.—In Chicago, Illinois, on Wednesday, July 11th, Dr. A. F. Terry, aged forty-five years.

THEYSON.—In New York, on Thursday, July 19th, Dr. Robert H. Theyson, aged fifty years.

WILLIAMS.—In Baltimore, Maryland, on Friday, July 13th, Dr. D. S. Williams, aged sixty-one years.

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Original Communications.

A MODIFIED OPERATION FOR MOVABLE KIDNEY.

(*A Preliminary Note.*)

BY J. CHALMERS DACOSTA, M. D.,
Philadelphia.

In many cases of movable kidney, I believe that it is unwise to operate at all, the use of a properly applied corset being relied on to keep the patient comfortable and safe. The corset devised by Dr. Gallant accomplishes this purpose more successfully than any of the so called kidney supports. If the kidney is but slightly movable, and there are neither local nor general symptoms, or if there are absolutely no local symptoms, but merely the general symptoms of hysteria or a neurotic condition, it is needless to operate. If there is trivial mobility associated with marked nervous symptoms, anchoring the kidney will seldom be followed by any prolonged improvement in the nervous symptoms. In such cases, there is often prolapse of the abdominal viscera in general. The renal mobility is commonly bilateral, although, perhaps, greater on the right side than on the left; and is usually but a part of the general splanchnoptosis.

In a case in which the kidney exhibits trivial movability, but in which the range of mobility is found to be gradually and certainly increasing, or in any case of kidney movability in which there are distinct local symptoms, operation is indicated. The distinct local symptoms mean the beginning of actual harm to the kidney, and the progressive increase of movability means the ultimate attainment of a wide range of movement. A kidney which is widely movable may at any time twist upon the ureter and the renal vessels; and it is certain to suffer from partial or slight twists, probably many times repeated in the twenty-four hours, even if a severe twist does not occur. A deduction from the foregoing statements is that a patient suffering with nephroptosis, even when the mobility is slight, should be examined at regular intervals, to note whether the area of movement is extending, or whether local symptoms have arisen. Three local symptoms that should be regarded as indications for operation are severe pain in the renal region, distinct tenderness of the kidney, and enlargement of the kidney.

What is meant by slight mobility of the kidney? Slight mobility is mobility of the first degree, according to Harris. Marked mobility is Harris's second degree; and great mobility is his third degree. Harris, of Chicago, in a notable article upon movable kidney (*Journal of the American Medical Association,* June 1, 1901), describes a movable kidney of the second degree as one in which both hands can be brought together above; and a movable kidney of the third degree, as one that descends to the pelvic brim, or moves to, or even beyond, the umbilicus.

I employ the method of examination advised by Kendall Franks. The patient lies recumbent. The surgeon, if examining the right kidney, stands at the right side of the patient places the four fingers of his left hand on the loin below the twelfth rib, and catches the thumb lightly anteriorly just below the ribs. The patient is ordered to take a full breath and hold it a moment; he is then directed to empty his lungs slowly. Just before he begins to empty them, the surgeon presses his thumb up deep below the ribs; and during expiration, the thumb follows the ascending liver, and the fingers press toward the thumb. In a markedly movable kidney, the organ at the termination of expiration will be entirely below the thumb and fingers. Then, if the grasp of the thumb and the fingers is somewhat loosened, and if the kidney is pressed on with the right hand, it will slip rapidly up between the thumb and fingers, feeling like an object covered with grease.

Any case in which the kidney has a wide range of movement—that is, any case of the second or the third degree, according to Harris—requires operation, whether there are local symptoms or not. In such a case, if no operation is performed, the kidney will eventually undergo structural change; and in such a case, a sudden and dangerous twist of the ureter and the vessels may at any time occur. A twist of the renal pedicle induces the condition known as a Dietl's crisis. In such a crisis, there is the sudden onset of violent pain in the epigastric region, the loin, or both, a pain which may radiate like nephritic coltic. It is accompanied with nausea, vomiting, vertigo, tenderness, weakness, or collapse, frequently by abdominal rigidity, and sometimes by nervous chills, with a subsequent moderate elevation of temperature. A Dietl's crisis may be induced by muscular exertion or dietary indiscretion, and may be followed by hydronephrosis, or by actual strangulation of the renal blood supply. A few years ago I operated in such an acute case and found a complete twist in the renal pedicle and absolute strangulation of the kidney vessels. Dr. Charles P. Noble, of Philadelphia, truly says that in

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a Dietl's crisis there is congestion, hydronephrosis, or both, and this statement makes clear that the severity and the danger of crises vary. Incomplete, trivial, and temporary twists of the renal pedicle may induce hæmaturia, albuminuria with casts, severe renal pain, pain in the abdomen, and dragging pain in the loin.

The surgeon is often in doubt as to whether an abdominal pain is or is not due to movable kidney. He finds, perhaps, a movable kidney; but the pain may be located by the patient in the region of the appendix. He is, therefore, uncertain whether operation on the kidney is, or is not necessary. If extensive mobility; renal tenderness, or kidney enlargement exists, operation is necessary; but if these are absent, the question is doubtful. Some surgeons have thought to solve this problem by stating that catarrhal appendicitis is a common associate of movable kidney; and that, therefore, both the kidney and the appendix require operation. That appendicitis is sometimes associated with movable kidney is certain; but how frequently the association may be is, as yet, doubtful. The belief of Dr. Howard Kelly, of the Johns Hopkins Hospital, is that it is not common. In several cases when operating on the kidney I have exposed and removed the appendix from the back. In one case of great kidney mobility, I removed a badly diseased appendix.

Dr. Kelly has shown us how to solve this doubtful question between appendicular pain and the pain of movable kidney. He catheterizes each ureter separately, and introduces into each catheter as much as the renal pelvis will hold without causing pain. He then measures this fluid from each side, and determines whether it is in excess of an estimated average. If it is in excess, he is sure that dilatation has begun. He then injects the kidney again, with the deliberate purpose of producing pain; and if the patient recognizes this pain due to the distension as of the same character and in the same position as that which he has previously felt, Dr. Kelly assumes that the pain has been due to the kidney, and not to the appendix, and recommends an operation to fix the kidney.

Having decided to operate, the next question before the surgeon is what kind of operation is to be performed. To promise success, any operation should restore the kidney as nearly as possible to its normal position; should fix it firmly in place, and should inflict no damage on the kidney itself. When in normal position, the upper extremity of the kidney is on a level with the upper border of the twelfth dorsal vertebra, and the lower extremity is on a level with the third lumbar vertebra, the right kidney being placed slightly lower than the left. The external border is directed outward and backward towards the posteroabdominal wall; the internal border is directed forward, inward, and slightly downward.

I have long been dissatisfied with the suture operation for movable kidney. Any operation that depends upon stitches being passed through the kidney substance should be abandoned. The extreme friability of the organ makes it almost certain that the tying of the stitches will cause the kidney structure between the stitches and the capsule to be cut through. Stitches passed through the kidney obtain no support whatever from the kidney, but in tying will be pulled directly against the inner surface of the capsule and, by dividing the kidney substance, will expose the patient to the danger of a urinary fistula. Stitches through the capsule alone seem much more philosophical and certain, and that one can often fix the kidney solidly by the application for such sutures has been proved.

We said, can often, but we do not believe one can always fix it permanently. When a movable kidney is raised up, and sutured into place, a cavity exists below it. The kidney is entirely unsupported below, hangs like a bucket in a well, and is in constant danger of being torn loose again. Even when a sutured kidney does not get loose, the operation is unsatisfactory, because no matter what modification be adopted, it still leaves the kidney much lower than in its normal position. Some methods get it higher than others, but all leave it abnormally low.

Another great objection to the suture operation, as usually practiced, is the following: When the kidney is pulled into or out of the incision in the loin, its convex surface faces the operator; after the stitches are inserted through the capsule, the kidney is pushed into the depths of the wound; and stitches are passed through the structures of the loin, and then tied. The convex surface of the kidney, when the stitches are tied, still faces the surgeon. Consequently, the internal border of the kidney, instead of being directed a little forward and inward, is directed altogether too much forward; and the ureter is subjected to more or less twisting. if the incision in the loin is vertical this twisting is greater than if the incision is oblique; but in either case, there is something of a twist. The low position that the kidney is held in by suturing is an objection, but the twisting of the ureter and the vessels is a great objection, and is, I am convinced, responsible for not a few of the apparent failures of the operation to correct the symptoms of the trouble.

I endeavored to correct this trouble by suturing the posterior surface of the kidney to the parietes, instead of suturing the convexity; but then I obtained a condition in which the inner border of the kidney turned inward, or inward and backward, instead of inward and forward, an equally objectionable condition of affairs. The operation that enables us to place the kidney most nearly in its correct position is the one usually spoken of as the method of Nicholas Senn.

It will be remembered that in this operation, as usually practised, the fatty capsule of the kidney is cut away and the fibrous capsule is scarified, or the kidney is decapsulated, according to the wishes of the operator or the circumstance of the case. A long piece of gauze is placed under the upper pole of the kidney, another piece is placed under the lower pole; the kidney is restored to the depths of the wound and pushed upward; and another piece of gauze is packed down upon the posterior surface. Senn was also accustomed to pass two silk sutures through the capsule at the upper end of the wound, and fasten them to the periosteum of the twelfth rib; and two silk sutures through the capsule at the lower end of the wound, and fasten them to the lumbar muscles. After passing these sutures, he would insert his

gauze. This operation puts the kidney higher than does the stitch operation, and more nearly in its proper position beneath the diaphragm; and it enables us to make the inner border of the kidney point in a normal direction, forward, inward, and slightly downward, thus preventing the twist that occurs when the sutures are used.

The objections urged against this operation are that the removal of the gauze at the end of a week or more is productive of such violent pain that it is necessary to administer an anæsthetic to accomplish it; and, further, that the wound requires weeks to granulate, and the patient must be kept in bed for an inordinate length of time. To these, I would add a third objection, that no matter how high up under the diaphragm the kidney may be pushed at the time of the operation, it tends during the healing to descend to a lower level, on account of the unfilled space below it.

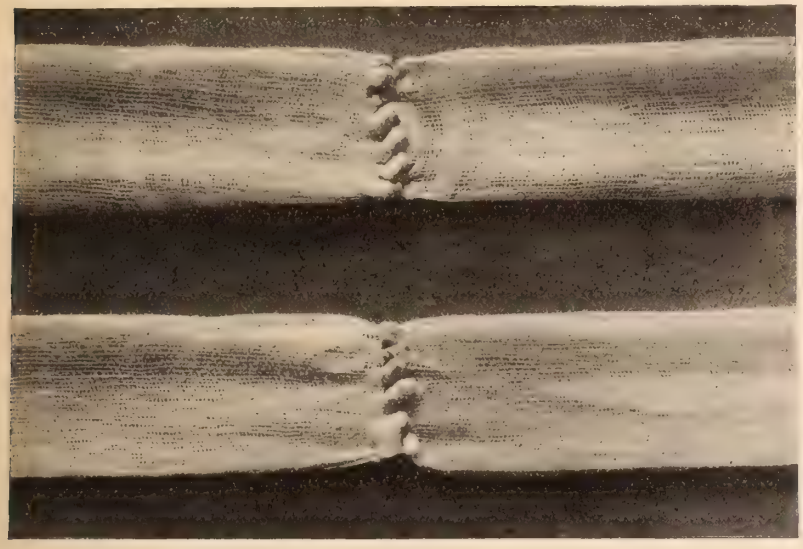

Fig. 1.—Gauze slings, each composed of two pieces sutured together with fine plain catgut.

During recent years, I have made many attempts to improve the technics of this method. When we desired to remove the gauze, I adopted the plan of having a nurse, for an hour preceding its removal, slowly squeeze salt solution into the wound. Just before the removal, she would spray in hydrogen peroxide. This enabled us to remove the gauze with much greater ease, but the manœuvre was still productive of severe pain. I then tried to surround the kidney with rubber tissue, instead of gauze, but the granulations that resulted from this method were scanty, and the kidney tended to become loose again. I then tried rubber dam, but this failed for the same reason.

We have lately settled down to the following operation: The incision is slightly oblique in order to enable us to remove the appendix if we wish; the exposure of the kidney is identical with the method of Senn. The kidney is brought out of the wound as advocated by Edebohls. The fatty capsule is cut away, and the fibrous capsule is either scraped with a needle and thoroughly rubbed with gauze, or, as in some cases seems preferable, is partially or completely removed by the operation of decapsulation. The iodoform gauze that is to be placed beneath the kidney as a sling is prepared beforehand as shown in Fig. 1. We prefer iodoform gauze for slings, as iodoform antagonizes putrefactive changes in wound fluids and seems to have an influence in stimulating granulation.

The ends of two pieces of iodoform gauze are sewed together with slender plain catgut, and thus a piece is prepared for the upper pole of the kidney. Two more pieces are sewed together in the same manner, and thus a piece is prepared for the lower pole. Therefore, instead of passing one long piece of iodoform gauze beneath a renal pole, and being obliged subsequently to pull a long end around under the kidney, when we wish to remove the gauze; we put a sutured piece of gauze under a renal pole and, as the sutures are composed of catgut, they are quickly absorbed. In a few days, the gauze is easily removed, and the suture line being directly under the kidney, there is only a short end to pull around on each side. Suturing the gauze was suggested to me by Dr. George W. Spencer.

The method of placing the gauze while the kidney is on the back is important. If operating on the right kidney, that organ projects from the back, as shown in Fig. 2. The suture line of each piece of gauze is to be on the external surface. When the kidney is restored to its position, this means that the suture line will be on the anterior surface, as shown in Fig. 3. After the two pieces of gauze have been placed around the kidney, that organ is restored to place and is pushed into its normal position; and in order to prevent its subsequent descent, a large piece of iodoform gauze is packed beneath the lower pole, so as to fill the gap, or cavity, that surely exists there, and to stimulate granulation to fill it up. Another and a smaller piece of gauze is now pushed down on the posterior surface and sides of the kidney. The protruding ends of the gauze around the upper pole are tied together with a piece of silk;

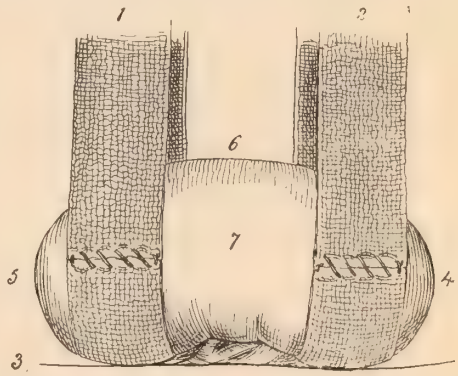

Fig. 2.—Right kidney projecting from wound. Observer standing on right side of patient. 1 and 2, slings in place, with sutures external; 3, skin of the back; 4, upper renal pole; 5, lower renal pole; 6, convex border of kidney; 7, external surface of kidney. (Slings should be broader than is shown in cut.)

the ends of the gauze from around the lower pole are also tied together in the same way; and the bit of gauze on the posterior surface of the kidney, and the four polar ends of gauze are tied into one bunch with a piece of silk. The ends of all the pieces of gauze emerge a little way from the wound, and are subsequently identified with ease.

It will be observed that we put in two double pieces and two single pieces of gauze; that is, four pieces. When we come to remove the gauze, we shall take out two pieces from around the upper pole; two pieces from around the lower pole; one piece from the posterior surface and sides of the kidney, and one piece from below the kidney. We, therefore, remove six pieces of gauze and identify the location of each piece before removal.

After the kidney has been restored to position and the gauze has been inserted, stitches of silk-worm are possed and tied at the upper and lower

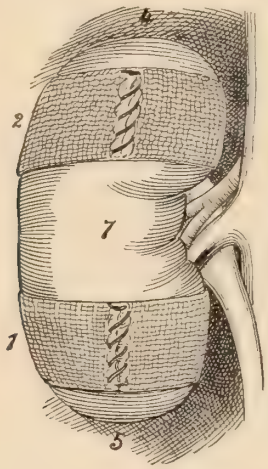

FIG. 3.—Right kidney restored to place, seen from in front. 1 and 2, slings in place, sutures anterior; 4, upper renal pole; 5, lower renal pole; 7, anterior surface of kidney. (Slings should be broader than is shown in cut.)

ends of the wound; in order to close partially the muscular, fascial, and cutaneous gap. Through the centre of the wound sutures are inserted, but are left untied, and they are not to be tied until the gauze is removed. The usual dressing is applied to the loin; a folded towel is placed on the abdomen below the right lower ribs, and a firm binder is put in place. At the end of seven or eight days we are prepared to remove the gauze.

Half an hour before the surgeon is ready to remove it, a mackintosh is placed under the patient, and he or she is put into the prone position. A nurse sits by the bed and, by means of a bit of gauze, repeatedly squeezes small amounts of warm salt solution directly into the wound. After this has been kept up for half an hour, the gauze is usually found to be completely loosened. The sutures are separated and identified, and the bits of silk are untied.

The first piece of gauze removed is that which was packed down on the posterior surface of the kidney. Then come the two pieces from around the upper pole, then the two pieces from around the lower pole, and finally the large piece from below the kidney. The wound is found to be filled with granulations, and it contracts to a comparatively small size as soon as the gauze is removed. It is irrigated with very warm salt solution until hæmorrhage has practically ceased; a small piece of gauze is inserted for drainage, and the secondary sutures are tied, the wound being thus completely closed, except a small opening where the bit of drainage gauze emerges.

The sutures which were tied at the time of operation remain in place for nine or ten days, and are then removed. The secondary sutures, which were tied when the gauze was removed, are left in place for a week after having been tied. The little piece of gauze inserted for drainage is changed daily until discharge has ceased. By the seventeenth or the eighteenth day after the performance of the operation, the wound is usually found to be soundly healed, the use of the secondary sutures having enabled us to obtain union by third intention, and having obviated the unpleasant necessity of keeping the patient in bed for many weeks, until the large wound is healed by third intention.

I do not know whether anyone has put on record any operation identical in details with this. If he has done so, I apologize to him for not having mentioned his studies; and shall be glad to correct the injustice the moment that it is called to my attention. I regard the method only as a modification of a well known plan. I have practised this operation, as finally set forth, in twenty cases; and so far, it has proved entirely satisfactory.

2045 WALNUT STREET.

COMPLICATIONS WITH FRACTURE OF THE LONG BONES AT THE WRIST.*

BY VERTNER KENERSON, M. D.,
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The complications that arise in the handling of fractures of the radius and ulna, and especially fractures of the lower end of the radius, form a perplexing chapter in surgery.

A fracture of the radius caused by direct violence, involving the lower inch is always accompanied with dislocation of the lower end of the ulna, and steps must be taken to reduce its dislocation at the same time the fracture is to be set.

These two surgical conditions, present at the same time, and involving the wrist joint, cause the complications one and all. The two bones lie side by side, and have a peculiar relation, present in no other pair of bones in our body and present in none of the lower animals, except the monkey. That is, in rotation of the forearm one of them acts as an axis in which the other one partially turns and allows the supination and pronation of the forearm.

Any limitation of this muscular and bony action is a complication that cannot be considered lightly, and if any further minute study of the causes of that limitation will make this less frequent, I shall feel amply repaid for presenting this paper at this time.

Except in rare instances, when the fracture of the radius and ulna are in the middle third of the shaft, the pronators do not affect the progress of union and complete recovery. It was formerly taught that these two muscles largely caused the difficulty in pronation and supination because they drew the two bones together and perhaps caused them to unite at a disadvantageous angle. Reports show

* Read before the Buffalo Academy of Medicine, March 13, 1906.

the infrequence of fracture of both bones at the same level, and in twelve cases seen in the last four months not one case showed the line of fracture at the same level in radius and ulna, and in all cases the line was different by at least one and a half inches. The pronators, quadratus, and radii teres, are then to be excused from blame in causing vicious union of one bone with another although having an influence on the resulting complications especially at the lower extremity.

The causes then are to be looked for at the wrist joint.

May I take up a short time in enumerating some of the complications that follow the fractures of the long bones at or near the lower extremities of those bones, and after a partial discussion of some of the methods of treatment give a short résumé of treatment best adapted to avoid such complications?

The simplest and most common is the swelling that will persist for a short time in all cases, and for a very long time in other cases and especially in elderly people. For some weeks tenderness may exist, and especially over the styloid process of the ulna. Limitation of pronation and supination may persist, finally disappearing after several months in some cases, and in some cases never will disappear. Limitation of movement of the wrist joint and in the fingers is not incompatible with a useful wrist joint.

Sometimes after a complete reduction and careful maintenance of the head of the ulna (so that styloid is prominent with the palmar surface down and less prominent with the hand held palm up), that is an anatomically perfect result, if the splints are removed too soon, the soft callous which has already formed and has not hardened, will be so moulded by the simple movements of the wrist that a deformity results.

It is not uncommon for the line of the fracture of the lower end of the radius to extend to, and involve, the sigmoid cavity of the radius, and thus the rolling movement, that exists between the radius and the head of the ulna at the wrist is interfered with, and the limitation of movements of supination and pronation are explained in part, as well as, when it is known, by means of radiographs, that there is some drawing together of the radius and ulna by the pronator quadratus and by too tight splints, or by fracture splintering of the bone above the usual point of fracture.

Often perfect supination is the last movement to be recovered. In many instances it is impossible wholly to prevent the slumping forward of the head of the ulna and its corresponding disappearance from the back of the wrist.

Some slight widening will remain after most Colles's fractures. The changes in tendon sheaths about the points of fracture cause many more complications, and cause much more hindrance to recovery, than do the bony alterations.

Regarding the slumping forward of the head of the ulna and its corresponding disappearance from the back of the hand, I wish to introduce a brief résumé of the paper published in 1870 by Dr. Moore, of Rochester, in the *Transactions of the State Society* for that year. I had seen this paper a number of times and had seen references to the same in papers written in Buffalo many times, but found no copies that could be obtained, but securing one of the reports, I have carefully made extracts from the same and will ask your indulgence while the same is reported (due credit being given the author). Full credence to conclusions are not granted by Stimson, Scudder, and other more recent writers, but inasmuch as it explains what stometimes happens, is interesting and will be of assistance.

May I give you the substance of the paper, in a few words, that you may appreciate his report made after a post mortem examination and published with great care by Dr. Moore in 1870? The substance of his claim is, that the difficulty in reduction of Colles's fractures was caused by the entanglement of the head of the ulna, in the annular ligament, after having been pushed under the extensor carpi ulnaris. The two ulnar, (flexor and extensor carpi) tendons pass one in front and one behind the

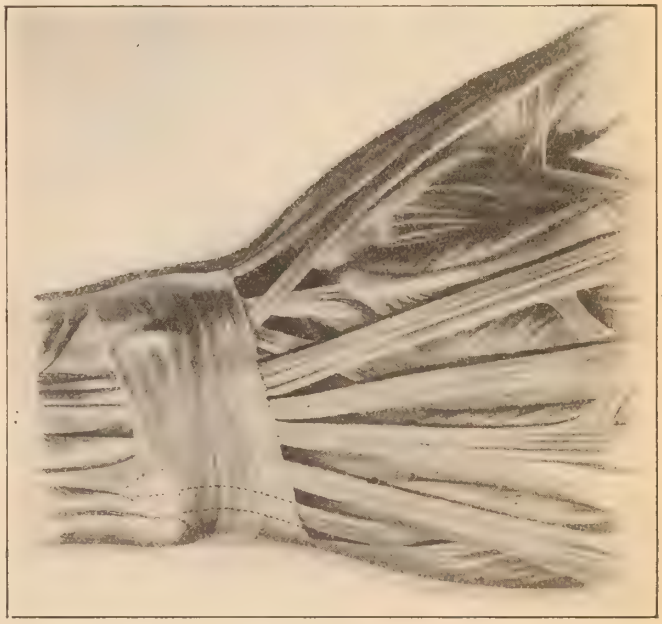

Fig. 1.—Showing the normal position of the extensor carpi ulnaris tendon slipping between the head and styloid process of the lower end of the ulna, and when the hand is in any and all positions except pronation, furnishes lateral support to the head of the ulna.

head of the ulna or particularly in front and behind the styloid process.

It is not evident why Dr. Moore maintained that the head and attendant styloid process should be held down by the extensor carpi ulnaris, more after a dislocation of the lower end of the ulna, because the extensor plays on the head and between the head and styloid on the posterior aspect always, except when the hand is prone. This extensor tendon slips in the groove between the head of the ulna and the styloid process of the lower end of the ulna, and always remains in place except after great violence, when it is displaced as indicated in Fig. 2, showing normal position.

If violence enough has been rendered to dislodge this tendon from its groove, then when the hand is midway between supination and pronation, in other words with the plane of the hand vertical, namely when the styloid process has disappeared from the posterior aspect of the wrist, and the head (instead

of the styloid process) has become prominent, then the extensor tendon may slip inward toward the sigmoid articulation of the radius and ulna, and remain lodged there.

Please note that the position recommended by Dr. Moore in his article and in all textbooks, for the most advantageous reduction, is this same verti-

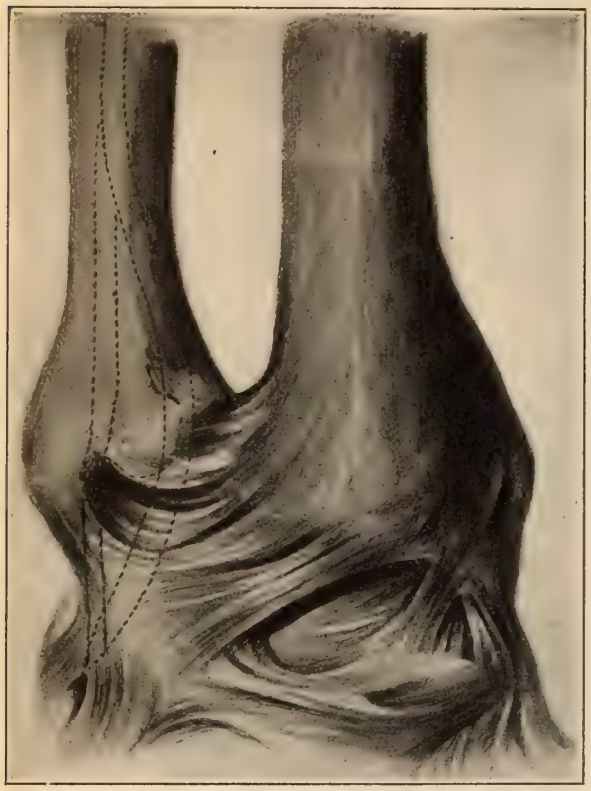

FIG. 2.—Showing in the nearly straight "sketched tendon" the usual position of the extensor carpi ulnaris. The curved "sketched tendon" shows the position of the same tendon caught radialward on the head of the ulna, keeping the wrist widened, and displacing the head forward in certain positions of the hand.

cal plane for the hand, and is the one that favors such dislodgment of the extensor tendon to the space between the radius and ulna. This entanglement Dr. Moore maintained was responsible for the inability occasionally experienced in reducing the

FIG. 3.—Make strong extension to loose impaction and draw head of ulna out of entanglement with annular ligament.

fracture, the dislocation hindering reduction, and in some cases it was not cared for first, that the deformity if seemingly not present on account of tight bandaging, etc., would appear as soon as the retaining apparatus was taken off.

This is the gist of his contention, but I wish to read a little more in detail from his report inasmuch

FIG. 4.—Bend strongly toward radial side to pull off the annular ligament from the head of the ulna.

as he was a master of description and a man much respected and justly so by the generation of Buffalo men now in middle life.

In describing the post mortem findings in a Colles's fracture, Dr. Moore says:

The next step in the manipulation was to press the displaced fragment into its place. There was a resistance, which seemed like muscular action. This being manifestly impossible, the cause was again sought for by a repetition of the movement, when the same result was produced giving an elastic rebound. The solution

FIG. 5.—Bend backward, keeping left thumb on ulna, rendering ulnar extensor tense.

was found in the peculiar position of the ulna, its luxation, and ligamentous entanglement.

It will be remembered that the ulna does not articulate with the wrist joint, but that its head, although covered with cartilage, and provided with a synovial membrane and of course a complete joint surface, articulates with the triangular fibrocartilage. The anatomists emphasize this arrangement so decidedly that we are apt to forget the important fact of the articulation by the triangular fibrocartilage on its distal surface with the wrist joint. Thus, the ulna has a mediate articulation with the wrist joint, a fact of great practical significance. It will also be remembered that the fascia of the forearm is very much strengthened at its lower end by the annular ligament, and that the extensor muscles run in grooves constructed from it, and that its transverse fibres, under the name of the pos-

terior annular ligament (see Fig. 1), run across to the pisiform bone, some of them passing over the head of the ulna. The internal lateral ligament passes from the end and inner surface of the styloid process to the cuneiform bone. The triangular fibrocartilage also

Fig. 6.—Bend toward ulna side, carrying extensor carpi ulnaris tendon over between styloid and head of ulna.

subserves the purposes of a ligament, making an insertion in the pit at the base of the styloid process, but with a stronger attachment to the radius. The ulnar extensor runs in a sheath of the fascia, and as can be seen and felt upon the arm, takes a course between the styloid process and head. But while it is really on the back of the forearm, it is so far upon its side that the tendon plays upon the side of the head and furnishes a lateral support (see Fig. 2). The tendon is just above the internal lateral ligament. The cause of rebound was manifest; for the styloid process was so far projected as to catch the fibres of the annular ligament and the ulna being prevented from rising, forced the wrist back. Various attempts at reduction were made at this stage of the examination. The ordinary plan of bending the hand toward the ulnar border of the forearm resulted in tightening the annular band on the styloid hook, and no pressure on the anterior sur-

Fig. 7.—Flex the hand and reduce the fracture.

face of the ulna could cause its liberation, but on the contrary, insured its retention. Simple extension also failed to relieve the entanglement and restore the luxation, but a movement described below was entirely successful, and when the parts were all replaced, the tendency to displacement was inappreciable (see Figs. 3 to 7, inclusive).

The displaced ulna is always noted, and surgeons have had various suspicions of ruptured ligaments. But it has not been regarded in the light of a luxation with a regular position, which must be rectified before replacement of the fracture should be made, and without which imperfect results are to be expected. This I am convinced is the key of the difficulty. Reduction of the luxation must first be made and then the fracture is probably of all others the most insignificant. . . .

The mode of procedure is as follows:

. . . An assistant holding the forearm of the patient, the surgeon grasps his hand, the right with the right, and vice versa. With the other hand placed under the forearm above the fracture, he is enabled to bring the thumb over the back of the ulna, the fingers wrapping around the radius. Traction is first made by extension (see Fig. 3), then drawing the hand laterally to the radial side (see Fig. 4), then backward (Fig. 5), next keeping it held backward, and while making extension, it is swung toward the ulna (Fig. 6) side, bending well laterally, when the extension of the hand is changed for flexion (Fig. 7), thus describing nearly a semicircle in circumduction. The position of the hand grasping the forearm undergoes constant change, as it is the antagonist of the other hand in everything, including extension. As the backward position of the hand, when it is carried to the extreme ulnar side, is changed to flexion of the hand, the thumb of the surgeon rolls around the border of the ulna, and is below when the manœuvre is complete, the fingers of the left hand pressed on radius at point of fracture complete the reduction. The test of reduction is to be found by the presence of the head of the ulna on the radial side of the ulna extensor. This latter test is to be made with the hand in pronation.

The head of the ulna rests mediately through the triangular fibrocartilage on the cuneiform bone, and is restrained from going backward by the annular ligament, holding on each side the tendons of the extensor minimi digiti, and the extensor carpi ulnaris, thus making a concavity corresponding in form to a socket. When it is pressed into this pocket and the hand flexed so that the head is supported by the wrist, the position of the hand is also restored in its relation to the radius. As a result of the displacement of the ulna, the ulnar extensor is carried from its place above the styloid process to the opposite side of the ulna in an extreme displacement, but sometimes remains above its centre. To disentangle the styloid and swing the tendon of the ulnar extensor over into its place, is the purpose of the manœuvre. The hand is drawn toward the radius to pull off (by stretching) the annular ligament. The backward motion, accompanied with extension, renders the ulnar extensor tense, which serves to draw the annular ligament backward. This is effected by pressing the thumb upon the ulna. The circumduction carries the tendon over the side. Its character as a luxation is still further shown by the fact that the restoration is often accompanied by a snap, both tangible and audible. If restored, the retention is effected by a compress and bandage of adhesive plaster. When the manœuvre described has been completed, the hand is flexed, and the thumb of the surgeon rests on the under side of the ulna. Its head appears on the back of the wrist, and corresponds with the opposite arm in every respect, except the swelling from blood effusion. As in the treatment of any other luxation, the effort should not be abandoned until the deformity is removed and the ulna extensor in its place—a fact that can be determined at once. . . .

A short period of time for continuing the treatment, which has been adopted in the recent cases, has been justified by the results, and has been entered on for two reasons: Motion as early as possible after ligamentous repair is a cardinal principle in the treatment of luxation, and therefore desirable in these cases.

Moreover, the fractured surfaces are broad and neatly opposed, and are in cancellated bone. These considerations induced the trial of fourteen days as the standard of time, which has been fully justified by the results.

To the plan of direct extension, which has some strenuous advocates, I am disposed to attribute more successful terminations than to that of immediate lateral bending toward the ulna. For extension is the means of reducing luxations so generally that it would be likely to prevail here, but I am satisfied that it cannot be relied on for maintaining the neat and close fit required for the ulnar head in its facial socket. Apparatus will become raised, and if the extension yields there is a tendency of the ulnar head to slide downward. This can be verified by merely removing the support from beneath the ulna after reduction. Hence the plan of bending the hand laterally, which has been the almost universal practice, is justified by its success in retaining the ulna; but the plan so often fails in the restoration that we must believe it has generally been pulled into its place by extension first in the cases that had a successful termination.

The shortening of the radius and the lateral twist of the hand have usually been explained on the ground of impaction of fragments.

I have made some measurements, both as tests of the fact and amount of displacement, which I have not known to have been made before. By placing a plane behind the elbow and the forearm at right angles to the arm, a measurement to the extreme point of the ulna and radius shows in the normal condition that the distance is the same. But when the radius is broken and the ulna luxated, a shortening of the radius takes place of from a quarter to nearly three quarters of an inch. At the same time the breadth of the wrist, measured by placing two plane surfaces on each side, is increased by the lateral bend of the broken radius.

These measurements I regard as of great importance in making a diagnosis in the absence of crepitus.

One of the serious difficulties in the fracture and luxation I have described arises from the doubt in diagnosis. Effusions around the wrist take place with great ease upon injuries by falls on the hand, and as crepitus is rather the exception than the rule, our pathognomic sign of the fracture is often lost, and when absent I believe the measurement will prove a sure test. If there is fracture and the length is normal, crepitus will be present, for the fractured surfaces will be in opposition.

RÉSUMÉ.

1. The lower fragment is carried back over the radius, turned toward a rectangular position and is not impacted. This accounts for the shortening of the radius and the bending of the hand to the radial side of the forearm.

2. The internal lateral ligament and triangular fibrocartilage are usually broken, and when this occurs the posterior annular ligament is slipped over the head of the ulna and caught on the styloid process, holding its point close to the pisiform bone.

3. The diagnosis of fracture is revealed by measurement, or crepitus, or both.

4. The diagnosis of luxation is made out by the relation of the head of the ulna to the tendon of the extensor carpi ulnaris.

5. All difficulty in treatment disappears when the luxation is restored.

I must apologize for consuming so much time in reading from an old report, but if all had the same difficulty in securing a copy that I did, you will perhaps be glad to have it second hand from my paper.

The complication of a displaced styloid process and head of the ulna is the most common complication met with in fractures at or near the wrist.

This results in a deformity well marked and shows not only the widened wrist, but the "slumped" forward lower end of the radius.

FIG. 8.—Method of "slip noosing" a skein of yarn to place over a wrist.

In a former paper (see Figs. 8, 9, 10) I suggested the use of a skein of yarn arranged to form a noose and then attached to some firm standard, say a staple, a radiator or door knob, that allows the surgeon to have full and free use of his hands, while accomplishing the setting of the arm. When, however, the assistance of another physician is at hand, or that of a good firm minded man, to hold the patient's arm while the surgeon grasps the patient's hand, the right hand with the right hand and vice versa, then as directed makes strong extension directly in the line of the forearm, then bends the hand, strongly toward the radial side, then backward, then toward the ulna side, keeping the hand well back and extended, and finally flexing the hand, meanwhile using the opposite hand to replace the broken fragments of the radius, the skein of yarn will not be needed.

FIG. 9.—Skein of yarn adjusted to wrist.

A splint should then be improvised to hold in place a small pad to press the lower end of the ulna back into place, and then the arm should be enclosed and allowed to hang in sling in half supine-prone position with plane of hand vertical.

In other words to avoid the most frequent complication and most uncomfortable arrangement for the reduction complete, including the dislodgment of

the lower end and reduction of the fracture, this maintenance of position for a short time only, say ten to fourteen days. Passive motion should then be started and carried on each day removing and replacing the splint. The arm from the first removal of splint should be treated with alcohol and some rubbing oil, preferably cacao oil and oil of pine needles.

Little success attends the attempted correction of deformities after the union at point of fracture has become firm, especially so if the function be

FIG. 10.—Method of traction against skein and manipulation of fracture with right hand.

well restored. Early motion then should be undertaken and rubbing and bending hand and wrist after the first seven days, and rotation of the forearm as soon as it can be tolerated slowly, and in my experience that is one of the last functions to be fully restored.

There is no way to insure perfect results in all fracture cases, but as complete an understanding as possible of the factors that go to make up the causes of poor results will help. Functionally good results are always possible, but union without deformity with the head of the ulna in good position with the wrist not spread is not always to be expected.

The tenderness that will in some cases remain over various prominent parts of the wrist especially the styloid process can be remedied only by seeing to it that no hard part of any splint exerts direct pressure on a given point, and if that has not been arranged, the cure will mean a lapse of a few weeks and some energetic massage. The complications arising from soft callous and early mobility is seldom seen. This fracture seldom occurs in children when such manifestations are most frequently seen and adults remain bandaged rather too long than too short a time.

May I review the points of the paper. Most fractures at the lower end of the long bones of arm are Colles's fractures, namely fracture of the lower end of the radius, with displacement of the ulna.

Complications are:

1. Deformity resulting from incomplete reduction of the ulna, and slumping forward of the head of the ulna.
2. Widening of wrist.
3. Tenderness of skin over styloid process.
4. Poor function, inability to fully close the hand and pronate and supinate.
5. Displacement of hand apparently toward the radial side.

The remedies suggested are:

1. Complete reduction of ulna dislocation followed by reduction of fracture. Suggestions were taken from Dr. Moore's paper published in 1870, which in substance said: Extend,—bend toward radial side,—then back (which loosens impaction), —then toward ulnar side keeping hand well back,—then flex the hand, while the radius is replaced by the other hand. Use the skein of yarn suggested in my former paper when a competent assistant is not present.
2. Retain in place by roller placed on splint under head of ulna.
3. Take out of splints early.
4. Use massage and passive movement early.
5. Do not expect perfect results always, and forewarn patients to that effect.

At best these cases require good judgment and sufficient perseverance to repeat any given manœuvre to insure the replacement and retention in place by natural forces of those parts that are displaced.

181 ALLEN STREET.

CARCINOMA OF THE STOMACH, WITH THE REPORT OF A CASE.

BY JOHN DUDLEY DUNHAM, A. B., M. D.,
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CASE.—The patient, a man, fifty-two years old, by occupation ice dealer, consulted me in July, 1904, for a gastric complaint. The family history was negative, none of his people having died of tuberculosis or malignant disease. He himself has had the diseases of childhood, but no other diseases, and denies venereal infection. He is not addicted to the use of tobacco or alcohol. Until four months ago he has been a hearty and rapid eater.

Present illness began in January of 1904, when the ingestion of food was followed by eructations of gas and sour fluid. Coincident with this was a loss of appetite and inability to perform heavy work. His family physician administered some artificial digestants and regulated the diet, but without benefit to the patient. For the past four weeks he has occasionally vomited sour undigested food, but never blood, nor has he observed material resembling blood in his stools. There is no definite history of pain after food. The skin is sallow and the conjunctiva pale. The weight before the beginning of his illness was 175 pounds, and now is 130 pounds. The tongue has a whitish coating. The chest shows normal conditions. A small indefinite movable tumor is found to the right of the median line in the epigastrium. The stomach appears to occupy its usual position. The liver and spleen are normal. An examination of the blood shows a hæmoglobin percentage by the von Fleischl method of 50, and a secondary anæmia with an increase of leucocytes is shown by stained specimens. The urine is normal.

A diagnosis of cancer of the stomach was made, and the patient was advised to consult a surgeon without delay, for the purpose of having an exploratory operation performed. This advice was rejected by the patient, who was under the care of another physician, receiving medical treatment from July to December 18, 1904. At this latter date five months after a diagnosis had been made he entered Hawkes Hospital, of Mt. Carmel, in the service of Dr. W. D. Hamilton and Dr. C. S. Hamilton. A consultation with these surgeons at this time showed the patient has become markedly

anæmic and sallow in appearance. He has recently vomited coffee ground material, and has suffered a considerable loss of strength. His weight is 126 pounds. In the epigastrium is a tumor the size of a lemon, quite sensitive to the touch, so that its physical characteristics cannot be determined. The hæmoglobin is 40

FIG. 1.—Section through thickened wall of stomach. B. D. L., 2-3 obj.

per cent., and there is present a marked secondary anæmia.

The Doctors Hamilton operated upon the patient December 22, 1904. The remarks by the two surgeons in relation to the operation are as follows: "The stomach was found to be the seat of a tumor extending from the region of the pylorus along the lesser curvature to its middle. The growth partially closed the pylorus, involving the peritonæum on the anterior gastric wall. Gastrectomy was performed after the Mayo method, one inch of the duodenum being removed, and a posterior gastroenterostomy with Robson bobbin was done."

The pathological report reads as follows: The portion of the pyloric end of the stomach removed is twelve by nine by three centimetres. The anterior

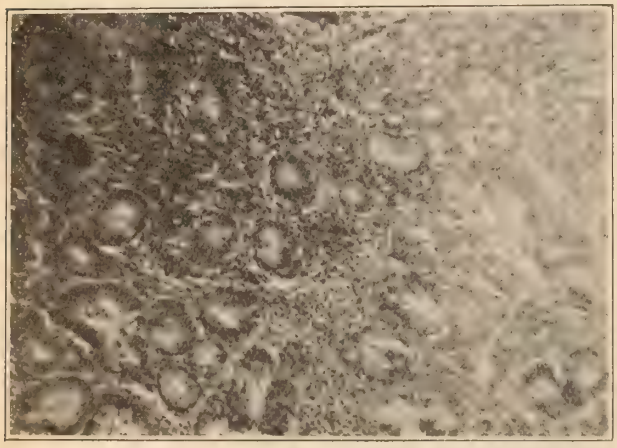

FIG. 5.—Section through edge of the mucous membrane. B. D. L., 1-6 obj.

surface is irregular, extending for a distance of seven centimetres toward the cardiac end. The omentum is attached to this thickened mass. Posteriorly, the surface is smoother, the thickening extending down five centimetres from the lesser curvature. A hard irregular indurated mass occupies the wall of the stomach, except the lower, posterior portion along which is an apparently uninvaded strip. The inner surface is reddened and injected. Erosions and ulcerations are noted. The mucosa can only be made out in the free area described.

The photomicrographs and the histological report by Dr. James McIlvaine Phillips states that: "The specimen consists of an irregular block of white tissue, previously fixed and hardened, and brought to this laboratory in alcohol. The block is an irregular mass about three centimetres long, one and five tenths centimetres thick, and two centimetres wide. One surface resembles thickened and irregular mucous membrane, the other serous membrane.

The mass of tissue was cut into blocks of suitable size, embedded in celloidin, and these blocks so oriented that sections cut from them extend from the mucous to the serous surfaces. Sections were then stained in hæmatoxylin and eosin and, for photography, in alum carmin.

The sections take the stain poorly. The tubular glands in the thickened mucous membrane are enlarged and irregular. In their more superficial portions the cylindrical epithelium lining them mostly consists of a single layer. In their deeper portions several layers are seen, and in some tubules the cells entirely fill the lumen. A few of the tubules are cystic. In many of the tubules the thickened layer of cells lining them infiltrate directly into the surrounding tissue. The epi-

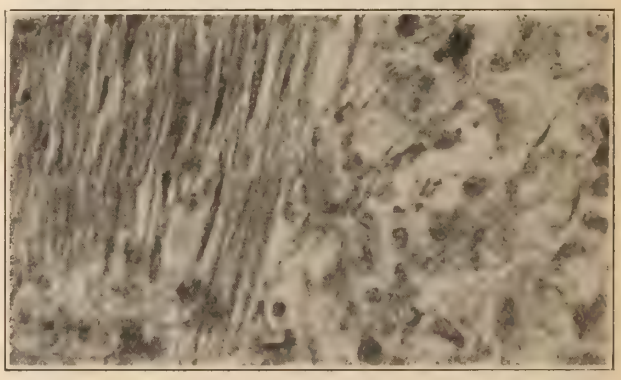

FIG. 2.—Portion of same field as shown in Fig. 1. B. D. L., 1-5 obj.

thelial cells are large and many of them swollen and hazy, being transformed into a material which resembles mucin in staining reaction. The submucosa is thickened and infiltrated with round cells and leucocytes. In places irregular islands of epithelial cells are seen.

The muscular coats have almost entirely disappeared and are replaced by masses of epithelial cells, the nuclei in many of which show karyokinetic changes. Some of these cells contain two or more nuclei. These masses of cells are separated from one another by a very coarse meshed network of fine, loose connective tissue fibres. Very delicate capillary bloodvessels are seen in these strands, but none are found among the epithelial cells. Here and there large islands or strands of connective tissue and atrophic involuntary muscle are seen. Diagnosis: Carcinoma of the encephaloid type."

June 12, 1906. An examination of the patient at this time, almost eighteen months after the operation, shows a man apparently in good health. His color is good, he seems strong, his digestion is excellent, and his bowels are regular. He is able to work in his garden for eight hours without exhaustion. His diet is general, and no discomfort follows his meals. The hæmoglobin is seventy-five per cent., and his weight is 156 pounds—an increase of thirty pounds since the operation. The contents of the stomach removed after an Ewald test breakfast show the absence of free hy-

drochloric acid, the presence of lactic acid, a total acidity of twelve. Microscopically no pathological elements are found.

Conclusion.—The history of this patient is given simply as another illustration of the benefit to be derived from the surgical treatment of a non-medical disease—cancer of the stomach. Whatever the subsequent history of this patient may be, his interests were best subserved by the operation which was performed, even though it was somewhat late in the progress of the disease. The suggestion made by Dr. Mayo that the public should be educated in regard to the nature of cancer applies to this case. Had this man been less ignorant and prejudiced, four months would have been gained by an earlier operation.

I wish to express my thanks for the courtesies extended in the preparation of this report by the Doctors Hamilton, Dr. J. McI. Phillips, and Dr. Clement L. Jones.

186 East State Street.

A SIMPLE DEVICE FOR WORKING DIRECTLY WITH PERCENTAGES IN THE HOME MODIFICATION OF COW'S MILK.*

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Any one who is conversant with the literature pertaining to artificial infant feeding knows what a vast amount of effort and ingenuity have been put forth in attempts at producing a simple method of home modification of cow's milk by the percentage method. That the problem had not been solved is evidenced by Holt's statement in his *Diseases of Infancy and Childhood*, viz.: "The thing desired is a method simple enough to be readily grasped by the average mother or nurse who is to carry out the physician's directions."

In laboratory modification the physician writes for modified cow's milk containing certain percentages of fat, proteids, sugar, mineral salts, and water or gruel, and by a scratch of the pen can change the food prescription. In home modification of milk he must translate his percentages into the quantities of milk, cream, top milk, sugar, and water or gruel, that must be combined, and then write out directions for the mother for making up the food. Each time a percentage is changed this process must be repeated, and it is this fact that has prevented the general use of percentage feeding in spite of its many advantages.

In the device about to be described all of the complications that have been mentioned are eliminated by the application of a new principle which is to graduate a measuring vessel to percentages of proteids and fat of cow's milk, so that any desired percentage of proteids and fat may be obtained directly without the necessity of calculations or writing a food formula. Percentage prescriptions may now be written for home modification just as for a laboratory, and any one of ordinary intelligence can put up the prescription in a few minutes from one quart of bottled milk and with remarkably accurate results.

After this scheme of modification had been devised and a vessel invented for putting it into practice, it was submitted to a number of well known pædiatrists, and at the request of a number of them this account of the method and the principles involved has been written.

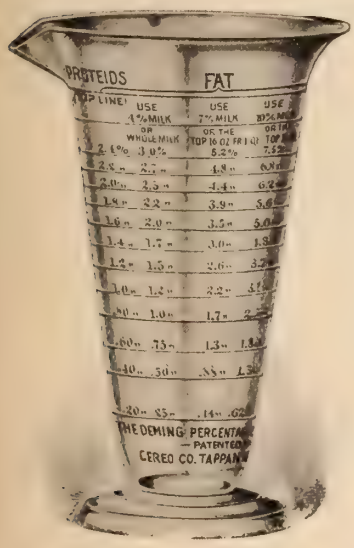

Fig. 1.—The Deming percentage milk modifier.

Fig. 2.—One quart bottle of milk after cream has risen.

Fig. 3.—Chapin dipper.

Fig. 1 is an illustration of the device, which is a sixteen ounce graduate that will measure both ounces and percentages. The first column at the left is graduated from 0.20 per cent. to 2.40 per cent. proteids, each graduation representing 0.20 per cent. proteids. The other columns at the right are the fat percentages obtained when milks containing 4 per cent., 7 per cent., 10 per cent., and 12 per cent. of fat are used. The 7 per cent.,

* Presented at the meeting of the American Pædiatric Society, in Atlantic City, May 30, 1906, and at the meeting of the American Medical Association, in Boston, June 6, 1906.

10 per cent., and 12 per cent. milks or top milks are to be removed from one quart of good milk after the cream line is distinct (Fig. 2) by means of the Chapin dipper (Fig. 3), according to directions.

In making up percentage mixtures whole milk or top milks are poured into the graduate up to the desired percentage of proteids and a diluent is then added to the uppermost graduation, which is marked *top line*. This will make sixteen ounces. At the head of each column of fat percentages is stated the kind of milk to be used to secure those percentages and how it may be obtained from one quart of bottled milk.

The percentage of sugar in the diluted milk will be almost exactly the same as the percentage of fat in the first column of fats, i. e., under 4 per cent. milk.

	Per cent.
1 level tablespoonful of granulated sugar adds	2.5
2 level tablespoonfuls of granulated sugar add	0.5
1½ level tablespoonful of milk sugar adds	2.5
3 level tablespoonful of milk sugar add	0.5

To make up half the quantity, or eight ounces, pour in milk up to one half the desired percentage of proteids and add diluent to the 8 ounce line. Use only one half quantity of sugar.

If it is desired to add 5 per cent. or 10 per cent. of lime water to the mixture leave out one ounce of diluent for 5 per cent., or two ounces for 10 per cent., and replace with lime water.

Example.—To make a mixture of 1 per cent. proteids, 3 per cent. fat, and 6 per cent. sugar, look for 3 per cent. fat on the same line with 1 per cent. proteids. It will be found in the third column of fats under "use 10 per cent. milk or the top eleven ounces from one quart." Remove this top milk from a quart bottle of milk, pour it into the graduate up to the 1 per cent. proteids line, and then fill to top line with boiled water or gruel and add 5 per cent. of sugar (two level tablespoonfuls of granulated sugar, or three of milk sugar). Stir until the sugar dissolves.

Example:

FOOD PRESCRIPTIONS.

	Proteids. Per ct.	Fat. Per ct.	Carbohydrates. Per ct.	Directions
1st day	0.20	0.44	5	Obtain one quart of good bottled milk, and after the cream has risen dip off the top sixteen ounces, or pint, into a pitcher or bowl, and stir to mix. The first dipperful will have to be removed with a teaspoon or the bottle will overflow when the dipper is inserted. Pour this milk into the graduate up to the desired percentage of proteids. Add one ounce of lime water and fill to the top line with boiled water or gruel. This makes sixteen ounces. Add two level tablespoonfuls of granulated sugar or three of milk sugar. Stir to dissolve the sugar.
4th day	0.40	0.88	6	
8th day	0.60	1.3	6	
12th day	0.80	1.7	6	
20th day	1.0	2.2	6	
1st month	1.2	2.6	7	
2d month	1.4	3.0	7	
3d month	1.6	3.5	7	
6th month	2.2	2.7	7	Shake the bottle of milk to mix in the cream, and use whole milk as above instead of top milk.
9th month	2.4	3.0	7	
12th month	3.2	4.0	5	Feed whole milk.

After the mother or nurse learns to make one mixture she can make any ordered percentage combination, for all she has to do is to pour milk into the graduate up to the line at the desired percentage of proteids, and the kind of milk to use is indicated at the top of the column containing the desired percentage of fat.

Not only can any prescription be readily put up, but the strength of the food may be cautiously increased and the infant can be trained to digest the proteids of cow's milk by gradually and uniformly increasing the quantity, at the same time avoiding the possibility of excess of fat.

By using half graduations the proteids can be increased by 0.10 per cent. and fats by 0.22 per cent. at a time. When 2 per cent. proteids or over is desired it will not do to use the top sixteen ounces of milk in making the mixture, as it will give over 4.4 per cent. fat (see graduate), which is rather high. Whole milk should then be used instead.

Basis of Graduations and Accuracy.

Proteids.—The variation in percentages of proteids in modifications of cow's milk is accomplished by diluting the milk more or less. Dividing the percentage composition of the whole milk or top milk by the dilution will give the percentage composition of the diluted milk. Thus, if a pint or sixteen ounces of a diluted milk contains one ounce of milk the percentage composition of the diluted milk will be one sixteenth of that of the whole milk. Taking 3.20 per cent. as the amount of proteids in whole milk or top milk the diluted milk would contain 0.20 per cent. of proteids. Therefore, this percentage is placed opposite the first ounce graduation; 0.40 per cent. opposite the second ounce, 0.60 per cent. opposite the third ounce, and so on.

Van Slyke gives 3.30 per cent. proteids for whole milk containing 4 per cent. of fat and 3.10 per cent. proteids for milk containing 3.5 per cent. of fat. As the bottled milk for family trade contains a little under 4 per cent. of fat, for reasons that will be explained later, and as top milks contain slightly less proteids than whole milk, 3.20 proteids is probably the correct figure to employ for use in home modification, unless rich Jersey milk is used, which will be the exception. Jersey milk will contain about 3.50 per cent. proteids.

It really makes very little practical difference whether 3.20 per cent. or 3.40 per cent. of proteids, which some use, is employed as the basis for calculating proteid percentages, as will be seen by the following comparison of percentages when both are used in calculating mixtures:

	Per ct.		Per cent.
Whole milk	3.20	3.40 proteids; difference	⅛ of 1
Diluted to	2.00	2.125 proteids; difference	⅛ of 1
Diluted to	1.60	1.70 proteids; difference	1-10 of 1
Diluted to	0.80	0.85 proteids; difference	1-20 of 1
Diluted to	0.20	0.21 proteids; difference	1-100 of 1

Fat.—Percentages of fat are varied by diluting whole milk and different top milks. Dividing the fat percentage of the whole milk or top milk by the dilution will give the fat percentage of the diluted milk. Thus, one ounce of 4 per cent., 7 per cent., 10 per cent., or 12 per cent. of fat milk in a sixteen ounce mixture would give 0.25 per cent., 0.44 per cent., 0.62 per cent., or 0.75 per cent. fat in the diluted milk, so these figures are placed opposite 0.20 per cent. proteids at the first ounce graduation, twice these percentages at the second ounce, and so on up the scale.

Considerable misapprehension exists concerning top milks. This term is used very loosely,

which causes needless confusion. Fig. 2 is an accurate illustration of a quart bottle of milk as it usually appears when delivered to families by the milk dealers. In the upper part is a distinct layer of cream, five to seven ounces generally. The absence of this cream layer indicates that the milk has been recently bottled, and in cities almost always means that the milk has been bottled in town and not in the country. The composition of different portions of this layer of cream is exceedingly variable, and is influenced by the shape and size of the neck of the bottle. The milk immediately below the cream layer contains usually a very small percentage of fat, generally much less than 1 per cent. In one instance the writer found only 0.2 per cent. fat after the cream had been removed with a Chapin dipper; a great many times only 0.4 per cent., and almost always not over 0.6 per cent. fat. This statement applies to bottled milk as delivered to families by the milk dealers, and not alone to milk set to cream under specially favorable conditions.

The families who buy bottled milk have become educated to look for this layer of cream, and are suspicious of the milk if it is not visible. This fact has often been stated to the writer by milk dealers, and was particularly impressed upon him by a scientific milk producer who kept some cows in the borough of Brooklyn. This producer could deliver within three hours after milking milk that would pass the milk commission's tests for certified milk, but he could not dispose of it to families because the cream had not risen. Morning milk could only be sold in the evening when the cream showed plainly. From the above it will be readily understood why bottled milk can almost always be used for obtaining top milks as soon as received by the family, and that generally it is not necessary to wait several hours for the cream to rise.

It would seem better to restrict the term top milks to mixtures of all of the creamy layer and more or less of the remaining milk, and to call the creamy layer *gravity cream*. Some writers call the top ounce or top four ounces of the cream layer top milks. In reality, they are rich creams, often containing 20 per cent. to 30 per cent. of fat, and they vary greatly in fat content. When all of the cream is mixed with a definite quantity of the under milk, a top milk containing almost exactly the same percentage of fat may be obtained from the same milk, day after day. Thus, a quart of milk containing 4 per cent. of fat will yield after the cream has risen:

7 ounces	16 per cent. fat.
8 ounces	14 per cent. fat.
9 ounces	12 per cent. fat.
10 ounces	11 per cent. fat.
11 ounces	10 per cent. fat.
13 ounces	9 per cent. fat.
15 ounces	8 per cent. fat.
17 ounces	7 per cent. fat.
20 ounces	6 per cent. fat.
25 ounces	5 per cent. fat,

When the under milk contains 0.6 per cent. of fat these percentages will vary a fraction of 1 per cent.

It may be objected that milk varies a great deal in its fat content, and that these percentages will not be obtained generally or when the milk contains 3 per cent. or 5 per cent. of fat, which is quite true, but certain practical conditions intervene which keep the bottled milk nearly up to the 4 per cent. fat standard.

The law of the State of New York, and of nearly all other States, calls for milk containing 12 per cent. of total solids and at least 3 per cent. of fat. Upon testing, the greater part of the milk sold in cans, which has passed through the hands of the large milk companies, will be found to contain almost exactly 3 per cent. of fat and 9 per cent. of solids not fat, making a total of 12 per cent. of solids. For the bottled milk trade, milk containing more than 3 per cent. of fat is required to produce the layer of cream in the necks of the bottles which the public demands. Examination of the bottled milk supplied by the large milk dealers will show it almost invariably to contain about 3.60 per cent. of fat and 8.40 of solids not fat, or total solids 12 per cent., as the law requires. The writer found this to be the case so many times that inquiry was made of the milk dealers and those familiar with the way milk is handled for the New York city market, and it was said that the milk is manipulated by removing some of the fat free milk, thereby increasing the percentage of fat in the remaining milk, or by adding Jersey milk to milk containing less fat. Such milk containing 4 per cent. fat is not normal 4 per cent. milk, and its proteid content will be less, probably about 3.20 per cent. It must not be supposed that no milk naturally containing 4 per cent. of fat is sold, for some dealers make a point of keeping their milk up to this standard, but their trade is comparatively small. A relatively small amount of Jersey milk is sold which contains 5 per cent. of fat and about 3.50 per cent. proteids.

As the graduate is adjusted to milks containing 4 per cent., 7 per cent., 10 per cent., and 12 per cent. of fat it will be interesting to see how close to these percentages the top milks will run when obtained from milk containing 3.60 per cent. of fat or 5 per cent. of fat, and what the error would be in percentage mixtures.

	Per cent.	Graduate's (figures). Per cent.	Jersey milk. Per cent.
Whole milk	3.6	4	5
Top 16 ounces	6.6	7	9.4
Top 11 ounces	9.3	10	13.4
Top 9 ounces	11.2	12	16.2

In mixtures containing below 1 per cent. of proteids the error in fat with the 3.6 per cent. fat milk would not be over 0.25 per cent. With Jersey milk the results would be one fourth greater than the fat percentages on the graduate. These errors are common to all methods of modification of milk where standardized milks are not used.

By using half graduations, proteids may be varied by 0.10 per cent. at a time and fats by 0.12 per cent., 0.22 per cent., 0.31 per cent., or 0.38 per cent.; and by using top milks containing 5 per cent., 6 per cent., 8 per cent., 9 per cent., or 11 per cent. fat, which may be as easily obtained as the 4 per cent., 7 per cent., 10 per cent., and 12 per cent. milks indicated on the graduate, nine

different percentages of fat may be had with each percentage of proteids.

As the modifier is now marked, fifty different percentages of fat less than 4 per cent. may be had in combination with proteids under 2 per cent.; and thirty-six different percentages of fat below 4 per cent. with proteids under 1 per cent., which it is thought will meet all requirements of general practice.

By this method of modification mixtures of marvelous accuracy may be quickly made up by anyone of ordinary intelligence, and, furthermore, the physician, nurse, or mother will learn to think in percentages. In fact, it would be as awkward to think in ounces when using this modifier as it now is to think in percentages. All mathematics and tables of formulas are eliminated, and the time now devoted to calculating mixtures and writing out food formulas is saved.

No matter if the percentages of the whole milk are not known, or if standardized milks are not employed, with this graduate the ingredients of the milk can be adjusted by small percentages to suit the infant's digestion, and in no instance can the error be a great one.

The writer wishes to extend his thanks to Dr. Caille, Dr. Chapin, Dr. Coolidge, Dr. Crandall, Dr. Griffith, Dr. Holt, Dr. Kerley, Dr. Pisek, and Dr. Southworth for advice in regard to adapting the modifier to the needs of physicians, and to Miss Marianna Wheeler for many suggestions from the standpoint of the infant's nurse.

THE SURGICAL SIGNIFICANCE OF JAUNDICE.*

By SAMUEL LLOYD, M. D.,
New York.

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Since Bobbs, of Indianapolis, (1867) first performed the modern operation of cholesystotomy and Marion Sims later suggested the name, the surgery of the liver has advanced with great rapidity and now occupies one of the most important positions in the surgery of the abdomen. It is, therefore, only within these few years that we may say that jaundice has taken on a new significance. The great bulk of the information now at hand with regard to the cause of jaundice has been the result of surgical investigation. In spite of the fact that many of our best observers have emphasized the necessity of an early recognition of the cause of jaundice and the institution of the proper treatment, the medical profession still favors the treatment of these symptoms by drugs for a long period of time, referring the case to the surgeon only when the condition of the patient is almost hopeless.

Under the old classification of hæmatogenous and hepatogenous jaundice, which Osler and many other medical writers still adhere to, it is difficult to classify the causes of this condition in a way that is satisfactory to the surgeon. Hæmatogenous jaundice is practically reserved by Osler for those conditions produced by the poisons of malaria, typhoid and yellow fever, epidemic jaundice, and pyæmia, snake virus, chloroform, ether, phosphorus, mercury, etc. These cause an increased destruction of the red blood corpuscles, with the liberation of a larger amount of blood pigment than can be taken care of by the liver, spleen, or kidneys. The symptoms of this form, Osler says, are less striking than those of the obstructive variety.

I do not believe that true jaundice ever results from any destructive condition in the blood itself. There is a vast difference between the symptoms resulting from an absorption of bile and the bile salts caused by a diseased or obstructed liver and those we see following on alteration of blood processes. In the latter the staining of the skin and of the eyes is of a very different type from true jaundice, and the careful clinician should be able to differentiate between them.

The absorption of blood pigment resulting from retained hæmorrhage—as in the abdominal cavity after a ruptured ectopic gestation sac, or a hæmorrhage into some other large cavity—gives a slight yellowish tinge to the skin, little or no staining of the eyes, an absence of itching, and is accompanied by the sighing respirations, the restlessness, the dilated pupils, the weak and rapid pulse, marked thirst, and all of the other symptoms that are so well recognized as indicative of loss of blood. The dejecta from the bowels are not white and pasty, and the urine does not give the characteristic signs of the presence of bile.

In order to have a true jaundice we must have absorption from the liver of the bile and the bile salts, with the white pasty stools, marked staining of the skin and mucous membranes, the itching of the skin, the presence of bile in the urine, the loss of appetite, and all of the symptoms so well recognized as the result of poisoning from the absorption of the liver secretions.

The bile is not reabsorbed from the liver directly by the blood, but it is taken up by the lymphatics of the liver, and reaches the blood current only through the thoracic duct. I believe, therefore, that it is a great deal more satisfactory for us to discard this classification in order to get a scientific explanation of the causes of jaundice. Porter gives us a much more definite classification when he divides jaundice into the *intrahepatic* and *extrahepatic* forms. In the intrahepatic he places all those types which result from the mineral poisons or from the infectious diseases, and explains their production in a much more rational way. He says:

> If for any reason toxic agents are introduced into the animal economy—as, for instance, certain mineral poisons or some of the organic poisons, such as microorganisms and their products—the hepatic cells are called upon suddenly to aid in the destruction and elimination of these poisonous compounds. As a natural sequence, the hepatic cells are overworked, their nutritive activity impaired, and soon they become swollen and undergo a retrograde metamorphosis.

Jaundice may then be defined as an absorption of the bile and biliary pigments by the lymphatics of the liver and their distribution throughout the body by the blood.

Mayo Robson classifies the cause of the extrahepatic variety as follows:

1. Common duct cholelithiasis; 2, chronic pancreatitis; 3, simple stricture of the common duct; 4, inflammatory adhesions, causing pressure on or

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* Read in part before the Medical Society of the County of Orange, Middletown, N. Y., January, 1905, and in its present form before the American Therapeutical Society, May 4, 1906.

stenosis of the hepatic or of the common duct; 5, hydatid disease of the liver pressing on or discharging into the bile ducts; 6, gummata implicating the ducts; 7, chronic catarrh of the ducts; 8, cancer of the common duct; 9, cancer of the head of the pancreas; 10, cancer of the liver associated with jaundice, either due to catarrh or pressure; 11, cirrhosis of the liver; and 12, other rare causes, such as aneurysm of the hepatic artery or of the aorta, and other tumors of the liver, gallbladder, pylorus, kidney, or intestines pressing on or including the common duct.

He says that all of these are remediable by operative interference excepting 6 and 7—gummata implicating the ducts and chronic catarrh of the ducts. A gumma causing jaundice by pressure on the ducts may, however, necessitate surgical interference if it threatens to continue the condition for any length of time. The object should be to get rid of the jaundice before alterations in the kidneys and other organs are so far advanced that there is little chance of their recovery from disease, set up by the attempt to eliminate the absorbed bile. It may therefore be better in the presence of a gumma involving the ducts to drain the gallbladder while waiting for the absorption of the tumor by the exhibition of the antileutic treatment. In chronic catarrh of the ducts it may also be best to attempt relief by operation. If the jaundice is not relieved by prompt medical treatment, drainage of the gallbladder, giving rest in great measure to the inflamed and swollen ducts, will allow of their more rapid recovery and the reestablishment of a natural passage for the escape of the bile.

There is another condition which is not included in Robson's tabulation, and which to my mind is a direct result of the chronic catarrh of the gallducts; that is an inspissation of the bile filling the common duct and sometimes the gallbladder, and even the hepatic ducts for a considerable distance into the liver itself, with a thick, pasty, dark bile. This is about the consistency of soft putty, and offers a complete obstruction to the natural escape of the bile. Medical treatment can be of little avail in removing this, while the results of operative treatment are so prompt and offer so little danger that it should be undertaken early. I have seen this condition a number of times, but a single case will answer as an illustration.

A woman, fifty-four years of age, was admitted into the Randall's Island Hospital some years ago with a marked case of jaundice. She had had no signs of cholelithiasis, but gave a history of having had a number of attacks of so called gastritis which of late years had been associated with jaundice. The diagnosis was a duodenitis with secondary catarrhal inflammation of the gallducts. While her gastric symptoms improved, the jaundice continued to deepen, and she soon became so markedly discolored that she might almost pass for a dark mulatto. She was finally transferred to the surgical service for operation, and I found a complete occlusion of the common duct with this pasty material. It had filled the gallbladder to its utmost capacity, and before there was any flow of bile it was necessary to pass a spoon for fully two and a half inches along the hepatic duct, removing a large quantity of this material. Then came a flow of bile, and drainage through the gallbladder was instituted; the result was a rapid and uninterrupted recovery. There were no gallstones in this case.

This condition may be present either with or without gallstones. The jaundice in these conditions is often very characteristic of malignancy. The onset is similar to the jaundice of a simple catarrh of the gallducts, followed, perhaps, by inflammatory symptoms but with a rapid increase in the discoloration of the skin and of the mucous membranes, and without the usual remissions that are found in the simple catarrh or in obstruction from gallstones. It may therefore very readily be mistaken for a jaundice due to a growth along the course of the ducts.

Two conditions must be considered most carefully in the surgical treatment of jaundice: First, the changes in the blood; and second, the condition of the kidneys.

The effect of jaundice on the blood has been studied by many observers, but still we have no definite understanding of just what alterations are produced. The most practical point, and one that is generally recognized, is the change in the coagulability. From the surgical view point this is the most serious consideration. Whether it is due to some change in the fibrin ferment, or to alterations in the red corpuscles, or to the presence of the bile salts and pigments in the blood, we do not know; but that it occurs, and that it is one of the most dreaded conditions that surgery has to contend with in operating on the liver and bile ducts is a fact.

For years in the course of my clinics at the New York Postgraduate Medical School and Hospital I have been referring to this condition as a pseudo-hæmophilia. In these cases it may even require thirteen and one-half minutes for coagulation to take place. Osler puts the outside limit at twelve minutes, while the normal would be from three and one-half to four minutes. Within the past few months I have had a case in the Postgraduate Hospital where thirteen and one-half minutes was required. Murchison, Murphy, and many others have called attention to this fact. In this condition we may have hæmorrhages from the mouth, nose, bronchi, kidneys, intestines, or they may even be subcutaneous. An uncontrollable oozing may be kept up from the wound until the patient becomes exsanguinated. Mayo Robson advises the free use of calcium chlorid in these cases. He gives thirty grains by mouth before operation, and afterwards sixty grains by rectum three times a day for several days. Gelatin, adrenalin, and many other drugs, including ovarian extracts, have been tried, to increase the coagulability to the limit of surgical safety. I cannot say that the results of the drug treatment in these cases, in my hands, have been at all satisfactory. As a general rule, the hæmorrhages do not occur immediately after the operation, but begin in from one to four days. As I write, I recall very distinctly the case of a little girl who had a congenital occlusion of the common duct, and who was brought into the babies' wards for treatment of the persistent jaundice. Examination revealed the enlarged liver and a tumor which was evidently the engorged gallbladder. In spite of the danger from hæmorrhage, I performed a cholecystduodenostomy. For two or three days everything went well, and then she began to bleed from the cutaneous wound, and literally bled to death in spite of everything we could do. I have had the same experience many

times, and have sometimes felt that I would never again operate upon any case where jaundice had been persistent for any length of time.

Within a few months I have had another case which illustrates the same point.

A man of forty years who had had jaundice of varying degrees of severity for over a year. He had never been entirely free from the evidences of bile absorption during this time; had never had pain until two weeks before I saw him, when he had all of the symptoms of gallstone colic. He was referred to me by Dr. R. N. W. K. Horner, of this city. Because I feared that he might bleed to death, I kept him in the hospital for some time and gave him nineteen grains of calcium chlorid three times a day. It was in this case that the coagulation of the blood took thirteen and a half minutes. At the time of operation the wound was perfectly dry and satisfactory. The gallbladder had contracted until it was no larger than the distal phalanx of my little finger, but in the ampulla of Vater I could distinctly make out a large gallstone which had been the cause of the complete obstruction of the common duct. It was impossible to push this over into the duodenum, and it seemed much better to do a choledochotomy than to attempt to reach it through the duodenum, which was bound down so firmly by adhesions. He did unusually well for four or five days, when in consequence of a sudden and severe colic due to gas in the intestine, he made a quick movement and tore the deep portions of the wound apart. The skin did not separate. Blood soon began to ooze out of the drainage opening, and he was seen and dressed by my adjunct, Dr. E. W. Peterson. Within an hour the dressings were again saturated with blood. I immediately laid open the skin wound and found that he was bleeding from innumerable capillaries along the borders of the separated edges. Mattress sutures and clamps were used, adrenalin given hypodermatically, and everything possible was done to control the hæmorrhage, but he bled to death in twelve hours.

In all cases of prolonged jaundice we have also to contend with marked and generally increasing anæmia; therefore it is important, at the same time we are determining the coagulability of the blood, to determine the percentage of hæmoglobin, and the differential count should be made. Surgical operations of any kind undertaken with a hæmoglobin percentage below thirty are exceedingly serious; and if it has fallen to twenty, a fatal result is almost certain. The value of the blood examination, too, as in all inflammatory or suppurative lesions of the present time, must not be overlooked, and a leucocytosis with a high polymorphomuclear lyphocyte percentage indicates suppurative changes; and if the percentage of these lymphocytes continues to increase, immediate operation should be taken into consideration. Increasing experience with the blood examination along these lines, in suspected cases of suppuration, leads me to place great reliance upon them.

Changes in the kidneys are important, more in determining the anæsthetic to be employed and in influencing the prognosis. Naturally, when we have added to the toxæmia of the jaundice the toxæmia of nephritis, the patient is in a very bad condition to resist any surgical interference. As the nephritis in most of these cases is secondary to and induced by the extra strain thrown upon the kidneys by the elimination of bile, it stands as a practical rule which should be employed in every case, that cases of jaundice which may be obstructive in any way should be referred to the surgeon before the secondary lesion is established. Subjects of prolonged jaundice frequently take anæsthetics badly; respiratory arrest occurs from time to time, necessitating the cessation of operative work to establish artificial respiration. This influence upon the nerve centres may affect not only the respiratory but also the cardiac, giving a sudden arrest of the heart and death from that cause, or causing an arrest of the function of the kidneys and death from the suppression of the urine. All of these conditions have occurred in the course of my operative work in cases of this character, and I am not at all surprised that one of our prominent consulting physicians should take the ground that the dangers are too great in cases of jaundice for him to recommend operative interference.

It is not the surgeon's fault that the percentage of deaths in these cases is so high. The fault lies rather with the medical practitioner who treats the case until the complications are established. The surgeon is then called only at the last moment, and operates when the chances are all against recovery. Patients with jaundice that come to the operating table early, before they are suffering from general toxæmia, do well and usually recover promptly.

We must also remember that in all probability the chronic irritation of gallstones may be the potent cause for the development of cancer of the gallbladder, gallducts, duodenum, pylorus, or pancreas. Many of the conditions referrable to the stomach and treated as chronic gastric affections are also due to a spasm of the gallbladder and ducts, either with or without a chronic empyema. Exploratory operation would undoubtedly reveal the cause of many of these gastric conditions. These last statements are well illustrated by a case that I operated in about a year ago.

The patient was a man, fifty-eight years of age. There was a history of cancer in the family. He had for years been treated by his family physician for indigestion, and occasionally he had had attacks of pain coming on in the night, which were quickly relieved by a single dose of morphine. Finally, he became jaundiced and began to emaciate rapidly. I saw him three months after the onset of the jaundice, obtained the history of attacks of pain, elicited the tenderness above the umbilicus, and palpated the gallbladder, observing the gallstone click. The diagnosis was clear so far as the gallstones were concerned, but did not explain the emaciation and the long, persistent jaundice. A gallstone in the common duct or in the ampulla of Vater would account for the latter, but hardly for the former condition. An examination of the fæces revealed quantities of free fat, and from his general appearance and the history I could not help concluding that there was probably a cancerous condition of the head of the pancreas. His kidneys were badly damaged. At the operation nine large gallstones were removed from the gallbladder, but none were found in the common duct. The cancer of the pancreas was advanced. He died of uræmia on the fourth day after operation.

An early diagnosis and operation in this case, removing the gallstones, would have eliminated the chronic inflammatory condition, and in all probability prevented the development of the cancerous disease and of the nephritis which was almost certainly caused by the continued jaundice.

It is of great importance, if possible, to determine prior to the operation whether the condition is

due to remediable obstruction, or whether it is due to malignancy. Mayo Robson says in this connection that:

A painless onset of chronic jaundice must always give rise to the suspicion of either chronic catarrh dependent on cancer of the liver or the occlusion of the hepatic or common duct by a growth, and if this be associated with distension of the gallbladder and rapid loss of weight and strength, cancer of the pancreas will probably be found. On the other hand, the history of pain in the upper abdomen followed within twenty-four or thirty-six hours by jaundice and preceded by so called spasms, either recently or at some remote period, is strongly suggestive of cholelithiasis. In the latter the jaundice will probably be less intense than in the former, and intermittent fever with chills and sweats will probably either be present or have been noticed at some stage. Enlarged liver is much more common in obstruction due to cancer than from gallstones, though it may be present in either. In cancer, nodules or irregular bosses may be discovered, and in gallstones, elongation of the right lobe, apt to be mistaken for distended gallbladder, can often be felt. In the early stages difficulties arise that time will clear up; for instance, the jaundice of gallstones increases or diminishes from time to time; whereas, the jaundice of obstruction due to growth steadily increases or tends to become absolute, especially in cancer of the bile duct or of the head of the pancreas. The element of time alone is of importance, for jaundice with malignant disease runs a very short course, whereas the jaundice of gallstones or some simple cause may go on for several years. It must not be forgotten that gallstones and cancer frequently coexist. In cancer of the gallbladder stones are nearly always present, and the combined disease may form a tumor before the onset, though some degree of jaundice usually supervenes early in the disease. Fat in the fæces, and glycosuria, with very rapid wasting, are suggestive of pancreatic trouble. Aguelike symptoms more frequently accompany stones in the common duct than malignant disease of the ducts or of the head of the pancreas.

The pain, too, is different. In gallstones, it is more to the right side, running upward and often complained of under the shoulder blade. When the head of the pancreas is involved, it is usually in the back, is very constant, and is described as gnawing in character; and is localized at about the eleventh or twelfth dorsal vertebra. "After the abdomen is opened, adhesions in the neighborhood of the gallbladder and a contracted bladder are strongly suggestive of stones." Ascites, especially if slightly blood tinged, is nearly always, unless cirrhosis be present, indicative of malignancy. "If no gallstones be found, but the head of the pancreas be swollen and harder than normal, the surgeon should not too hastily condemn the patient as the subject of cancer, for the swelling may be a chronic pancreatitis, though if the glands be fused together and infiltrating the neighboring tissue the outlook is far from good."

One exception should be noted to the statement that a distended gallbladder and continuous jaundice are probably due to malignant disease of the gallducts or of the head of the pancreas. A large gallstone located in the ampulla of Vater, with contraction of the duct wall upon it, may produce these same symptoms, as in the case already reported. On the other hand, however, a large stone in the ampulla of Vater, while producing a chronic jaundice, may be accompanied with a contracted gallbladder, and allow of more or less intermission in the symptoms, which would eliminate the probabilities of malignant disease, the stone forming practically a ball valve. Such a case I have operated in within the past few weeks.

This was in a man, fifty-four years of age, who began to have pain two years ago last December, recurring about every six or eight months. At this time he passed a number of gallstones. He had had more or less continuous jaundice during the two years, never perfectly free from it. Within the past year he had had several attacks of very severe pain, accompanied with a rise of temperature to 104°, chills, vomiting and all the symptoms of an acute suppurative process. The history showed that these attacks would last from one to two or three days, and the upper part of the abdomen was exquisitely tender. He would then have an attack of diarrhœa in which there was a large quantity of mucus and bile, with relief of all the symptoms and a decrease in the jaundice. The diagnosis was made of an empyema of the gallbladder from gallstone obstruction. At operation the whole liver and gallbladder area were covered with dense adhesions, showing a very general peritoneal involvement. The adhesions were liberated over the gallbladder and gallducts. A very much thickened and contracted gallbladder was found, and a tremendously distended common duct, with a large gallstone in the ampulla of Vater. A choledochotomy was performed, and a second gallstone removed from the duct by pressing it down into the incision, and a third one was extracted from the gallbladder upon which a cholecystectomy was performed. This patient illustrates another point to which I have already referred. During the operation we were several times obliged to suspend work because of the cessation of respiration. The anæsthetic, ether, was borne very badly, and there was constant fear of a respiratory paralysis. The examination of his urine prior to the operation showed that apparently his kidneys were in perfectly normal condition, and yet the patient died of suppression of urine on the day following the operation—in all probability of a central paralysis affecting the kidneys, due to toxæmia from both the prolonged jaundice and the anæsthetic.

Mayo Robson also makes the assertion that "a rigid right rectus and tenderness one inch above and to the right of the umbilicus is as suggestive of gallstone trouble as are the same manifestations, at McBurney's point, of appendicitis." Mayo's classification is practically the same as Mayo Robson's.

Stones in the gallbladder do not produce jaundice, even a stone lodged in the cystic duct (unless it is very large and pressed upward so as to interfere with the lumen of the common duct) will not produce jaundice.

There is one other sign that I have used extensively for years past in determining the presence of gallstones in the gallbladder. Outline the free border of the liver and locate the notch. As a rule this will be found at or near the right linea semilunaris. Place the palm of the hand on the abdominal wall, with the tips of the fingers pointing toward the patient's head. Then gently press downward and upward, pushing the abdominal wall under the free border of the liver, so that the tips of the fingers are below the liver border. Then get the patient to laugh or cough. If the galibladder is not contracted it will strike against the tips of the fingers, and if there are many gallstones present it is more than likely that we will be able to feel the clicking of the stones against one another. The

rapid action of the diaphragm in laughing is much better than a single cough, and as a general rule the patient can be persuaded, unless there is great tenderness in this region, to laugh at the right moment. We must remember, however, that gallstones may be present, even in very large numbers, in the gallbladder, without the patient ever having had an attack of jaundice or of gallstone colic.

Such a case came under my observation years ago in a woman then fifty-one years of age, who applied for treatment in consequence of the increase in the size of her abdomen. An immense tumor was found occupying the right side of the abdomen and extending downward to the pelvis. Vaginal examination showed that it was well down in the pelvic region, and as there was no history of jaundice or of gallstone disturbance, no pasty stools, and nothing to indicate that she had ever had any obstruction of the gallducts, and as the mass seemed to be in the lower part of the abdomen, a diagnosis of right ovarian cyst was made. At the operation the mass was discovered to be an immense gallbladder from which some three hundred and twelve stones were removed, one stone having completely blocked the cystic duct, and the gallbladder itself being filled with a quart and a half of light colored fluid. In this case cholecystectomy was performed, and the patient made a perfect recovery.

One other condition that must be considered as a cause of obstruction to the ducts and of inflammatory conditions about the liver generally, is in the acute peritonitis which sometimes complicates dysentery. With the recognition of the fact that amœbic dysentery is much more common in this country than was formerly supposed, we can probably get an explanation for some of the inflammatory conditions about the large intestine. I have had an opportunity of examining several of these cases, and found that the adhesions extended across the liver, usually on both surfaces, and that often there was more or less pus included in the shut-off portions of the peritoneum. There is also in this connection the possibility of abscess of the liver from the same cause—i. e., infection of the gallbladder region with the amœba.

We must now consider the intrahepatic conditions. Leaving out the malignancies, which are nearly always metastatic when they appear in the liver itself and in which operative interference is out of the question, gumma of the liver and the benign tumors generally may be operated upon successfully. Abscesses of the liver, including those of amœbic origin, should be operated upon and drained. Ranshohoff and Rome have removed tuberculomata from the liver—the former's patient dying on the sixth day and the latter's recovering. Haubold has also removed a gumma from a woman of twenty-six, with recovery; and in cases of hepatitis or of jaundice produced by inflammatory changes in the acini, where the condition is not promptly relieved by medical treatment, the suggestion made by the late W. E. B. Davis, of Birmingham, of doing a hepatotomy, is practicable and comparatively safe. This will allow of considerable escape of bile from the denuded surfaces of the liver, and, relieving the pressure on the bile radicals, allows of their recession and the restoration of their normal function. The great fear in this method of procedure is hæmorrhage, but I think surgeons who have had considerable experience in liver work have to a large degree lost their dread of uncontrollable hæmmorrhage from that organ. I have myself performed hepatotomy twice, have cut into the liver intentionally for other conditions several times, and have removed a portion of the right lobe which was dragged down and interfered with the proper performance of a cholecystectomy, with success.

Finally, the question of cirrhosis is one in which surgical relief may be possible. The Talma-Morrison-Drummond operation is well worth a trial in those cases of cirrhosis where the ascites is great and the patient is losing ground. It is remarkable how rapidly the anastomosis may be established between the omental vessels and the vessels of the abdominal wall. It has a distinct effect upon the ascites, sometimes completely controlling it. I have a case of cirrhosis of the liver in which I did this operation some seven or eight years ago upon a woman of thirty-five, who has remained perfectly well and free from gastric disturbance up to the present time.

Altogether, I have operated seven times in this condition—or eight times, if one considers a second operation performed upon the same patient, a case of atrophic cirrhosis from which I did not expect a favorable result. A large anastomosis of the omentum into the abdominal wall was made, and tappings for the ascites were decreased, and his other symptoms improved. About a year later he begged to have a further operation performed in the hope that a still further anastomosis might prove curative. I allowed myself to be persuaded to undertake the second operation. The veins of the abdominal wall were tremendous in size; the adhesions between the omentum and the abdomen were firm and were not interfered with; the liver had increased in size about a third over the time of the previous operation. I increased the amount of omentum fixed in the abdominal wall and closed the wound. Unfortunately, the patient died of uræmia, the result of chronic nephritis.

The statistics of this operation at the clinic in Königsberg have been carefully collected by Bunge. He claims that twenty-six to thirty per cent. are cured. In fifty per cent. there was no improvement. He found that taking the published statistics of this operation this percentage of thirty per cent. is borne out by the results of other operators, while fourteen per cent. show only a temporary improvement, and fifty-six per cent. are negative.

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THE RATIONAL TREATMENT OF VISCERAL PTOSES.*

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In this paper are offered briefly a few facts and opinions, with a résumé of my own experience in the treatment of the visceral ptoses. It may serve as a foreword for a later and fuller presentation of the subject.

A review of the literature tempts me to bring together significant points in primary causation and later relationships of visceral ptoses to developmental defects and their bearings upon a large array of fundamental derangements of

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childhood and later life. Curability depends on a true appreciation of the kind and quality of the starting points. The central defects lie in structural peculiarities of the embryo carried on through the period of infancy and childhood, aggravated by reactions due to functional derangements and later by traumata, strains, and the unwholesome effects of what may be regarded as inevitable conditions and reactions.

Protracted exhaustive states, especially where these depend, as is usual, upon inherent weakness or developmental errors, are aggravated by functional disorders. A host of disabling maladies are either the result of these common ætiological factors or are reactionary to them. The purpose of the clinician should be to aim at perfection, not to be content with mere correction of derangements. The subject under discussion is an illustrative instance to emphasize the principle, so often enunciated by me, that we should reach back in our efforts to the original defect, the correction of which conserves constitutional depravity from its earliest divergence, and we should amplify the inherent organic resources to the uttermost.

A study of recorded facts show that in early life a tendency is often exhibited to various visceral ptoses. J. A. Abt (*The Journal of the American Medical Association*, April 27, 1901) cites a number of authorities (Jules Comby, Steiner, Abraham Jacobi, W. R. Stewart, Richard Frey, Senator, Glenard, Walkow and Delitzein, Ebstein and Dietl) to show that in the ætiology of movable kidneys in children we must look to a congenital origin, predisposition, emphasized later by traumata. Also that the proportion in the sexes is the same as in older persons: overwhelming in favor of girls.

Hemmeter (*International Medical Magazine*, March, 1902) inclines with Rosengart, Langenhans, and Küttner to favor the congenital view of ætiology. He says Landau and Kusster deny this. His cooperation with the anatomist, Professor J. Holmes Smith, in a study of the viscera of infants predisposes him to favor the theory of Rosengart that enteroptosis is a pathological reversion of the location of the abdominal organs to an embryonic state (*Zeitschrift für diätetische und physische Therapie*, i).

Fenton B. Turck, in an article on Enteroptosis (*International Medical Magazine*, March, 1902), presents a résumé of views on ætiology, quoting twenty-four authors all showing the tendency to fix the primary fault upon congenital defects. Meinert (*Volkmann's Sammlungen*, Nos. 115, *et seq.*) says: "In the course of time through inheritance, deformity of the chest and visceral ptoses may become a peculiarity of the race." Stiller (*Archiv für Verdauungskunde*, 1896) says: "The symptoms of enteroptosis are not due in the main to anatomical displacements of the individual. Rosengart (*Zeitschrift für diätetische und physiche Therapie*, i) refers to the fact that the fœtal position of the abdominal viscera remains the same throughout life. Failure of these to change to the positions of the adult may be considered a cause of ptoses in most cases. Kussmaul (*Volkmann's Sammlungen*, No. 181) thinks there is no doubt but that in visceral ptoses there is a reversion back to the embryological state, secondary, not primary.

E. M. Corner (*International Clinics*, ii, 1905) has shown that herniæ in children are due to two great factors, congenital malformation and gastrointestinal fermentation. These seem to share a common ætiological factor with the visceral ptoses.

W. B. de Garmo (*Medical Record*, February 13, 1904) states that the principal predisposing causes of hernia in infants is defective development. Harris's contention (*Transactions of the American Surgical Association*, 1901, p. 457) that the cause of movable kidney is a peculiar body form, diminution in capacity, vital depression, and a constricted outlet of zones formed above the centre of the organ, hence concentrated motor acts crowds it down by compressor action of the lower ribs, gives strength to the view that we have to do with a vitiated organism. Stumdorf (*Medical Record*, January 13, 1906) maintains that: "Dislocated kidneys will invariably be found associated with characteristic skeletal stigmata, thus the possessor of a prolapsed kidney probably had club foot or has acquired flat foot, shows a tendency to or aggravation of existing herniæ, spinal curvatures, proneness to articular disorders, dislocations, and fractures, uterine and ovarian displacements, and prolapse without apparent intrinsic cause."

Pathological causes of movable kidney include factors that bring about increase in the weight of the kidney, such as sarcoma, carcinoma, hydronephrosis, a large calculus, or aneurysm of the renal artery, especially if associated with a false renal hæmatoma, causing an unusual tugging at the not over strong fibrous support of the kidney. (Penn Gaskell Skillern, *American Medicine*, March 17, 1906). In view of the many similar testimonies to the potency of early constitutional causes it seems idle to multiply surmises as the instrumental causes. Almost any kind and degree of trauma or functional derangement may induce visceral ptoses in one so predisposed.

All this is cited, and much more could be offered, to show that we should not fail to start at the beginning, the *fons et origo mali*, and not waste time in correcting only obvious derangements. Childhood is the time to initiate measures whenever possible. Closer observation then would prevent much after damage.

The problem in treatment is to rectify at the point of origin, to readjust the visceral displacements by repairing the central defect. After this has been done if there then remains notable local defects, such as profound dilatation, or sagging of an organ, or supporting structure, it is time enough to interfere surgically or to employ the habitual use of mechanical supports, corsets, pads, belts, etc.

We owe gratitude to the surgeons for many important observations, efficacious procedures, life saving operations. So heartily and frankly do we testify to this truth that they are inclined to plume themselves as being especially ordained to assume responsibility in a large, increasing, part of those fields which we have felt to be right-

ly our own. It is true, we internists have repeatedly failed to accurately recognize, estimate, or cure, conditions which are made plain enough when the obscuring skin and overlying tissues are removed. It does not follow that we shall fail in the majority of difficult conditions because most of these are altogether beyond the scope of surgical mechanics. To be sure, it is a commendable, a practical measure, to boldly snatch away the overshadowing structures and seize the dubious portion in the hand and, if offending, cast it away. "Mr. Punch, what would you do if the man was too long for the coffin?" "Double him up, sir." This achieves economy of space and time, but is not to be always recommended for excellent reasons.

In the treatment of those disorders, many of them painful and disabling, resulting from loss of tone in the supporting structures of important organs, we see far more in literature nowadays of surgical procedures. Ventral fixation of the uterus, stitching of the kidney, snipping out portions of the hollow viscera which have become prolapsed or dilated, also various devices, almost purely mechanical, to make old bottles parade as fit to contain new wine, are reported daily. Little is said of repairing these tissues, living but flaccid, asthenic from central constitutional defect and reinforcing those directly at fault. It is true, general measures are advised, tonics, rest, change of scene, even *massage* and general exercises, but not specifically or in sufficient detail. It was my privilege to have my attention directed to the ptoses a quarter century ago and the paramount efficacy of restoring the elasticity, vigor, and function of the adynamic structures of the torso. Each year has revealed better methods of accomplishing this. Those who come later will be equally or more fortunate, until it is reasonable to expect, we shall be fully able to cope with most of these problems without recourse to the knife. Unfortunately the case records of slow steady educational treatment make monotonous reading compared with the graphic, tangible accounts of new and clever surgical procedures, illuminated by all the modern resources of illustration.

Let us bring before our consciousness the indubitable fact too often lost sight of, that all operative invasion of the abdominal parietes is a serious matter, not only directly, but remotely. It will be admitted by most surgeons themselves that it is always desirable to avoid operation if equal results can be secured by rehabilitating the inherent forces. My opinion, based upon a long and full experience, is positive that displacements and ptoses of the viscera can, in nearly all instances, be restored. Along with this also marked increments in vigor are attained by the means employed, to say nothing of the retroactive benefits, which directly follow.

Glénard, to whom we owe most for directing our attention to the ptoses, has recently (*Bulletin de l'Académie de médecine*, Paris, lxx, Nos. 5 and 6) describes phrenoptosis or downward displacement of the diaphragm which he shows is responsible for cardioptosis. There is, in some, a general tendency to ptoses of which movable heart is an episode. Enteroptosis is due to nutritional faults of hepatic origin. The same causes which induce liver affections preside over their origin. The malady, he says, is the product of five morbid groups; dyspepsias, neuropathies, liver disorders, nutritional disorders, and a fifth group which includes movable kidneys, movable liver, over movable spleen, and uterus. He regards enteroptosis as the cause of one third of all the dyspepsias and neuropathies in women, in whom eighty per cent. of all these conditions are found. He believes them to be readily curable if properly recognized and treated, but if not they induce much trouble. His method is to apply a sustaining corset.

H. P. Hawkins (*British Medical Journal*, January 13, 1906) calls attention to "Enterosposm and its mimicry of appendicitis." He finds pressure will sometimes relieve in slight cases. I have repeatedly demonstrated that pressure over or near the lower dorsal and upper lumbar vertebræ will promptly relieve various forms of colic, some cases so intense as to have lasted for months. The use of continued finger pressure often cures in a few days.

Delbet (*La Semaine médicale*, Paris, xxv, No. 47) describes a number of patients complaining of disturbances in the region of the appendix in whom the trouble proved to be ptoses of the cæcum only. In them the appendix had been removed, but the disturbances persisted. The trouble is essentially generalized paresis of the intestines.

H. A. MacCollum (*British Medical Journal*, February 18, 1905) makes wise remarks on the treatment of the visceroptoses emphasizing the value of systematic repair. He says: "Massage helps the patient to get control of the lower neurones and of the upper neurones."

I am struck with the elaborateness of surmises, theories, apparently logical conclusions as to many points in the literature with singularly inexact recommendations as to treatment. Particularly lacking in definiteness is the reference to the kind, quality, and amount of regulated movements and massage.

The ætiological factors underlying the visceral ptoses, particularly dilatation and motor insufficiency, depend in large part on lessened vasoconstrictor tone. From this there follows passive congestion of the organs affected and the adjacent structures. These phenomena lead to infiltration in the structures of the organs and those concerned in their support. A loss of viscero-motor tone is thus induced, which leads to relaxation of the viscus or viscera, and this again is accompanied by a corresponding relaxation of the ligaments and tissues which afford normal support. For example, in gastroptosis there are nutritive derangements in that portion of the cord adjacent to the region from the fourth to the ninth dorsal vertebræ. In this region are placed the cell bodies which control the viscero-motor and vasoconstrictor activities of the stomach and its supporting structures. So also of the other viscera, according to the distribution from their viscero-motor and vasoconstrictor sub-

sidiary centres. If these centres in the corresponding portions of the cord be insufficiently supplied with normal blood, it transpires that those cell bodies are relatively starved and become thereby incapable of performing their normal functions. This is equally true of those tissues concerned in support, such as the abdominal muscles. These conditions of nutritive depravity lead inevitably to losses of tone in the muscular coats of the affected viscus, hence dilatation ensues. Consequent upon the loss of vasoconstrictor powers, there follows passive congestion in the coats of the visceral bloodvessels, deficient nutrition of the parenchyma of the viscus of the adjacent parts, relaxation of supporting structures, hence ptoses or dropping down of that particular organ most affected. Similarly of other organs than the stomach other centres are thus affected.

Ptoses, displacements of viscera usually downward, cut a large figure in causing or contributing to a number of ailments, not only in adults, but in the young. Along with these sometimes occur dilatations, contractions, stenoses of the same, or adjoining structures. Light is being shed on these of late due probably more to the exact observations of surgeons in their now frequent explorations than to that of internists. Certainly many of these conditions escape attention of the physician who ought to know the symptoms, or at least keep them more fully in mind. The phenomena are, it is true, usually vague and only to be determined in connection with other data, but the real reason they escape detection is that frequent omission of thoroughness, we all commit, if we fail to strip the patient and examine manually. It seems to me almost an axiom that our full duty by a patient is not discharged, until we have manipulated and estimated the character and condition of the tissues, certainly of the abdominal viscera.

Among the most influential factors in aggravating the ptoses are dyspepsias, intestinal fermentations, and putrefactions. These must be modified promptly and persistently. In achieving this we can only mention measures. First in importance is to acquire the habit of chewing thoroughly for a complete mastication and insalivation. The rules of Horace Fletcher should be observed, viz., to reduce the food to a cream and permit it to be swallowed only when it can no longer be retained in the mouth; to take no fluid while food is in the mouth; to take no more food in the mouth till one bolus be disposed of. Thus, a normality of taste will be acquired and selection become normal, choice be unconsciously wiser, less variety will be needed, less pungent articles desired, in short, a greater simplicity and sanity of taste. Certain articles are found to ferment, e. g., sugars. They are not objectionable if retained in the mouth till the action of saliva changes their chemistry. Over much proteids should be avoided. Metchnikoff demonstrates that the action of the bacillus lactis neutralizes putrefaction, hence clean acid milk, buttermilk, Keffir, youghourt, bonny clabber, etc., is of much value, the use of which limits the practically inevitable intestinal putrefactions. My experience fully sustains his contention.

Of medicines alkalies before meals are proverbially valuable, especially one dose at bedtime, if gastric acidity be a feature; so a dose of sodium phosphate on waking, for a week, or more at a time; occasionally calomel in small repeated doses is magical, the best "intestinal antiseptic"; also now and then a thorough cleansing by castor oil. After or between meals a half ounce of lime water acts happily for overcoming eructations. The more physiological use of hydrochloric acid is sometimes best, taken in two doses, one in the middle of the meal, the second at the end, to meet the "acid tide."

In the ptoses we have to do with a general disorder, hence all operations are of only the most incomplete advantage.

The most potent agent in overcoming the anatomical defects of the ptoses is to so tone up the muscles of the torso that they shall not only reacquire their aforetime vigor, but become developed toward perfection. They should be made to reach the highest grade of efficiency which the inherent resources of the individual is capable of attaining. They should become not only what they were, at their best, but as good as they can be made. No muscles in the human body are so neglected as those of the diaphragm, of the external abdominal muscles, and those involved in respiration. Systematic breathing exercises, even though they be clumsily and partially employed, produce gratifying results. When these are consistently taught, and faithfully practiced, this measure alone will establish a degree of invigoration of the whole economy which will satisfy the most exacting. The patient should first learn to draw the abdomen forcefully and deliberately inward and upward, next to combine this forceful indrawing of the abdomen with the act of expiration. This again should be combined with other simple muscle tensions, such as flexion and extensions of the wrist, of the ankle, of the shoulder girdle, etc. All acts should be a complex of respiratory, especially expiratory, emphasis plus a simple extension or flexion of a limb or portion of a limb.[1] Along with this should be practiced elasticizing of the flexures, the joints, especially the hips, the pelvis, the scapular muscles, and torsion movements, rotation, etc.

In diagnosis of enteroptosis the older methods of inspection palpation, auscultation, auscultatory percussion are inaccurate; those by artificial distention with gas, transillumination, electrodiaphane, gyermele, etc., are relatively unsafe. The most accurate, perhaps the only really exact method, is Röntgenography. Hults's method of taking two views, one the patient lying on the stomach, and a second one in the standing or sitting position, gives the best results so far. (See *Transactions of the American Röntgen Ray Society*, 1905.)

A large number of distressing and disabling symptoms are recognized as proceeding from the ptoses, some of which are stated correctly and others overdrawn. The general practitioner has need to keep these in mind and learn with all the exactness possible. Not only do we need to know

[1] Recently a most ingenious method of physical education has been taught by Mr. Allen Lester Fowler. It combines an expiratory effort with simple tension. This has already effected some excellent results for me.

the position, range, etc., of the organs, but we wish to estimate their motor efficiency. This can be done by permiting bismuth to remain in the stomach, and to observe when it becomes emptied. This, according to Boas, is accomplished of the food in five or seven hours, so Hults finds it with bismuth (*op. cit.*). If it takes longer than that, insufficiency is shown. When it has reached the colon we secure additional important information on motor power.

Two factors enter into this problem always: (1) The degree of constitutional weakness, inherited or acquired; and (2) of the organic derangement. Often there are no sensory phenomena, so long at least as the general condition of the patient remains good (H. A. MacCallum, *British Medical Journal*, February 18, 1905). A large and various train of symptoms, ordinarily referred to functional derangement, may give direct evidence of the form of tissue laxity, with secondary disorders which arise in, or are fused with, organic ptoses. The patient is most comfortable lying down, is miserable, depressed, weary, unable to think or form decisions, has dragging sensations, the digestion is poor, the stomach burns, he may vomit without relief, has no appetite, there occurs bloating, eructations, coated tongue will persist, irregularity of bowels, colic, epigastric, or other tendernesses. The abdominal wall is usually flabby, readily manipulated and palpated. Specific symptoms are usually evidences of the acute involvement of some particular organ.

Symptoms due to prolapsed kidney are characterized by: (a) Their acuteness; (b) frequent recurrence; and (c) rapid subsidence after the kidney is replaced (A. Ernest Gallant, *New York Medical Journal*, April 29, 1905). Dietl's crises can be recognized by any one; they come on without warning, with severe headache, nausea, vomiting, pain, and unilateral swelling along the loin, or a general abdominal swelling, a sense of suffocation, an irresistible desire to loosen or remove all clothing and to lie down, followed in a short time by relief and freedom from pain.

Hydronephrosis is manifested by retention of urine soon after rising, along with rapidly increasing soreness and distention along the back and loin becoming, "maddening need" to loosen clothing and lie down. On getting up again there frequently is imperative or continuous urination. Nausea is not common, and the attacks become less frequent. Jaundice, due to traction of prolapsed kidney on the cystic or common duct (Treves) occurs in those of lax flabby bellies, coming on suddenly with pain.

Obviously posture will relieve many of these discomforts, but is only palliative, or if partly curative, is a tedious and objectionable form of therapeutics. Equally apparent is it that if the abdominal walls and adjacent supporting structures of the torso were of normal strength and tonic elasticity these phenomena would probably not arise at all, and would certainly soon cease to distress. To tie one organ up may relieve, but others are sympathetically affected and any may slip down, and the repair is at best but incomplete.

In my own considerable experience with all sorts of neurasthenics I have had abundant occasions to verify my beliefs as to the frequency of the ptoses, obvious or latent. As to the treatment of the ptoses it consists of repair of the underlying structural defects. These begin, and by no means end, in defects in the amounts and qualities of the nervous force possessed by the individual. The proper measures are plainly to reestablish the balance of nerve force, the inherent vigor, and proceed to increase this later by developmental measures whereby the patient often achieves unexpected general betterment. The local disorders disappear for good and all, they cannot return except by a return of general constitutional depravity. The measures employed are in general rest, isolation, nutritive enhancement, etc. (see *International Clinics*, ii, 1901).

Posture is important, genupectoral position, the inclined bed perhaps for a time, especially manipulations on the tissues of the back which certainly does enhance viscero-motor tone reflexly through the segmental centres, massage of the abdomen, intelligently directed or applied by the physician himself, above all specific, definitely directed voluntary movements, educative in character, of respiration, thoracic action, and especially of the abdominal muscles. These are best combined with simple tensions of groups of muscles along with forceful abdominal breathing, and finally general educational movements adapted to the special needs of the case, not the haphazard long range employment of professionals. The after cure may well be moderate athleticism, golf, rowing, canoeing, bowling, croquet, etc., etc.

It is true, we may need temporarily the help of belts or of peculiar corsets. The best one in my experience is that devised by Morris Longstreth by which he claims to cure a multitude of ailments not apparently consequental. This consists of a wide belt of strong saddle girthing attached to the corset, which must fit well down two inches or more below the external trochanters, and be adjusted so that the pressure is upward and inward. No peroneal bands are required. It should be of course applied or fastened while in the dorsal decubitus. A woman of good motor intelligence (very different from psychic intelligence) can learn to drag her abdominal contents upward while standing, and then adjust the corset. For men the belt can be used alone. After some months of suitable exercises, when the abdominal muscles have acquired full vigor, these devices can be discarded.

The efficiency of massage will be admitted by any one who will allow themselves to judge fairly of the facts. So few physicians know anything about it of their own knowledge or can judge of its quality by personal experience that to them it evidences only a partial utility. Some actually condemn it because of discouraging instances. Much of this dissatisfaction is because they will not themselves acquire the art and apply it.

For myself manipulations enabled me to get results otherwise unobtainable. Applied by the physician himself, in the ptoses, it takes only a few minutes and no great effort; not a bit more of either than many specialists devote constantly to minor procedures on eye, ear, throat, and skin. A few hints may help any to learn to use the dorsal manipulations. In five minutes all can be

performed necessary to secure reactions. The degree of pressure on the lumbar region need never be over two or three pounds, alternating distributed pressures. Follow these by lifting movements, applied to the abdominal organs, first out of the right iliac fossa toward the umbilicus, next the same in the left iliac fossa lifting up and out of the pelvis the sigmoid flexure and other structures by a few slow tractions toward the same point; finally, from the left side with the left hand push the contents of the abdomen from the symphysis pubis toward the thorax several times. Total time consumed is about four or five minutes. These procedures, repeated two or three times a week, will effect much, equal or more than by professional massage, which, though excellent, is too often needlessly exuberant. An office nurse is useful to do all this, but, unless one is constantly busy with one line of cases, unnecessary.

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SOME CLINICAL NOTES UPON A RECENT EPIDEMIC OF DENGUE FEVER.*

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(Published under the imprimatur of the American Society of Tropical Medicine.)

The city of Havana and neighboring towns suffered a well marked epidemic of dengue fever during the second half of the past year. From the middle of September to the first of December, I attended one hundred and fifty-four cases and saw many others in consultation; more than three fourths of this number occurred in one of the suburbs (Vedado), where I reside, and which is thickly populated by the foreign element, chiefly American and Spanish.

It is impossible to determine with any degree of accuracy, what was really the extent of this epidemic; it was not until later that the sanitary department declared the reporting of cases as obligatory, and the epidemic was then on the wane. From information obtained, I am convinced that the disease existed in a latent form ever since the earlier part of the year, and even at this date, (March, 1906), and as a result of the recent yellow fever scare, we occasionally meet cases of dengue which are reported as suspicious of yellow fever. The question in my mind to-day is, whether the disease may not be endemic here, assuming epidemic form at long intervals.

As it has been observed in other epidemics elsewhere, the one under consideration has practically exhausted itself without exhausting the material subject to infection; for, apart from the fact that it cannot be claimed that an attack of dengue confers positive immunity against subsequent infection, a large proportion of the population has not been affected by the epidemic.

During the period to which I refer, I have seen but few children attacked and no infants; or at least, the disease has not been recognized as such in the case of children less than five years of age. On two occasions, nursing mothers continued to suckle their infants throughout their attack of dengue, without causing any deleterious effect upon the little ones. One of these cases, a young American woman, kept up a fairly constant temperature of 40° C. (104° F.) during two days; nevertheless, the child, then three weeks old, was regularly put to the breast.

The degree of immunity conferred by an attack of dengue must be very slight or transitory. During this epidemic I saw four instances in which the disease reappeared upon the same individual, after an interval which excluded the possibility of their being relapses of the same infection; the periods between the two attacks varied from twenty to thirty-six days, and the second attacks were no less severe than the first; indeed, one of the cases to which I refer, after an interval of thirty days, presented most alarming symptoms the second time.

The mode of transmission is still a fruitful subject for speculation. Attempts have been made, by others, as well as myself, to infect individuals by the bites of mosquitoes, which had been previously applied to cases of dengue fever, at various intervals after sucking the presumably infected blood and employing several varieties of mosquitoes; according to reports, all efforts have been as unsuccessful as my own. This, notwithstanding the circumstantial evidence, is directly in favor of insect transmission, and I cannot but feel that mosquitoes are responsible for the extensive and rapid propagation of the disease, and futher, that the inability thus far to demonstrate this theory must be due to some fault in the technics, which we are unable as yet to recognize and rectify. Finlay for twenty years defended the same theory regarding yellow fever, before we were enabled to demonstrate it. This epidemic coincided with the presence of a veritable plague of *Culex fatigans,* which particularly invaded the part of the city (Vedado) to which I have referred.

Dengue fever spreads very much like yellow fever; from house to house; along the same side of a street; attacking more the members of a family than the transient visitors, who do not sleep under the same roof, etc. Unfortunately, this is not the only point of similarity between the two diseases.

The next feature of interest which I wish to note, before discussing some strictly clinical characters, as I have observed them, is the period of incubation. In the midst of the epidemic, after the infected foci have been multiplied to a considerable number, it becomes actually impossible to trace the source of infection in any given case, particularly if the individual has resided within the epidemic zone for a period of weeks, or been travelling from one place to another. Some of the cases observed have led me to believe that from three to seven days elapsed from the time of exposure to the earliest manifestation of the disease, but the following cases indicate a much shorter period of incubation.

Mr. and Mrs. S. and two boys, twelve and fourteen years of age, respectively, arrived from New York on October 11, 1905, landing at 9 a. m., and reaching the home of Mrs. M., where they were to stop, at about 10 a. m. Mrs. M. and her daughter had recovered from a fairly severe attack of dengue from which they had suffered two weeks before. No fumigation or

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other disinfection of the premises had been carried out. On the 13th of October I was called to see one of the S. boys, who had been ill since the night before (thirty-six hours after reaching the house). The following day, in the evening (fifty-six hours after arrival), the second boy became sick and both went through their attack with well marked symptoms of dengue. One week afterwards Mr. S. developed a mild case of dengue. Previous to the boys' invasion, they had not been out of the house for any purpose.

We have here evidence of an exceedingly short period of incubation, (thirty-six and fifty-six hours). In other cases I thought to have seen equally short duration, but none of so striking and evident a character as the two above cited.

Cephalalgia, rachialgia, and fever, constitute a symptomatic trilogy, which may be said to usher in the attack in every case; their respective intensity varies, the back and bone aches being the most trying and unbearable. Some hours after the above symptoms develop, with intense suffusion of the skin, thirst, etc., the eruption may be observed in eight cases out of ten.

It is not my purpose in this paper to review the complete symptomatolgy of dengue as it has been constantly met with in all the epidemics heretofore described, but to remark upon a few clinical features which, in my opinion, have been treated with undeserved disdain or entirely overlooked.

The first of these, is the eruption previously mentioned. At the second to fourth day, the erythematous-flush which may have been observed from the inception of the attack becomes changed into distinct eruption of a milliary maculopapular character, surrounding small irregular shaped areas of healthy skin, from one to three fourths of an inch in diameter, and which appear from a distance as pale blotches upon a reddish background. The eruption extends principally over the arms, breast, back and abdomen. It is not very apparent on the face, except sometimes about the forehead. In two cases the eruption was petechial in character, restricted to the wrists and hands, ankle and feet, extending to the palms and soles, respectively. In some cases the eruption lasts two or three days, perhaps four, but generally it remains plainly visible not more than forty-eight hours; in a preat many instances it appears only for a few hours, making it possible to be overlooked by the physician or nurse. In the earliest stage the rash is seen only at the bends of the elbows and knees, or about the wrists or neck.

I have tried to describe the eruption as it has been most frequently met with; it cannot be said that it presents exactly the same characters in every case; the patients' complexion and surface conditions, I believe, have direct influence in modifying them. In the case of a plethoric blonde German woman, the eruption was like that of scarlatina; face and body intensely red, and the skin œdematous, raised in patches and hot to the touch. In the African and his descendants, the eruption is most puzzling; fortunately the colored races seem to enjoy a marked degree of resistance against dengue infection. Desquamation often takes place during convalescence; usually furfuraceous; more rarely in strips.

Albuminuria in a slight degree has been found in almost every case, often from the second day of the disease, extending throughout the entire illness, and disappearing rapidly with defervescence. Exceptionally, the albumin in the urine has been in considerable quantity, precipitating by the heat and acid test, but rarely containing renal elements in the shape of casts or epithelium. The early appearance of albumin in dengue, when present, might be considered a differential sign, between this disease and yellow fever, apart from others, which need not be discussed here. It must be understood that very mild albuminuria has been met with in general; the other condition of actual nephritis serving as the exception to confirm the rule stated. Albuminuria in dengue has not been usually described, but the facts mentioned are certainly true regarding our recent experience. Perhaps, we have been more careful than is customary in the search for abnormal elements in the urine. At any rate, the records at the hospital for infectious diseases (Las Animas), where upwards of seventy cases have been observed, corroborate any statements made.

One more feature of the conditions met with demands our notice. After the first access of four or six days, a short period of a few days elapsed before the second access, or the latter never took place; but in either case patients were frequently left in a state of profound adynamia, extreme mental and nervous depression, which lasted from a few weeks to two or even three months, rendering the convalescents prone to sequelæ of varying degrees of intensity.

There can be no doubt in the minds of those who have closely followed the course of this epidemic that it was an indirect but none the less evident factor in predisposing in favor of other infections; in other words, that an attack of dengue left the individual a fit subject to acquire other severe or even fatal infections. Personally, I saw several cases of grippe, one of dysentery, and one of typhoid fever in persons who, it seems to me, would have better withstood these infections had it not been for a previous attack of dengue fever. Yet, the mortality was low. In a city whose population is estimated at 266,000 inhabitants, we have had but six or eight deaths directly attributable to dengue. One of these cases which I had occasion to see died of cerebral meningitis, the disease having begun and continued during the first week as a case of dengue; the meningeal symptoms then became marked, and the man died within a fortnight afterwards.

The diagnosis of dengue is not difficult when we know that an epidemic exists in the locality, but I know of no disease which may be so readily mistaken for yellow fever during the first forty-eight or seventy-two hours. The clinical picture (cephalalgia, backache, fever, and sometimes albuminuria), cannot be more like that of yellow fever. We cannot rely on the intensity of the symptoms, for aside from the fact that different individuals appear to have a most varying degree of sensibility, the pains, fever, and other signs do not present themselves at the same period nor in the same way in all cases. Of course, jaundice is not met with in dengue, but

we have autopsied a body in which we could appreciate no jaundice during life, and found the lesions of yellow fever. I think Faget's sign is a fairly constant differential index, for in dengue the tendency is for the pulse to correspond with the variation in the degree of temperature, although sometimes we meet a comparatively slow pulse as a result of the generally depressed condition noted. A most careful and painstaking examination of cases can only help to differentiate these diseases. It seems needless to say that when black vomit occurs, dengue can be excluded, but yet some cases of this disease show a slight tendency to bleed from the gums or nose, a fact recognized by all authorities who have made a study of dengue in the various epidemics (Report from Brisbane, *Journal of Tropical Medicine*, December 15, 1905).

When these facts are taken into consideration, can any one wonder that the first cases of yellow fever which occurred in Havana in October, 1905, during the height of the dengue epidemic, passed unnoticed?

INTERMITTENT PENTOSURIA AND GLYCOSURIA. REPORT OF A CASE.

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(From the Montefiore Home Laboratory.)

It is of great importance to the physician and patient when a substance is found in the urine which reduces Fehling's and Nylander's solutions. In the majority of cases the busy practitioner of medicine is satisfied with these two simple tests, or performs the fermentation test alone. If the metals in the first two were reduced the patient is then treated on the rules laid down for the treatment of diabetes, or carbohydrates are excluded when only the fermentation test has been performed with negative results. However, when a further insight is taken, and the experienced eye does not notice the changes that one would expect in diabetes, one's suspicion is aroused and a more thorough search is made as to the character of the substance responsible for the reduction. The majority of substances which may appear in the urine and reduce Fehling's and Nylander's solutions are chiefly of a carbohydrate nature, as well as the alkaline salts of uric acid, some aromatic oxyacids which appear in the urine of alkaptonurics and allantoin.

It will prove of help at this juncture to enumerate and systematize the carbohydrates in the urine, giving a few tests for the recognition of the most important members of this group as well as a differential table of tests between them and other substances with which they may be confused. All urinary carbohydrates contain the furfurol molecule (C_4H_3 O.COH). When this substance is split off it is capable of forming colored substances with certain reagents. When a carbohydrate substance is treated with concentrated H_2SO_4 a splitting of the molecule ensues with the formation of furfurol which gives characteristic color reactions with the following chemicals: Alphanaphthol, xylidin, thymol, resorcin, phloroglucine, orcin, etc. Some carbohydrates react with alphanaphthol, some with resorcin, others with phloroglucine. Of these some give absorption bands when examined with the spectroscope, others do not. It is this property which makes these tests so useful, and when properly carried out carry with them a strong point which helps in the final classing of the carbohydrate present in the urine. The normal urine as a rule contains traces of glucose, which when treated with H_2SO_4 and alphanaphthol, gives color reactions as well as an absorption band between D and E when examined with the spectroscope. This test is so sensitive that one drop of a 0,06 per cent. solution suffices to give the reaction. Some claim that even weaker solutions will give the reaction. It is important for the above tests that the reagents be chemically pure.

The carbohydrate substances so far found in normal urine in traces are: Animal gum, grape sugar, and isomaltose. The other members of this group which may occur as a result of physiological states, pathological conditions, or anomalies, are grape sugar or glucose (in appreciable quantities), fruit sugar or levulose, milk sugar or lactose, laiose, and isomaltose. Glycogen has also been found in the urine. Glycuronic acid is found in the urine under normal and pathological conditions after the intake of certain drugs combined with them or with other excrementitious substances. The pentoses ($C_5H_{10}O_5$), comprising arabinose, xylose, rhamnose, and ribose, are naturally found in abundance in the vegetable kingdom, such as plums, cherries, apples, etc., are also present in some animal glandular organs, in the pancreas, thymus gland, liver, etc., as a constituent of the nucleoproteid present in them. So far as is known no definite pathological cause for the appearance of this substance in the urine has been established, it may, however, appear as an anomaly.

In the urine only arabinose and xylose need be considered. The reactions of these substances with Fehling's, Nylander, phenylhydrazine, melting point of osazon, yeast, polariscope, etc., are given on the following page in a tabular form from which one can at a glance see the deciding difference between one substance and another.

It is apparent from this table that it is quite easy to make a mistake in the proper classification of the reducing substance present in the urine, unless one subjects the urine to at least four or five of the principal tests. It is also possible that the urine contains no carbohydrate at all, but instead a large quantity of the alkaline salts of uric acid and much urea.

A combination like the one stated will reduce Fehling's solution, will give crystals with phenylhydrazine, and will not ferment. One will be justified in classing the substance among the pentoses; it will be seen, however, that the furfurol test (with orcin or phloroglucine) is negative, and a careful study of the crystals will at once tell a different story. Other combinations are possible, which may lead one astray in the diagnosis, unless a careful and complete study of the urine in question is carried out.

Before considering the case of which this paper is a partial study it will not be out of place to give

TABLE I.

	With Fehling's sol.	With Nylander sol.	Phenylhydrazine	Melting point of osazon	Polariscopic examination	Furfurol reaction	Examination with Spectroscope	Fermentation with ordinary yeast	Other Tests
Glucose	Reduces	Reduces	Gives crystals	Pure crystals melt at 204°, 205°	Turns to right	With Alpha-naphthol xylidin, thymol.	A band between D and F	Ferments	Reduces Barfoed's reagent [3]
Laevulose	..	..	..	..	Turns to left	With resorcin H C l		..	Not pipited by lead acetate or subacetate
Lactose	..	..	..	193°, 194°	Turns to right	With phloroglucine		Does not	No reduction with Barfoed's reagent. Rubner's test (sugar of lead)
Maltose	..	..	..	207°	..			Ferments	
Laiose	..	..	An oily substance		Turns to left			Does not	
Pentose	..	..	Gives crystals	155°, 156° [1]	Turns slightly [2] to right	Orcin plus H C l phloroglucine plus H C l	A band between D and E	..	Gives Rubner's test
Salts of glycuronic acid.	..	..	No crystals		Turns to left	Phloroglucine plus H C l	The same as the above	..	
Alkapton	..		..		Inactive			..	Exposed to air turns dark
Alkaline salts of uric acid.	..		..						
Concentrated solutions of urea.			Crystals slightly resembling phenylglucosazon						
Allantoin	..								

the technics of some of the tests mentioned in the table, at the same time bearing in mind the laboratory facilities of a practicing physician.

Barfoed's Reagent and Test.—Cupric acetate, 5 or 6 grammes in 100 c.c. aq. destill., to which add 3 c.c. acetic acid, 38 per cent. Normal urine, as well as a urine containing glucose, when boiled with this reagent, will reduce the cupric to a cuprous salt. It is of value only where the reducing substance found with Fehling's solution is suspected to be lactose, which has no reducing effect on Barfoed's reagent.

Rubner's Test.—Precipitate 10 c.c. of urine (sp. gr. not greater than 1010), with 3 grammes of sugar of lead, plus 1 c.c. ammonia; filter. Heat filtrate for a few minutes until liquid becomes brown; add very carefully a little more ammonia (too much spoils the reaction) and heat, when a precipitate of saccharate of lead will be deposited. The solution becomes of a brick red color, which gradually clears up on top, leaving at the bottom a cherry red deposit.

Color Reactions (Furfurol).—Before testing it is best to decolorize the urine with animal charcoal.

With Alphanaphthol.—Dilute the urine three or four times, using about ½ to 1 c.c. of the diluted solution. Add 1 drop of a 15 per cent. alphanaphthol solution in 95 per cent. alcohol. Allow 1 c.c. of concentrated H_2SO_4 to flow under the urine. A greenish band forms due to the presence of HNO_2 in the H_2SO_4, which later becomes dark violet. This coloration does not belong to the reaction. If the mixture is now shaken and cooled at the same time, it takes on a carmine color with a tinge of blue. Examined with the spectroscope an absorption band between D and E extending into F and into the violet is noted. For these tests the alcohol must be furfurol free; this can be accomplished by treating ethyl alcohol with potassium permanganate. The test tubes must be absolutely clean, for the test is a very sensitive one for glucose.

With Resorcin (Seliwanoff's Reaction).—Heat the urine with a few c.c. of resorcin, and HCl (one part in two parts of water), equal parts; the mixture will be colored red, depositing a dark precipitate which dissolves in alcohol with a beautiful red color. This test is positive only where lævulose is present. Solutions, which when treated with HCl give rise to lævulose (cane sugar, raffinose), react in a similar manner. Dextrose, galactose, maltose, milk sugar, mannose, and pentose do not give this reaction.

With Phloroglucine.—Three c.c. of the suspected urine is gently heated with three c.c. of HCl,

[1] The melting point for pentose is that of the xylosazon, which, when pure, has a melting point from 156° to 160°. The purest osazon obtained is that of arabinosazon, which has a melting point of 166° to 168° (Neuberg, *Berichte der deutschen chemischen gesellschaft*, No. 33).

[2] Xylosazon is dextrorotary; the pentose more often found in the urine is the optically inactive arabinose.

[3] Normal urine will also reduce Barfoed's reagent.

1090 density, containing a little more phloroglucine than will dissolve in it. A gradual cherry red coloring which gives an absorption band between D and E will indicate that pentose is present. (Whereas glycuronic acid combinations also gives this reaction, it becomes necessary to use the polariscope in order to exclude the latter substance, or if possible, to ascertain the melting point of the osazon.)

With Orcin.—To 5 c.c. of the suspected urine add 10 c.c. of orcin 0.5; HCl, 1090; density, 100.0, and heat gently (do not boil). If pentose is present the fluid will be colored reddish, then reddish blue, and will deposit bluish green flocculi, which will dissolve in amyl alcohol and give an absorption band between C and D.

A further elucidation is hardly necessary as the table suffices for ordinary purposes. The fact must, however, be mentioned that many yeasts contain starches, at times as much as twenty-five per cent., which will ferment with water, thus misleading the physician. It is therefore always advisable to place three fermentation tubes in the thermostat, one with the urine in question, one with water, and another with water plus glucose, and add to each the same quantity of the yeast in solution. This precaution will exclude an error at once if the yeast is contaminated or inactive.

I will now consider the case in question:

Mr. L., age forty-seven; married; born in Russia; in the United States twenty-seven years. Occupation: Cashier in a theatre.

Family history: Father healthy; mother died at seventy-seven, having suffered from a skin affection for forty years. Of nine children, three died, one brother from tuberculosis of the lungs, two during infancy. Remaining children, excepting patient, healthy.

Personal history: Patient is the fourth naturally born child. Remembers no diseases of childhood. At fourteen developed an abscess after having contracted a cold. This abscess (on the neck) opened, and after discharging pus for about three years, closed up spontaneously. Boyhood otherwise normal. At seventeen first sexual intercourse. Came home and fainted. At twenty-one first gonorrhœa, lasting four months. At twenty-five second gonorrhœa, lasting three months. At thirty contracted syphilis. No skin eruption, no sore throat, but hair fell out gradually. From seventeenth to thirty-fourth year was excessive in venere. Patient married at thirty-four, wife being twenty. Wife was pregnant four times. First child normally born, but sickly. Following pregnancies resulted in miscarriages from three to four months. At thirty-eight patient contracted another gonorrhœa extramatrimonial.

Habits: Excessive in venere. Up to three years ago excessive whiskey drinker; was frequently intoxicated. Occupation required late working hours; never for the last fifteen years retired to bed before 12 o'clock. No drug habits. Patient eats daily two apples for the last few years.

Present illness: Began six years ago with shooting pains in the legs, beginning in the knees. This weakened the patient to such an extent that he could hardly walk. Four years ago had a gastric crisis, which lasted three weeks. Could not walk about without help and not at all in the dark. For one and a half years left leg is weaker. Fourteen months ago paræsthesiæ, no girdle sensations. Cannot control flow of urine for the last six months. At times he retentio urinæ. Rectal sphincters normal. Lately has had severe temporal headaches and insomnia. Memory good. Lost during last nine months about twenty-eight pounds in weight. He complains at present of inability to walk, weakness in lower extremities, occasional shooting pains, vesical incontinence.

Urinary history: First urinary examination four years ago, when sugar was found, and the diagnosis of diabetes pronounced. Three weeks later another urinary examination gave "sugar present." Patient had at that time great thirst and polyuria, drank on an average four bottles of vichy a day, and had to get up during the night three or four times to pass water. Patient was advised to go to Carlsbad. Previous to leaving for Europe the proportion of sugar in the urine was estimated at 6½ per cent. Patient sailed for Europe June 3, 1903. Arriving at Carlsbad, he had his urine examined and four per cent. sugar was found, and his case was diagnosticated as diabetes. He was put on a restricted diet. Urine was examined every week for four weeks, at the end of this time 0.1 per cent. sugar was found. Patient came back to New York in August, 1903, still dieting on fish, meat, eggs, butter, apples, oranges, and gluten bread, coffee and tea without sugar. Did not like the odor of saccharin. In December, 1903, urinary examination gave 0.5 per cent. sugar. Kept up diet. In 1904 sugar was found. In March and in May, 1905, urinary examinations gave no sugar.

Present status: Small male patient, abundant panniculus adiposus, unusual fairness of skin. Musculature good. No skeletal deformities. No psychic nor anatomic stigmata of degeneration. Vegetating organs in a very good condition. Marked bulging of both eyes, tension normal, vision good. Pupils, right larger than left, outline of both pupils slightly irregular. Both pupils do not react to light, but promptly to accommodation, pain, and consensually. Both optic nerves slightly paler than normal. In the upper extremities gross motor power is good, slight ataxia. Tendon reflexes present. Stereognostic sense present. In the lower extremities marked overextension of knees, and marked ataxia of lower extremities, cannot stand straight nor walk a few steps alone, typical Romberg reflex, knee jerks absent, plantar stimulation gives plantar flexion of all toes. Myotatic irritability increased over thigh. No ankle clonus, no Achilles jerk, marked hypotonia of lower extremities; deep muscular sense absent. Gross motor power good, but out of proportion with the musculature. Head and face: Innervation equal on both sides. Tongue voluminous, fine tremor, indentation from teeth. Speech normal, conversation rational and to the point. Ears, nose, and throat normal. Left side of neck shows a small scar from the old abscess. The lungs are slightly emphysematous, respiration equal, regular, 19 per minute. Heart sounds are distant, regular, no murmurs. Pulse 76 per minute, regular, equal on both sides, slightly diminished tension.

Since the patient's sojourn in the Montefiore Home a few maniacal attacks were observed, justifying the diagnosis of tabo paresis. One such attack caused the patient's transference to Bellevue, as it was impossible to keep him in the home.[4]

On December 4, 1905, patient was admitted to the Montefiore Home and was placed in a hospital ward. On December 5th and 6th urinary reports were as given on page 236.

Since these reports the patient's urine was examined almost every day, with special attention paid to the carbohydrate present. The urine was first tested with Fehling's, then with Nylander's solutions. Of one hundred and twenty-one urines thus tested one hundred and one reduced the copper and bismuth in these solutions, none fermented; one hundred and six gave crystals with phenylhydrazine before and after fermentation. The orcin test proved positive every time it was applied, giving an absorption band between C and D

[4] Since this article was written the patient has committed suicide.

TABLE II.

Date	Dec. 5th 1905	Dec. 6th 1905
Quantity in 24 Hours	Not given	1500 c. c.
How passed	Normally	Normally
Transparency Color	Good Dark Yellow	Cloudy Muddy Yellow
Odor	Normal	Amoniacol
Reaction Sp. Gr.	Alkaline 1628	Alkaline 1030
Albumen %	None	None
Peptones Albumose	None	None
Sugar %	Peculiar Reaction with Fehling's Sol.	None See Experimental Reports
Acetone Diacetic Acid	None	None
Urea % Gm. 20 to 40		21.06 grammes
Uric Acid 0.4 to 0.8		115.75 Milligrammes
Urates		Ammonium Urate
Bile Blood	None	None
Indican	Normal	Normal
Chlorides Gm. 10 to 15	Normal	Slight Excess
Sulphates Gm. 2 to 4	Slight Excess	Normal
Alkaline Phosphates Gm. 2 to 4 / **Earthy Phosphates Gm. 1 to 1.5**	Normal	Normal
Diazo	Negative	Negative
Sediment Character Quantity	Slight Whitish	Heavy 3 Inches White
Special Reactions		Orcin Test for Pentose Positive
Microscopic Examination: Crystaline Constituents	Triple Phosphate	Triple Phosphates
Amorphous Constituents	Sodium Mate.	Sodium Urate NH_3 Urate
Organic Constituents	None	None
Epithelia	None	None
Bacteria Parasites	None	None
Casts Number	None	None

when examined with the spectroscope. It gives me pleasure at this juncture to be able to express my thanks and obligations to Dr. Dunham, who was kind enough to corroborate the orcin test, as well as to establish the melting point of the osazon. This proved to be rather high (185°). Dr. Dunham believes it to be due to simultaneous presence of glycuronates which have a high melting point (200°).

The other points of interest in this patient's urinary condition is the small quantity of uric acid; the average of fifty-two examinations was 155,036 milligrammes in twenty-four hours. Average urea output slightly increased 28,858 in twenty-four hours. Average total nitrogen elimination 13,998 grammes in twenty-four hours. Phosphorus elimination (as P_2O_5) 2.4 grammes in twenty-four hours. The average output of pentose equalled 0.327 per cent., or an average total of 4,021 grammes of pentose in twenty-four hours. To ascertain the influence of an increased intake of fruit the patient was allowed to eat six apples daily for ten days; the proportion of pentose was not increased. On the contrary, a diminution was observed, as the proportion of pentose came down to 0.26 per cent. In order to establish his glucose tolerance one hundred grammes of glucose were dissolved in one litre of water, and the patient was made to sip it down slowly. One and one half hours later the voided urine was tested with Fehling's, Nylander's, phenylhydrazine, and the fermentation test. It reduced the copper and bismuth, gave osazon crystals, but the yeast test gave an abundant gas formation. After the fermentation test the fluid in the vessel was filtered and again tested with phenylhydrazine. It gave osazon crystals in abundance. This fact shows that there were present in the urine at the same time glucose and pentose. The quantitative output of glucose was determined by tests performed every day, deducting from the total the quantity of pentose present. The urine fermented regularly for twelve days, during which time the patient eliminated 354 grammes of glucose. This plainly demonstrates the fact that, together with his pentosuria, the patient has a distinct glucose intolerance; moreover, the patient's urine ever since the administration of one hundred grammes of glucose never regained its pure pentosuric condition. On one day it would ferment, on other occasions it would neither ferment nor give osazon crystals, the latter showing that the urine was carbohydrate free. At times it would ferment, and give crystals before and after fermentation. It may be mentioned here that the efficacy of every fresh lot of yeast was tested, for it became evident in the beginning that not every yeast is to be relied upon. To come back to the patient's condition four years ago, it would seem that at that time he had a real glycosuria (without or with pentose?), as evidenced by the examinations made in Carlsbad. Since then he may have had carbohydrate free periods, as there was no sugar found in March and May, 1905. That there is an absence of glucose tolerance is clear from his behavior after the intake of one hundred grammes of glucose.

As to the proper classification of the case, I ask permission to advance the following division of pentosuria, based upon the studies carried out with this patient and from the number of cases reported in literature:

1. Chronic pentosuria. Where pentose is excreted in the urine constantly, where a glycosuria cannot be induced after the intake of one hundred grammes of glucose.

2. Alimentary pentosuria. Individuals who cannot oxidize large amounts of pentosans introduced with the food, excreting a portion of the pentosan as pentose; when the articles containing these pentosans are excluded from the dietary the pentose disappears from the urine.

3. Intermittent pentosuria. Where the excretion of pentose takes place at more or less regu-

lar intervals uninfluenced by external conditions; where one hundred grammes of glucose will not give rise to a glycosuria.

4. Intermittent pentosuria and glycosuria. Where the same occurs, pentose being present in appreciable quantities, where glucose appears in the urine either independently or after the administration of one hundred grammes of glucose.

In the course of chronic diabetes, pentose may at times be found in the urine, the quantity being so small that it cannot be classified under any of the above four headings, a trace being demonstrable in 400 or 500 c.c. of urine. Up to date such occurrences have received no clinical significance, metabolic changes of a speculative nature only having been advanced.

It has been suggested that pentose may appear in the urine of an individual as the result of an imperfect or perverted decomposition of nucleoproteids. The metabolism of pentosurics, however, does not show an increased destruction of nucleins, as the studies of Blumenthal and Bial show, who found no increase of uric acid nor phosphoric acid in their cases, which one would expect if the above condition was responsible for the pentosuria. My case described shows, on the contrary, a constant diminished uric acid output, and no increase in the phosphoric acid elimination. On the other hand, Carl Neuberg is of the opinion that the inactive arabinose of the pentosuric may originate from galactose. Since Thierfelder was able to demonstrate the presence of galactose in cerebrin it may be advanced that the inactive galactose is converted into the inactive arabinose by a process of oxidation, thus justifying the above opinion. However, the feeding experiments of Blumenthal and Bial, who gave dextrogalactose to patients, showed no increase in the excretion of pentose. An opportunity for observing the behavior of inactive galactose in the organism of healthy and pentosuric individuals is certainly desirable.

Our Readers' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LII.—How do you treat hemicrania? (Closed July 16, 1906.)

LIII.—How do you treat burns? (Answers due not later than August 15, 1906.)

LIV.—How do you treat spasmodic croup? (Answers due not later than September 15, 1906.)

Whoever answers one of these questions in the manner most satisfactory to the editors and their advisors will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short; if practicable, no one answer to contain more than six hundred words.*

All persons will be entitled to compete under the regulations laid down by the postal authorities. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL.

The prize of $25 for the best essay submitted in answer to question LI, has been awarded to Dr. George B. Twitchell, of Cincinnati, whose article appeared on page 184.

PRIZE QUESTION NO. LI.

THE TREATMENT OF PROLAPSE OF THE UMBILICAL CORD.

(Continued from page 188.)

Dr. G. E. J. Lamin, of Montreal, Canada, says:

I. When the child is dead or possesses no vitality, the reposition of the cord is obviously not called for.

II. When the child is living and the membranes are unruptured, the latter should, if possible, be preserved. It should be a general rule before rupturing the membranes in any case to first examine for possible prolapse of the cord. For reduction of the displacement while the bag of waters is still intact, postural measure should be tried. Harm can seldom come to the fœtus from the prolapse so long as waters have not escaped. The woman is required to lie on the side opposite that on which the cord has come down. Gravity thus favors the return of the prolapsed loop. The reposition may be assisted if need be by gently pushing up the cord between the pains with care to avoid breaking the membranes. Should this fail, the woman may be placed in the knee chest position. In this posture the inverted axis of the uterus is nearly vertical, and gravity acts at the greatest advantage.

The Trendelenburg posture may serve as a convenient substitute for the latter position. While not so effectual as the knee chest, it is more so than the lateral posture; the inclination should be about 45 degrees. The fœtal heart is to be listened for at short intervals. The cord once reposited to prevent recurrence of the prolapse, the presenting part should be crowded into the excavation and firmly held there till engaged.

III. After rupture of the membranes. If the fœtal pulse can be felt, the cord should be replaced if possible. If pulsation has ceased and the fœtal heart is still beating, the presenting pole of the fœtus should be pushed up and the cord reposited after pulsation returns. Two methods are available, the manual and the instrumental. Either is to be undertaken with the aid of posture and generally of anæsthesia.

The knee chest, the Trendelenburg, or even the lateral position, with the hips strongly elevated, may be chosen. The first is the most effectual, but is not always practicable under anæsthesia without the aid of skilled assistants.

Much handling of the cord enfeebles the circulation and endangers the life of the child. The cord should be gently drawn to the front of the pelvis, where the reposition can most easily be effected. It is seldom that the prolapsed loops can be caught up in the hand and returned into the cavity of the uterus or even pushed up inch by inch; as fast as one part is reposited another comes down. Yet success is sometimes possible by either of these plans. A method which has rarely failed is: The prolapsed loop is loosely twisted into a rope, with great care to avoid interference with the circulation. It can then read-

ily be replaced within the uterus. For retention, the woman may be kept in the lateral prone position, or the presenting pole be held in the brim till engaged. Occasional vaginal examinations are made to make sure that the cord has not again slipped down, and the fœtal pulse rate is listened for at intervals. With the instrumental method a suitable instrument for repositing the prolapsed cord may be improvised with a large English catheter and a few feet of tape. A loop of the tape is made to encircle the cord loosely, and its free ends are attached to the tip of the catheter. The repositor with a stylet inserted is pushed into the uterus well up to the fundus, carrying the cord with it. The stylet is withdrawn, and the catheter left to be expelled with the child. If preferred, the tape may be secured to the catheter by a knot which can be untied by pulling on the free end of the tape, and the cord thus set free. The instrument may then be withdrawn. Return of the prolapse is prevented by pressure over the fundus, holding the presenting pole in the brim till firmly engaged.

Attempts at reposition failing if the child is still living, immediate resort should be had to version or forceps. It is sometimes possible to save the child by rapid delivery without replacing the funis. The cord should first be disposed in front of that sacroiliac joint opposite which there is most room.

Dr. Walter J. Cavanagh, of Boston, Mass., states:

The treatment of this condition depends upon the presentation and existing circumstances:

I. Head presenting and os wholly dilated or dilatable. (a) Leave the case to Nature, if pains are good and head enters pelvic cavity quickly. (b) Use forceps if pains are feeble, slow progress, and head is sufficiently low. (c) Make reposition of cord or undertake version, if the head is high and movable above the brim. It should be remembered that when reposition of the prolapsed loop is employed (the method of replacement will be stated in No. II), that the attempt is often unsuccessful, but good results are attained if the prolapsed loop is extremely short. Efforts at reposition should not be persisted in to such an extent as to enfeeble the force of the fœtal heart, and when it is evident that reposition cannot be brought about, or even after reposition has been accomplished, should there then occur a prolapse of other portions or loops of the cord, etherize the patient, and apply the forceps if conditions exist as stated under (b). Should conditions exist such as I have stated under (c), pass the hand in up to the feet, viz., do a podalic version, and a speedy extraction of a living child may be secured.

II. Where the os is small or undilatable. When this condition is present reposition may be tried in the following way: Place the patient in the knee chest position, then by causing head to recede from the superior strait by pressure on it with the fingers, return the prolapsed loop gently, pausing during a contraction, through the os, over the head, to the back of the child's neck. This being accomplished immediately turn the patient on her side and by manual friction on the fundus and suprapubic pressure upon the head through the abdominal wall, excite the uterus to contraction so that engagement of the head may be secured. If the digital method fails, then resort may be had to instrumental reposition, a simple method being the following, viz.: Through the eye of a stylet male elastic catheter pass a loop of tape only, formed from a piece of tape some three feet in length and doubled, end to end, over the end of the stylet. Push up the stylet in order to secure the tape loop. Loosely tie the free ends of the tape around the lowest portion of the prolapse, and gently push up the cord into the uterus by means of the catheter until it is above the presenting part of the child, then withdraw the stylet, and the cord is released. Both catheter and tape may be left in situ until labor is completed. As stated in No. I these attempts at reposition must not be prolonged, as a stillbirth may result, so that if unsuccessful after one or two attempts resort to dilatation and version.

III. Complications and the different presentations. If prolapse of the cord in head presentations be associated with prolapse of the hand, replace the hand and prolapse, and at the same time exert pressure on the abdomen, so that the head presentation may not be converted into any other. The object sought is to cause the head to fill up the os. Should a foot present together with the head and prolapsed cord, or the foot, hand, head, and cord present the best method to pursue is to extract the foot, while the remainder should be pushed up, viz., version by feet.

In face, breech, or transverse presentations, and in contracted pelvis the proper procedure is version and immediate extraction.

If child is dead of course no interference with the prolapsed cord is necessary.

Dr. W. J. Cherroweth, Sr., of Decatur, Ill., writes:

As the prolapsus depends largely on gravitation, I seek the aid of gravity in its replacement, and as time is an essential element of success I do not delay treatment. Neither the vis medicatrix, the expectant treatment, nor Christian Science can be relied on. The following report of cases I have treated will indicate how I usually meet the requirements. They occurred before the Trendelenburg position was announced, and I had not read Marion Simms's suggestion of the knee elbow position, nor had he published it.

Called upon to attend a woman in her fourth labor I found her kneeling in front of a chair leaning on it with face and chest. She excused herself for occupying such an unusual position, claiming that she had taken advantage of it during her last confinement with great relief. I did not request any change of position, but proceeded to make a vaginal examination. I found os, vagina, and perinæum dilatable, the pelvis capacious, vertex presenting, and cord in the vagina. While making the examination it occurred to me that if the fundus of the uterus was more directly under the neck that the cord could be readily introduced into the body of the uterus. Without removing my hand I asked her if she could not put her head lower. Without replying she assumed the knee elbow position and I succeeded in placing the cord in the os, and carefully pushing the head aside, the cord slipped from my

fingers. The labor went on naturally, and in due time the child was born crying.

Speaking of this case a few days after it occurred to my partner, Dr. Joseph King, at that time the most noted obstetrician in central Illinois, he told me of a remarkable incident in his practice.

On examining a woman he was called to attend he found the cord in the vagina, and at once told the patient that the child would probably be dead born. One of the company of women who had come to attend the birth, called to him to "hoist the foot of the bed so the woman's hips would be higher than her head and the cord would go back of itself." It was a new idea to him, but he thought that it could not harm the woman and tried it. The cord did not run and hide as the woman insinuated, but he succeeded very readily in putting the cord in the neck of the uterus, and placing a small cambric handkerchief against the cord gently pushed the cord, and much to his surprise it dropped into the womb very much as the intestines do in a reduced hernia.

A woman living six miles from Decatur called me to attend her in her seventh labor. She had lost three boys, and had three girls living, the boys dying during parturition from dropping of the cord. I reached the house just in time to find a pulseless cord in the vagina and head low down. I applied short forceps and delivered. The child was resuscitated.

Dr. C. D. Martinetti, of Orange, N. J., notes:

When prolapse of the cord is threatened it is often possible by judicious manipulation and by suitably arranging the position of the patient to prevent further complications.

Supposing the sac is found open and an actual prolapse has occurred we must either replace the cord or else bring on a rapid delivery. If the fœtal head is movable and still located high up and there is not present a contracted pelvis, the cord may be replaced and expected to remain in place. This can be done with the hand, well sterilized, introduced into the os and uterus, carrying with it the cord. The cord is left only in proximity of the thorax of the fœtus. The patient is made to lie on her side, and finally the hand is very slowly removed. If dilatation is too small to allow the hand to enter, take an ordinary rubber catheter and a piece of 14 B. and S. gauze wire two inches longer than the catheter, knot together the ends of a piece of white tape about eight inches long, sterilize this as well as the catheter and wire, slip the wire into the catheter and having looped the tape around the prolapsed cord, catch the two ends on the wire as it emerges from the eye on the catheter. Then push the wire on beyond the eye into the end of the tube, place the carrier thus formed into the os, push it carefully along the inner surface of the uterus helping the cord along with the fingers. When satisfied that all is safe withdraw the wire, and thus release the loop which remains in the womb to be expelled later during labor. Withdraw the catheter. If after the operation the fœtal beat is normal await labor, if it shows asphyxiation of child dilate the os as promptly as possible with the hydrostatic bag, and if necessary perform a version and deliver without loss of time.

In podalic presentations replacement seldom succeeds on account of the proximity of the navel to the internal orifice. If in this case prolapse occurs it is advisable to draw out one foot of the child and replace the cord in the space thus left vacant.

Dr. Edward Mayfield Boyle, of Baltimore, Md., writes:

The obstetrician recognizes prolapsus funis in two conditions: (1) Prior to rupture of the membrane; (2) after rupture, when the cord is found in the vagina.

His duty in the first variety resolves itself in carefully preserving the sac from rupture as long as possible. The woman is placed on the side opposite that on which the cord lies, the head lowered, and the pelvis elevated to effect gravitation of the cord toward the fundus uteri. The knee chest position, though difficult to maintain for a long while, as well as the Trendelenburg's position, are useful. During the early stage, either of these positions may be resorted to at intervals, the woman resuming her lateral posture as stated. After the os is sufficiently dilated for the head to pass through, place the woman in the knee chest position, and if the cord slips back, rupture the membrane, apply manual pressure externally to secure engagement of the head which fills the opening and prevents reprolapsus, the woman again resuming her lateroprone position. Should this posture fail to replace the cord, preserve the membrane intact.

If it is certain that the child is dead, treat the mother expectantly; but remember that repeated auscultation alone can fully assure death, and not cessation of pulsation in cord, which may be lost for some minutes and yet the child be alive. When prolapse is due to certain disorders, shoulder presentation, placenta prævia, etc., the treatment should be directed to the causes.

For the second variety the only help is artificial reposition, of which there are several methods. Put the woman in the knee chest position, carefully pass the hand into the womb, the cord resting in the palm, until the loop is introduced above the equator of the head to the back of the child's neck, the fundus uteri meanwhile being supported externally with the other hand, and the head gently pushed aside, when the inner hand passes alongside it. Should this be impracticable from the head having descended too low, push up the loop with two or three fingers, hold it above the equator of the head until latter is tightly engaged by pain, when the fingers are withdrawn. This may be repeated. Again, if pulsation is good, the cord being in one of the sacroiliac joints, the descent of the head rapid, and spontaneous delivery promises speedily to occur, it is better to wait; rapid interference with forceps being indicated by feeble or discontinued pulsation.

Besides the fingers or hand a tape and styletted male catheter can be used in replacing the loop. A piece of tape, three or four feet long, is doubled, end to end, and passed into a catheter so that the tape loop can be drawn an inch or two through the eye of the instrument. The stylet is passed in, and its extremity made to

project from the eye of the catheter. The loop of tape is now passed round the loop of cord and hooked over the projecting end of stylet, which last is pushed back into the eye and shoved up quite to the closed end of catheter. The two ends of the tape may now be gently drawn upon until the loop loosely holds the cord in contact with the instrument. The prolapsed funis is thus pushed into the uterus by the catheter until it is above the presenting part of the child, when, by withdrawing the stylet, the cord is released. Catheter and tape may be left in until after labor. Again, the loop of tape, instead of being passed entirely through the catheter, is passed into the eye of it and over the end of the stylet, which is pushed up to secure it. The free ends of the tape may now be loosely tied round the loop of cord, the catheter introduced as before, and the stylet removed. Or, better still, a catheter with two opposite eyes may be used. The loop of tape is passed transversely through both eyes, then round the cord, then over the end of the catheter, the tape drawn tight enough to hold the funis. A stylet is herein also used to help introduction, and withdrawn afterward, leaving catheter, etc., in utero. Several other methods of using the catheter are recommended. A flat whalebone with an eye on one end has been used in a somewhat similar manner, while ballooning the cord is practised by some.

Reposition failing, speedy delivery is next in order; or this being impracticable the cord should be placed where it would receive the slightest pressure. Thus, when occiput is at one of the acetabula place the cord near the sacroiliac synchondrosis of the same side. In breech presentation put it near the sacroiliac synchondrosis corresponding to anteroposterior diameter of breech. Speedy delivery may be done by forceps, the os being dilated, the head sufficient low. Should forceps be unavailable, podalic version is preferable by external, or combined external and internal, manipulation and subsequent rapid extraction. The dangers of version, however considered, should first be in the interest of the mother. The condition of the child before this is done should be religiously scrutinized to justify any risk to the mother.

When prolapsed cord, in head presentation, is complicated by prolapse of the hand, this extremity and the cord should be replaced, and the head made to engage and nullify redescent of the cord. In this manœuvre the danger of displacing the head and creating transverse presentation is best prevented by abdominal pressure during the proceeding. When a foot presents with head or cord, or when foot, head, hand, and cord simultaneously present, draw down the foot, push up the rest, thus creating podalic version. Podalic version is the resort *par excellence* when manual and instrumental reposition fails.

When the child is dead prolapsus funis needs no treatment. Should hope of life remain prepare for resuscitation by providing hot and cold water, brandy, electricity, etc.

Finally, be the method of replacing as it may, prolapsus is very liable to recur; so great is this liability that some classic writers on obstetrics have compared its restoration with the task of the Danaides and with that of Sisyphus.

C. W. Stegmann, of Philadelphia, remarks:

Treatment of this serious complication as far as the child's life is concerned should be prompt. The course for this condition is as a rule imperfect adaption between presenting part of fœtus and pelvic inlet of mother, thereby causing death of child by compression of the cord between presenting part of fœtus and pelvic wall. This complication is one of the most frequent causes of fœtal death. Therefore the accoucheur should always be on his guard for this serious complication.

Treatment depends upon the degree to which the cervix is dilated and to the extent of presentation. If the membrane remains intact there is no danger as a rule of complication. Therefore care should be taken to avoid premature rupture of the bag of waters, especially when the physician is making a vaginal examination. If, however, the membranes are ruptured and a prolapsed cord presents, prompt delivery if possible is always the best, version and forceps if needed.

In breech presentation a foot should be brought down, followed by immediate extraction of the child. In transverse presentation, with prolapsed cord, version is to be performed.

In case of partially dilated cervix the prognosis, as far as the child's life is concerned, is very poor. If the head is not deeply engaged the patient should be placed in knee chest position, the accoucheur's hand should be introduced into the vagina, and the cord drawn back into the uterus, and carried over some prominent part of the child's body. However, the safest treatment after all is replacement immediately followed by application of forceps to head or podalic version.

If, however, the fœtus is dead Nature should be allowed to pursue its own course. The prognosis for the fœtus is thirty to sixty per cent. mortality.

Dr. H. Rostenberg, of New York, observes:

The most frequent cause of this accident is owing to the fact that the position of the child is such that the presenting part does not fill out the pelvis; therefore, most frequently met in transverse and foot, rarer in breech, and very rarely in head presentations. The treatment varies according to these presentations:

1. Head presentation. Is the head movable, and the os sufficiently open for version with following extraction this operation should be performed immediately, whereby the cord will assume its normal position. Are these conditions not fulfilled, manual reposition of the cord should be tried. The technics of this operation is as follows: The mother is put in the knee chest position, or on the side of the prolapsed cord, the entire hand of the physician is introduced into the vagina, two fingers grasp carefully the cord and bring it up as high as possible over the presenting head, trying at the same time to push

the head to one side. When this is done put the mother on the side, opposite to where the prolapsed cord was, and then try to push the head by outside pressure into the pelvis. Is the os not sufficiently opened, either for version with following extraction, or manual reposition, then try combined version, turning the child through external manipulation with the left hand, at the same time trying to get one foot down with one or two fingers of the right hand. Is the head engaged and the fœtal pulse still manifest a quick forceps delivery will sometimes bring a living child; but caution should be taken that the cord should not be enclosed by the adjacent blade.

2. A breech position should be changed into a foot position in order to diminish the circumference of the presenting part.

3. Is the foot presenting, there is hardly any danger on account of the smallness of the presenting part, therefore an expecting plan is indicated.

4. In transverse position the prolapsed cord is left alone, as this will rectify itself by the version indicated in this position.

All these operations are only advisable where there are still signs of life in the child. The pulseless cord is not an absolute indication of the death of the child, as its heart might still be beating; therefore very exact auscultation of the heart is the only positive guidance here.

Dr. M. A. Greene, of Worcester, Mass., remarks:

"Nature so far as in her lies imitates God." Prolapse of cord is rarely met by the physician. His aim is to prevent pressure on the umbilical vessels, and to ascertain presentation of the child and the modifying circumstances. Premature rupture of membranes may possibly be averted by keeping the patient in lateroprone position, enjoining her against straining, and supporting the membranes by a distended Barnes dilator.

If auscultation reveals heart failure of the infant push the cord up. To guard against relapse rupture the sac, that the head may occlude os. The cord often floats upward as the head descends. Progression of the case determines whether we allow Nature or forceps to terminate delivery. When the head is in the pelvic cavity place the woman in the knee chest position and replace the cord. When the head is above the brim, the uterine axis will be reversed, intraabdominal pressure removed, and liquor amnii retained. Now retain the patient in the lateral posture with hips elevated. Robertson's repository is a ready contrivance when the cervix is rigid and the membranes are ruptured.

Shall version be performed when the head is above brim? Natural delivery should be awaited for, reserving the version should conditions occur, which augment pressure. The Braxton-Hicks's method should be used when the cord cannot be replaced or the head extracted. Face presentations demand a version, while prolapsed extremities should be returned, and full breech presentations, owing to extreme pressure, should be hastened by bringing down the extremity.

Let the physician watch the possibilities of his case and endeavor to deliver a living child.

Therapeutical Notes.

Myelogenous Splenic Leucæmia Treated With X Rays.—Allaire and Fortineau (*Gazette médicale de Nantes*, June 28), exhibited a patient before the Société medico-chirurgicale des hôpitaux, who had suffered with marked leucæmia, with enormous enlargement of the spleen, and anæmia with dropsy. Two radiations were given each week and soon the symptoms all disappeared. Repeated examinations of the blood showed great improvement.

Formula for Painful Menstruation in Young Women:

℞ Fluidextracti Viburni prunifol,.....10 grammes;
Antipyrinæ, ... 3 grammes;
Potassii bromidi, ... 5 grammes;
Alcoholis, ...0.20 gramme;
Syrupi Certicis Aurantii Amer.,.....75 grammes.
M. Take a tablespoonful two or three times a day after meals.

La Revue médicale de Normandie, May 25, 1906.

Potassium Iodide in the Treatment of Dry Pleurisy.—Lucien, Jacquet, and Luzoir (*Bulletins et mémoires de la Société médicale des hôpitaux de Paris*, June 28th) report three cases showing the remarkable effect of potassium iodide in bringing about resolution in cases of dry pleurisy. The dose varied from one to three grammes a day. There was no reason for suspecting that there was a syphilitic foundation for the pleuritic inflammation. The improvement was marked and rapid.

A Diagnostic Expedient in Human Trypanosomiasis.—In a white patient suffering with African fever in whom examination of the blood had failed to show the parasite, Nattan-Larrier and Tanon report to the Société de biologie of Paris that they had found numerous trypanosomes. They insist upon the value of this diagnostic expedient. When the examination of the blood is negative, then scarification of patches of erythema may prove successful.—*La Tribune médicale*, June 30th.

Borosalicylic Acid as a Substitute of Mercury Bichloride as an Antiseptic.—Carcarro and Cesahis (*Journal de médecine de Paris*, July 1st) call attention to the fact that the addition of boric acid to salicylic acid greatly increases the solubility of the latter. The proportion recommended is twelve parts of boric acid, six parts of salicylic acid, and one thousand parts of water. This solution is preferable for surgical use to the corrosive sublimate solutions, because it is not toxic to human subjects, but is a microbicide, and well adapted to antiseptic purposes.

Treatment of Chronic Suppurative Rhinitis of Children.—Georges-Laurens (in *La Clinique*, June 29, 1906) recommends hydrogen dioxide for local treatment of suppurative rhinitis, especially in young children. The preparation should be pure, or of excellent quality. As it often contains traces of hydrochloric acid, which is extremely irritating to mucous membranes, he advises that the solution should be first neutralized by soda. In order to insure stability of the solution, the addition of boric acid is advised, so as to make

the reaction slightly acid. This solution for local use may be diluted with distilled water (2 parts of the latter). Three or four times a day, after making the child blow his nose, a half teaspoonful is poured into each nostril, the head being tilted backward. Excellent results have been obtained in obstinate cases.

Treatment for Toothache Caused by Alveolar Periostitis.—A preparation, consisting of equal parts of tincture of iodine, tincture of aconite, and chloroform, is recommended by Sauvez (*La Clinique*, Paris, June 29th). This mixture is to be applied to the inflamed gum not with a brush, but with a small tampon of absorbent cotton, about as large as a lentil, and mounted upon an applicator, or match stick. It is held for a short time in contact with the gum just below the neck of the tooth. Scarification is often of benefit, or the thermocautery point may be applied. A warm footbath and a light purgative are very useful. Sometimes a rheumatic tendency requires treatment, especially at the menstrual period. Finally, antisepsis is secured by using a mouth wash every two hours, containing a little formaldehyde (1-1,000).

Trypanosomiasis in a European.—A Frenchman, who had lived for two years on the Upper Congo, in a region where cases of trypanosomiasis are frequent among the natives, returned to France, and was admitted into a hospital for treatment of a bilious fever. Nattan Larrier, who reports the case to the Société médicale des hôpitaux (April 27th) found none of the classic signs of trypanosomiasis; there was a slight cervical adenopathy, a decided increase in the pulse rate, with irregular fever temperature (which did not yield to quinine), but there was no œdema, or erythema, no optic signs, or nervous phenomena. Examination of the blood, however, was positive; two typanosomes were found in six slides of the dried blood when placed under the microscope.

Anisic Acid as an Antipyretic.—By the oxidation of the oil of anise, we obtain anisic acid, a product isomerous with methylsalicylic acid. Anisic acid is only slightly soluble in water, and is very soluble in alcohol and ether. The alkaline salts formed by this acid, on the contrary, are very soluble in water. Anisic acid has very pronounced antiseptic qualities. In the form of a powder, spread over the surface of a wound, it checks suppuration and prevents the development of microorganisms. The sodium anisate administered by the mouth produces similar antipyretic effects to those of salicylic acid, without exercising the injurious effect of the latter upon the digestion and nutrition. The sodium anisate is given in the same doses as the sodium salicylate. The following combination may be used:

℞ Sodii anisatis, ...2 grammes;
Tincturæ eucalypti, ...2 grammes;
Syrupi papaveri, ...40 grammes;
Syrupi, ...100 grammes.
M.

Curci, in *Journal de médecine*, June 24th.

Buboes in Plague.—Hunter in the *Lancet* of July 14, brings forward his experience in regard to buboes in plague. The neck, axilla, and groin are the commonest sites of these bubonic swellings. They are also occasionally found in the tonsillar region, the popliteal space, the cubital gland, the secral region, the mesentery, the lymphatic glands around the cœliac plexus, posterior to the liver, and about the pancreas. Their date of onset varies extremely. The majority are well marked before the fourth or fifth day of the illness. Their growth is usually slowly progressive. The size varies; they may be as large as a man's fist or larger, or never bigger than a large nut. In 57 per cent. they are situated in the femoral region, in 39 per cent. in the axillary region, and in 6 per cent. in the inguinal region. Double buboes occur in about 1 per cent., and multiple buboes in a slightly less proportion.

Cure of Epithelioma of the Eyelid by the Thermocautery.—Le Roux (*La Tribune médicale*, June 26th) reports a case of a woman, seventy years of age, who presented at the internal commissure of the right eye a large ulceration extending over the lateral side of the nose and the region of the lachrymal sac. The ulcer was about the size of a franc piece. There were no glandular enlargements. There was a marked ectropion of the lower eyelid. The patient having positively refused operation for the ablation of the lesion, treatment was undertaken by a method followed at the hospital of Saint-Louis, in the service of Professor Gaucher. At the end of ten séances of application of the thermocautery the cure was complete, the cicatrix had a good appearance, and the ectropion had almost entirely disappeared. There had been no return of the growth in seven months. The reporter believed that this method may be of real service among the class of patients who are not able to be treated by radiotherapy, and also those pusillanimous subjects who obstinately refuse all surgical intervention.

The Movements of the Stomach and Intestines in Some Surgical Conditions.—Cannon and Murphy studied this subject upon etherized animals which after being operated upon were given food mixed with subnitrate of bismuth. Fluoroscopic observations of the changes in the contents of the alimentary canal were then made with the x ray. After high intestinal section and suture gastric peristalsis was not interfered with, but for six hours the closed pylorus prevented the entrance of food into the injured intestine. After end to end suture of the severed intestine no inefficiency in the region of the suture was observed, but after lateral anastomoses food accumulated in the chamber formed by the opposed loops, peritalsis being checked for days or weeks by the section of the circular muscular fibers. In intestinal obstruction food leaves the stomach and as it accumulates above the obstruction peristalsis alternating with segmenting movements tends to force the food beyond the obstacle, after which it is moved swiftly backward to the stomach. After thrombosis and embolism the

food lies quietly in the stomach until vomited. Etherization for an hour and a half did not delay the discharge of food from the stomach, neither did exposure to the air and cooling of the gut. After handling the digestive organs there was no gastric peristalsis and no discharge of food from the stomach for three hours. After rough handling the food was retained four hours or longer, and then emerged slowly with sluggish action of the intestine.—*Annals of Surgery*, April, 1906.

Antithyreoidine Serum in the Treatment of Exophthalmic Goître.—Delaine and Philippe (*Annales de la Société médico-chirurgicale de Liège*, No. 3, 1906) discuss the treatment of a case of Basedow's disease, in which antithyreoidine (Möbius) was used. Proceeding from the hypothesis that the thyreoid gland secretes principles which neutralize certain toxines, and that this neutralization should lead to the establishment of a condition in which there is neither an excess of toxine nor an excess of the neutralizing principle, the pathologists have derived the idea of contrasted conditions of hyperthyreoidization and hypothyreoidization, clinically represented by Basedow's disease and myxœdema. In hypothyreoidization, there would be a deficiency of toxines and too much of the neutralizing principle. To supply the deficiency an animal's serum may be used from which the thyreoid gland had been previously removed. After this gland has been extirpated, the toxines will no longer be destroyed, and they will appear in excess in the blood and in the products of glandular secretion. Guided by this theory, Lanz and Burghart have given to their patients suffering with exophthalmic goître the milk of a goat from which the thyreoid had been removed. From this treatment great amelioration of symptoms has been reported. Möbius, of Leipzig, utilized the serum of the blood of sheep, from which he had first removed the thyreoid. The first bleeding was practised six months after the operation. In order to preserve it, the addition was made of one and a half per cent. of carbolic acid to the serum. It is noteworthy that as far back as 1895 Ballet and Enriquez reported that they had obtained favorable results in patients suffering with Basedow's disease following the injection of the serum of athyreoidized dogs. Eulenburg first systematically employed this serum treatment by gradually increasing doses, followed by decreasing doses, and then allowing an interval of a week to elapse before resuming the treatment. Delaine and Philippe followed his plan by prescribing three daily doses of ten drops, then fifteen, twenty, and so on up to thirty drops, three times a day. This dose of ninety drops a day was continued for only two days, and then the dose was progressively decreased. Under this systematic treatment the various symptoms—the tachycardia, the goître, the exophthalmia, the trembling (Charcot-Marie), the flushes of heat, the attacks of profuse perspiration—were all greatly ameliorated. The serum was given by the mouth, as advised by Möbius, because its hypodermic administration is very painful and much less efficient (through *La Tribune médicale*). Skansky, also, has recently reported a case treated by this serum (*Wiener medicinische Presse*, March, 1906) in which he likewise observes improvement in the symptoms, but states that so far there has been no definite cure obtained by this method.

The Prophylactic Treatment of Hereditary Syphilis.—P. Rudaux (*La Clinique*, May 4th), repeats the observation of Pinard that there is too great a tendency in the treatment of syphilis to treat the individual and to neglect the treatment of the species. The phophylactic treatment of hereditary syphilis should receive a greater amount of attention by the profession. Clinically, several distinct problems may call for solution. When paternal syphilis is demonstrated by the occurrence of repeated miscarriages, or the expulsion at term, or near term, of a dead and macerated fœtus, or the birth of infants presenting syphilitic lesions, or dying suddenly a few days after birth, and the father acknowledges an old infection, he should be instructed (1) That before procreating again he should subject himself, for at least six months, to antisyphilitic treatment. (2) That if pregnancy occurs subsequent to this period, the wife should be placed upon a disguised antisyphilitic treatment, during the whole period of pregnancy. (3) That, thanks to these precautions, the infant has every chance of being born healthy; but it should either be nursed by its mother or brought up on the bottle; it should never be given to a wetnurse. In case the physician should be consulted only after the beginning of pregnancy, and the father acknowledges that he formerly had syphilis, it is necessary (1) That the mother should be subjected during the whole duration of pregnancy to systematic antisyphilitic treatment. (2) That the infant likewise should be treated during the early months following its birth, even although no symptoms are present, and, no matter what happens, it should never be allowed to be wetnursed. (3) That the father would do well, before procreating again, to submit to a course of treatment during a period of six months. It is also understood that if the mother is known to be syphilitic, the same necessity for six months' preliminary treatment exists in her case, and, if she nurses her infant, the treatment should be continued during the whole period of nursing. The following approved formula is used by Professor Pinard:

℞ Hydrargyri iodidi rubri, ...0.10 gramme;
Potassii iodidi, ...10 grammes;
Syr. aurantii, ...300 grammes.
M. Dose, one tablespoonful following or during the two principal meals.

In some cases this may be modified by the addition of lime glycerophosphate, in the same proportion as the potassium iodidi. Should primary or secondary syphilitic accidents make their appearance during the course of a pregnancy, more energetic treatment must be instituted. In such cases the subcutaneous injection of some mercurial salt would be the preferred method, on account of its more rapid action, and because it does not embarrass the stomach.

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AN INTERESTING BIOGRAPHICAL SKETCH.

A distinguished Philadelphia surgeon, Dr. J. Chalmers Da Costa, contributes to the July number of the *Bulletin of the Johns Hopkins Hospital* an instructive paper which he read before the Johns Hopkins Historical Club last February. It is a condensed account of the prominent features of the career of the great French military surgeon, Baron Dominique Jean Larrey. Its value lies not so much in any addition that Dr. Da Costa professes to make to our previous knowledge of Larrey as in his exposition of the great baron's chief professional achievements. Probably the greatest of these was the conception and creation of the flying ambulance, with the associated new arrangement of field hospitals, which fairly revolutionized all civilized nations' systems of caring for the wounded in time of battle.

But it was not in military medicine alone that Larrey's genius made itself felt; he took a notable part in promoting the advancement of medicine and surgery in general. By his free use of drainage in the treatment of large wounds, especially those of amputation stumps, together with his avoidance of unnecessary dressings in the case of wounds that were doing well, he achieved results far more favorable than those that had satisfied his predecessors. His many successful resections of joints, too, saved many a limb that, but for him, would have been sacrificed. His employment of supporting treatment after severe injuries was quite in line with his enlightened views of general therapeutics. His boldness as an operator is well shown by his countertrephining in cases of lodgment of a bullet in the cranium and in his resort to Ambroise Paré's operation of excising the semilunar cartilage of the knee joint for the relief of "internal derangement" of the joint in years long preceding the antiseptic era. His persistent advocacy of primary amputations contributed powerfully to their general adoption. His recognition of discoloration in the mastoid region as a sign of fracture of the base of the skull and his careful studies of the paralytic effects of injuries of the brain have had their influence on our appreciation of the signs and symptoms of traumatic lesions of the encephalon.

In view of all that we Americans, together with the rest of the world, owe to Larrey, it is gratifying to reflect that in one respect he was indebted to the surgeons of our Revolutionary army. "He says," remarks Dr. Da Costa, "that at this period the French surgeons would not amputate until late in the case, but that the American had the courage to amputate at once or within twenty-four hours. The mortality among the French was large, and among the Americans very small." And this American experience, founded on independent convictions, sustained Larrey powerfully in his contention for the superiority of primary amputations.

MUNICIPAL OWNERSHIP OF ICE PLANTS.

The heat of the summer, with the increasing scarcity and advancing price of ice, reminds one of the great rôle ice plays in the treatment of sick and convalescent persons. Not long ago we referred to the question of water meters in New York. Municipal governments have seen the wisdom of owning water reservoirs and supplying their citizens with this great necessity of life. The supply should not be stinted; each household, even the poorest, should have ample facilities for bathing. Hardly less important are the production and delivery of plenty of ice, at a moderate price, to every household. In such great centres of population as New York, Chicago, Philadelphia, and Boston it is absolutely necessary to have enough ice to preserve articles of food, not only in the stores of the purveyors, especially the retail distributors, but also in the pantries of the housewives. Some of the great hospitals have their own ice plants, but it is impracticable for ordinary householders to have them. If a member of a family should become sick, ice is often as much called for as drugs. As the price of ice stands at present, it seems to have become a luxury.

It is questionable if our cities should not build

their own ice plants and sell the product at a price which will pay only the interest on the invested capital and the cost of manufacturing and delivering. Other cities have proved the possibility of operating street cars, light plants, etc., and the neighboring city of Mount Vernon is taking steps toward a municipal ice plant. New York is at present experimenting with the management of a ferry. Even the best laws in reference to the trusts are not able to cope with these combinations. The meat trust can be curbed only by United States laws, and the ice trust is neither better nor worse than the beef octopus. An ounce of prevention is worth a pound of cure. The *Videant consules ne quid res publica detrimenti capiat* may be applied to our ice question, and should stimulate the governing bodies of our cities, especially New York, to investigate this important question and act upon it.

THE CARDIAC HYPERTROPHY OF ARTERIOSCLEROSIS AND OLD AGE.

True hypertrophy of the heart muscle is by no means of rare occurrence, and is developed in connection with various conditions. Excessive physical exertion is universally recognized as a direct cause of hypertrophy of the heart, and Tyson considers constant mental excitement as a possible cause. Pregnancy is sometimes attended by a certain amount of hypertrophy of the heart. Exophthalmic goître and allied conditions and also long continued tachycardia and palpitation present this feature.

In arteriosclerosis, Bernheim (*Revue médicale de l'Est*, June 15th) has distinguished many varieties of heart enlargement, which he resolves into the following four types: 1. Eccentric hypertrophy of the left ventricle with a normal or slightly dilated right ventricle. 2. Eccentric hypertrophy of the left ventricle with stenosis of the cavity of the right ventricle, due to the hypertrophy, which crowds the sæptum over to the right side. 3. Concentric hypertrophy, with stenosis of the left ventricle, the right ventricle remaining normal or dilated. 4. Concentric hypertrophy with stenosis of both ventricles and dilatation of both auricles.

In the first group, the prognosis is comparatively favorable, for the heart is capable of carrying on its functions properly during a long period. The three other forms are of unfavorable prognosis, as they tend to produce early heart failure (asystole) in the adult. This, however, is less likely to occur in an elderly person, in whom general senile involution is in progress. The cardiac hypertrophy of arteriosclerosis is usually regarded as secondary to the increased tension and to interstitial nephritis.

With regard to the hypertrophy of old age, on the other hand, an ingenious explanation has been offered by G. Etienne, who sees in it a disturbance in the balance of the internal secretions. It is well known that the secretions of the suprarenal capsules tend to produce heightened arterial tension, but under normal conditions, in the adult of middle age, for instance, these secretions are opposed by the secretions of other organs. In the aged, Etienne maintains the latter agents are diminished, and the excessive tension, arterial sclerosis, and cardiac hypertrophy naturally result.

Vacquez has formulated a new theory for the increased vascular tension of arteriosclerosis. Instead of being solely caused by renal sclerosis, he thinks that it may also be caused by increased functional activity of the suprarenal capsules. Hyperplasia of the adrenals need not necessarily accompany this increase of function.

In addition, then, to mechanical and nervous causes and the action of toxic agents introduced into the circulation, we may possibly include a disturbance of the internal secretions among the causes of pure hypertrophy of the heart. Especially must the hypothesis of an increase of the supertensive secretion of the adrenals be considered as a factor in cases associated clinically with arteriosclerosis. On the other hand, the hypothesis of a notable deficiency of the counterbalancing secretions must be thought of as a possible explanation of the cardiac hypertrophy of old age.

THE RETROSPECTIVE DIAGNOSIS.

It is probably true, as was maintained by Trousseau, that the physician's knowledge and sagacity are peculiarly taxed in arriving at a prognosis. But it is none the less true that to make a retrospective diagnosis is sometimes a matter of such difficulty as to shake one's belief that "hindsight" is easier than foresight. For there is nothing to go upon but the history, and that is generally vague and defective and not to be supplemented by cross examination or by physical signs. To be sure, there are those who find no difficulty in convincing themselves that eye strain was at the bottom of this or that great man's fatal malady; and if they do not convince others, they can always confirm themselves in their own opinion and at the same time silence all dissent, save that which expresses itself humorously, by declaring that everybody who does not agree with them is an ignoramus. We are

getting to be rather familiar with this line of procedure, and we are not aware that it does any particular harm.

To set history straight, however, is not the sole aim in attempting to ascertain the nature of past pathological states. The formation of a retrospective diagnosis is often a sort of detective work that has a very intimate bearing upon the probabilities of heredity, upon the nature and gravity of a patient's present illness, and upon what is known in life insurance as an individual's "expectation." The art should therefore be cultivated with all possible assiduity. Its exercise calls the judicial faculties into play and requires all the niceties of analysis that lawyers bestow on evidence, though in the majority of instances it is only testimony that we have at our disposal, and testimony is not necessarily evidence. The main thing to avoid is the premature formulation of an hypothesis, for such a weed is apt to grow rank in spite of efforts to root it up. Statements, both oral and written, must be subjected to the strictest scrutiny before they are admitted as representing facts, and the facts, once ascertained, must, one and all, be susceptible of being fitted together without violence. Any attempt to force facts into harmony with a foregone conclusion is sure to work ruin to our hopes of arriving at the truth. Hypothesis must come late in the investigation, and only when it is inevitable can it be tolerated. Even bearing these things in mind, we shall often stray wide of the mark, but we may then console ourselves that we have done our best.

CANCRUM ORIS.

In the July number of the *Medical Chronicle* Mr. E. D. Telford, surgeon to the Manchester (England) Hospital for Sick Children, briefly reports a case which is notable in two respects—because the patient recovered after the disease had made extensive progress and because the favorable termination is imputed by Mr. Telford partly to the use of antidiphtheritic serum. The patient, a poorly developed and ill nourished girl, seven years old, had had an illness called bronchitis about a month before her entrance into the hospital with cancrum oris, but, as she had not had medical attendance, the nature of the preceding sickness was somewhat in doubt. It is remarked that there did not appear to have been any rash or any affection of the throat. Seven days before the child's admission the mother had noticed a black patch on the right cheek. The cheek was soon perforated and the ulceration went on very rapidly.

On her admission, the child was "in a grave condition, pale and emaciated, with quick, feeble pulse and every indication of profound toxæmia," but there was no sign of pulmonary infection. The right half of each lip was missing, also an area of the cheek of the size of a crown piece. The edges of the ragged and irregular hole left were indurated and sloughy; its bottom was formed by bare black bone, and loosened tooth fangs projected from the alveolar margins, the outer plate of which had been destroyed, in both jaws. The odor is described as horribly foul. Mr. Telford excised the diseased soft parts freely, cleared away the loose bone and teeth, and swabbed the surface of the whole wound with pure carbolic acid. Having washed away the excess of carbolic acid, he packed the cavity with gauze. After a few hours fomentations were applied frequently, and the wound was thoroughly cleansed at each dressing.

Immediately after the operation a subcutaneous injection of 2,000 units of antidiphtheritic serum was given, followed shortly by another injection of 4,000 units. For the next week 2,000 units were given daily, and stimulants and fluid nourishment were administered freely. The ulceration was completely checked, and within ten days the whole surface of the wound was covered with healthy granulations. After a few weeks, the patient's general health being quite restored, the chasm was filled by means of a plastic operation.

Mr. Telford is of the opinion that the recovery was "due to or at least materially hastened by" the full use of antidiphtheritic serum. He remarks that noma has been imputed to many different microorganisms, but his impression seems to be that the diphtheria bacillus, which has been prominent in several instances, may be at the bottom of the trouble. The nurse who took care of his patient was soon seized with sore throat, and, although there was no false membrane or other clinical sign of diphtheria, diphtheritic bacilli were found in swabbings from her fauces. He refers to Dr. L. Emmett Holt as having suggested the serum treatment of cancrum oris.

AN AGE OF TEMPERANCE.

The new birth of civilization in Europe seems to have been marked principally by a love of excitement; when not engaged in raiding one another's lands, the chiefs got up tournaments, characterized by duels to the death and by an inordinate amount of eating and drinking. They were as great trenchermen and tosspots in those days as they were fighters. Men who desired a quiet life were obliged to go into the priesthood, and not always with avail. Heavy drinking, passing

without particular comment, was a prominent feature of all grades of society till well on into the nineteenth century. Some of our older readers may remember the great temperance revivals of the early forties; from one extreme an important percentage of the population passed to the other. Not only was alcohol tabooed, but tobacco, tea, and coffee were classed with it as "stimulants," and to this day some people appear to identify these agents with the devils that were driven into the herd of swine and to believe that their use is confined to animals of similar proclivities. Outside of these chosen spirits, however, heavy drinking was still for many years a social habit; considerable business, especially in the way of large sales, was conducted in taverns. A man who could carry a heavy load of liquor without obvious symptoms was respected and even feared as a dangerous business rival.

There were heavy drinkers, however, who drank because it was the custom; they were not drunkards and could regulate their potations at will, forsake them altogether if necessary. These were the really normal people, and it is among them that a truly remarkable change has taken place within the last few years. What religious enthusiasm, threats, entreaties, punishment failed to bring about, a rapidly developing factor of our modern life has accomplished speedily. Whatever the effects of alcohol may be on the physical system, there is no doubt whatever about its temporary effects on the mental; it leads to diffusion of mind, desultory conversation, a general sense of what's the use of doing anything but enjoy one's self? This is a state of mind that the sharp, merciless competition of modern business methods could not utilize; human nature does not change, and excitement was demanded as of yore, but employees who felt the need of occasional excitement were required to find it in getting business away from their rivals. Drinking was simply forbidden, because it was found that the abstainers did more work and so obtained better results. The change was rapid, till now drinking is for the most part confined to purely social occasions and is much less a feature of those than formerly.

With moderate drinking has come moderation in other things. We have found that we can get along with much less food than was once thought indispensable. The heavy banquets of our forefathers would disgust a modern epicure. This epicure is not a great smoker, a lecher, a cold bath crank, a breakfast food adept, or an abstainer from anything he likes; neither is he a pale and drawn athlete. He has discovered that the secret of the approach to happiness that we may enjoy on this earth lies in true temperance, the moderate use of almost anything and everything. He is temperate even in his excesses and pays but a slight penalty for his little transgressions; he is a veritable *gourmet* of temperance. If men in general only understood the real delights of temperance, they would be temperate out of sheer sensuality.

NEISSER AND JACOBI'S *IKONOGRAPHIA DERMATOLOGICA.*

In the notice of this excellent work which we gave last week (see page 206) we accidentally omitted to state that it was published, not only by Urban & Schwarzenberg, of Berlin and Vienna, but also by the Rebman Company, of New York, by Rebman, Limited, of London, and by Masson & Cie, of Paris. It is not alone its polyglott title, but also its exceptional value, that justifies its simultaneous production by these four great publishing houses.

SANITATION IN SIAM.

We learn from Dr. Charles S. Braddock, Jr., chief medical inspector of the Siamese government, that the mortality in Bangkok from such diseases as plague, cholera, smallpox, dysentery, beriberi, and malarial fever is so great as to have alarmed the government and led it to authorize Dr. Braddock to write a little pamphlet on the means of preventing those diseases. The pamphlet is to be used in the schools, which are in the hands of Buddhist priests, to teach the children the rudiments of sanitation.

ESPERANTO.

This language, invented for international use, seems likely to meet with greater favor than Volapük, and it appears to have commended itself particularly to members of the medical profession. Indeed, it is the invention of a physician, Dr. Zamenhof, and one of our New York colleagues, Dr. Max Talmey, has produced a useful little Esperanto manual entitled *Practical and Theoretical Esperanto.* We understand that it is the first American book on the subject.

Obituary.

ALEXANDER HUTCHINS, M. D.,

OF BROOKLYN.

In the death of Dr. Hutchins we have lost a man who for many years was a distinguished practitioner and one who had at various times deserved exceptionally well of his professional brethren by his judicious and energetic performance of duties confided to him by them. His executive capability and his devotion to the welfare of the profession were thoroughly recognized, and he was universally respected.

News Items.

NEW YORK CITY AND STATE

Roosevelt Hospital to Be Enlarged.—Plans have been filed with the building superintendent for the further enlargement of Roosevelt Hospital by making over into a four story building the present two story amphitheatre at the south end of the administration building on Fifty-ninth Street. Double floors are to be introduced in the additional stories, and a large lecture hall will be built on the new second story. The two new upper floors will be fitted as dormitories for the hospital employees. The projected improvements are to cost $12,000. A new amphitheatre is being erected on another part of the hospital grounds, to replace the abandoned one.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending July 28, 1906:

	July 28.		July 21.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	98	10	60	17
Smallpox	..	..	.	..
Varicella	18	..	29	..
Measles	213	21	268	8
Scarlet fever	54	1	72	6
Whooping cough	43	16	59	7
Diphtheria	166	24	206	28
Tuberculosis pulmonalis	393	147	393	182
Cerebrospinal meningitis	12	12	3	12
Totals	997	231	1,090	260

PHILADELPHIA AND THE MIDDLE STATES.

Greater Authority for Meat Inspectors.—The meat inspectors have now been vested with State powers, and are at liberty to examine anything which they may think is in their province.

The Typhoid Fever Condition.—This disease is on the increase in Pittsburgh. The large number reported in Philadelphia for last week is due to the fact that one hospital has not sent in its report for some weeks.

Addition to the Methodist Hospital.—An addition will be made to the children's ward of the Methodist Hospital, consisting of a one story building to accommodate thirty-five beds and space for offices, a kitchen, and a laboratory.

New Presbyterian Hospital for Allegheny.—This new hospital will be erected at Montgomery and Sherman avenues, and will cost when completed about $250,000. The building will accommodate about 120 patients.

Dr. J. William White's Condition.—We are glad to be able to report that Dr. White is now practically well, and is spending a few weeks in the country, near Philadelphia. He will go to Scotland in August to represent the University of Pennsylvania at the 400th anniversary of the University of Aberdeen.

Founder's Day at Pittsburgh Carnegie Institute.—Founder's Day will be celebrated in April, 1907, instead of November of this year, in order to allow time to complete the new part of the building. The trustees have invited many noted men of Europe to the celebration and many acceptances have been received, among them being Alma-Tadema, Moberly Bell, Bryce, Koch, Harnack, Delcasse, Rostand, Maartens, Boule, and Van Karnabeek.

First Case of Typhus in Philadelphia in Eighteen Years.—The first case of typhus fever since 1888, was discovered in an immigrant from Denmark, who landed in New York on the 2nd of July. The illness developed after the patient had been in the city ten days. The case ended fatally after a duration of eight days, at the Municipal Hospital. Fortunately the man had gone directly from the ship to the house where he was taken ill.

The Health of Philadelphia.—During the week ending July 21st, the following cases of transmissible disease were reported to the bureau of health:

	Cases.	Deaths.
Malarial fever	1	0
Typhoid fever	130	7
Typhus fever	1	1
Scarlet fever	24	1
Chickenpox	10	0
Diphtheria	37	3
Cerebrospinal meningitis	3	1
Measles	38	1
Whooping cough	49	14
Tuberculosis of the lungs	90	46
Pneumonia	20	12
Erysipelas	5	1
Puerperal fever	1	2
Tetanus	1	1
Mumps	3	0
Cancer	15	20

The following deaths from transmissible diseases were also reported to the bureau of health: Tuberculosis, other than tuberculosis of the lungs, 12; dysentery, 4; cholera morbus, 4; diarrhœa and enteritis, under two years of age, 115. The infant mortality amounted to 217, 181 under one year of age, and 36 between one and two years of age. The whole number of deaths was 528, corresponding to an annual mortality of 18.69 in a thousand, in an estimated population of 1,469,126. There were 43 still births, 24 males and 19 females. No unusual meteorological occurrences are reported.

BOSTON AND NEW ENGLAND.

The Franco-American (R. I.) Medical Association, a newly organized society composed of the French-Canadian and French physicians of Rhode Island, held a regular meeting at Providence, on Tuesday, July 24th, Dr. Charles H. Boucher, president, in the chair. The following papers were read and discussed: Septicæmia, by Dr. C. H. Boucher; Hermaphrodism, by Dr. F. A. Ruest. It was decided to hold the next meeting at Woonsocket, in September.

Septicæmia from the Bite of a Diphtheritic Patient.—Dr. Edward H. Place, a house physician at the Boston City Hospital, is seriously ill from blood poisoning, the result of being bitten by a child patient in the diphtheria ward. The child was choking to death, and Dr. Place saved its life by performing intubation. As the physician was withdrawing the intubating tube the child seized one of his fingers in its teeth. The wound was quickly cauterized, but blood poisoning set in.

The New Commission for the Relief of Consumptives in Massachusetts.—The following nominations by the Governor of Massachusetts were laid before the Executive Council at its meeting on July 18th: Dr. Henry P. Walcott, of Cambridge, and Charles H. Porter, of Quincy, members of the State Board of Health; Charles H. Adams, of Melrose, and Dr. Jeffrey R. Brackett, of Boston, members of the State Board of Charity; and Dr. A. S. MacKnight, of Fall River, to serve as a commission to investigate and report as to measures for the relief of consumptives, and to investigate sites for State hospitals for consumptives. This commission is appointed by the Governor in accordance with a resolve passed during the current year requiring him to designate two members of the State Board of Health, two members of the State Board of Charity, and one other person to serve as a commission for the purpose indicated. The members of the commission are to serve without pay.

An Appeal for Subscriptions to the Teaching Fund of Harvard Medical School has recently been issued, by the officers of the Harvard Medical Alumni Association, to the 2,900 living graduates of the school. The letter which has been sent out is chiefly as follows: Dear Doctor: The Harvard Medical School is nearly ready to take up its residence in a set of new, ample, and stately buildings. Its outward habitation is sure to be all that the alumni could desire. But will the teaching therein given and received be as complete, as masterly, as the buildings? Are we doing all that we can to get and keep the best teachers in the Harvard Medical School? . . . With the introduction of the method of teaching medical students in small sections at the bedside or in the laboratory, a large number of instructors has become necessary, and to maintain Harvard in the position that is hers by right, and properly to develop this system of bedside instruction, many more instructors are needed. In the present state of the finances of the school their employment is out of the question. The school has this year had some experience of the value of paying one clinical instructor a salary sufficient to command most of his time, and plenty of other men would be only too ready to learn, if they could be assured adequate support. With the unusual expenses incident to the opening of the new school, the tendency is naturally toward retrenchment, something that should never be allowed to occur at Harvard. It is with this in mind that the council of the Medical Alumni Association has undertaken what should be an easy task, that of assuring to the school annually a sum of money sufficient to enable it to command the services of several more such instructors at the bedside or in the lab-

oratory. And it is felt that this end can be gained by asking for a large number of small or moderate annual subscriptions. The plan is for the committee to hand over annually to the treasurer of the university what has been collected, with the proviso that say, 80 per cent. of it (as the council may from year to year determine), be used for the purpose of raising the salaries of instructors and assistants, and the remaining 20 per cent. be added to the Alumni Endowment Fund, which shall be allowed to accumulate till it reaches $100,000, when its income shall be used as shall seem best for the school. It will be noted that we do not propose to pay adequate salaries, but to raise existing salaries to a living wage. Your committee is confident that if each alumnus will give what he can afford, be it ever so little, the project will be amply successful.

BALTIMORE AND THE SOUTH

The Ocmulgee (Ga.) Medical Association held a meeting at Hawkinsville, Ga., in the week of July 21st. The association was organized at Eastman in 1905, and is composed of physicians of the counties of Laurens, Dodge, Wilcox, and Pulaski. Its present membership is about thirty.

The Board of Medical Examiners for the State of Maryland.—The secretary of the Board, Dr. J. McP. Scott, of Hagerstown, has announced the names of the seventy-seven candidates who successfully passed the June examination and have been licensed to practise medicine in Maryland. The other members of the board are: Dr. Herbert Harlan, of Baltimore; Dr. Franklin Buchanan Smith, of Frederick; Dr. B. W. Goldsborough, of Cambridge; Dr. Edwin J. Dirickson, of Berlin; Dr. James A. Stevens, of Oxford; Dr. Lewis A. Griffith, of Upper Marlboro; and Dr. William M. Dabney, of the Union Protestant Infirmary, Baltimore.

The Syrian Leper, whose recent attempt to reach New York has furnished material for numerous newspaper paragraphs, has, it is reported, been utilized as a clinical subject, at a meeting of the county medical society at Elkins, W. Va., in which place the leper was kept for two weeks in a small tent on the fair grounds. It is further reported that while at Elkins the man bathed in the Valley River, and a temporary panic resulted from the spreading of this fact, as he bathed near a point from which the town draws its water supply. The unfortunate man has been returned to his home at Clarksburg, W. Va., and the heads of the boards of health of neighboring States have been notified of his whereabouts and warned to protect their borders.

Typhoid Fever in Washington, D. C.—According to the Washington *Star*, for July 25th, the typhoid situation in that city is becoming more and more serious, because the number of cases is increasing in even greater ratio than last year. July 24, 1905, there had been 243 cases reported for the year. Including the fourteen new cases brought to the attention of the health office since the *Star's* report closed yesterday (July 24th), the number this year is just 100 more than at the same time last year, the records showing that exactly 343 persons have been stricken with the fever since January 1st. The situation this year is in many respects similar to that of last year, because the outbreak in 1905 did not assume serious proportions until after the middle of July, and the same is true of the present outbreak, though there were many more cases reported from the real beginning of the so called "typhoid season" in 1906. The search for the cause of the spread of the disease is being energetically prosecuted, but apparently without definite result as yet.

CHICAGO AND THE WEST

A Divided Medical Office.—The mayor of an Indiana city, unable to decide between two aspirants for the office of city health officer, appointed both candidates, each for a term of one year and a half. By the toss of a coin the appointees decided who shall serve the first half of the term.

The Northern Tri-State Medical Association was to hold its thirty-third annual meeting at Put in Bay, Ohio, on Tuesday and Wednesday, July 31st and August 1st. The association comprises the states of Indiana, Michigan, and Ohio. The officers of the association are: Dr. W. J. Gillette, of Toledo, Ohio, president; Dr. T. F. Wood, of Angola, Ind., vice-president; Dr. W. F. Shumaker, of Butler, Ind., secretary; Dr. A. G. Holbrook, of Coldwater, Mich., treasurer.

Statement of Mortality in Chicago for the Week Ending July 21, 1906, compared with the preceding week, and with the corresponding week of 1905. Death rates computed on U. S. Census Bureau's midyear populations—2,049,185 for 1906, 1,990,750 for 1905:

	July 21, 1906.	July 14, 1906.	July 22, 1905.
Total deaths, all causes	517	498	627
Annual death rate in 1,000	13.15	12.67	16.42
By sexes			
Males	291	298	340
Females	226	200	287
By ages			
Under 1 year of age	148	123	188
Between 1 and 5 years of age	47	44	57
Between 5 and 20 years of age	39	39	43
Between 20 and 60 years of age	192	201	247
Over 60 years of age	91	91	92
Important causes of death—			
Apoplexy	5	11	14
Bright's disease	36	36	35
Bronchitis	8	10	4
Consumption	56	58	73
Cancer	23	18	29
Convulsions	6	9	16
Diphtheria	14	8	6
Heart diseases	33	40	57
Intestinal diseases, acute	98	68	150
Measles	3	1	3
Nervous diseases	16	26	24
Pneumonia	31	33	35
Scarlet fever	11	5	2
Suicide	10	5	9
Sunstroke	1	0	22
Typhoid fever	4	5	7
Violence (other than suicide)	41	31	38
Whooping cough	5	2	5
All other causes	116	132	98

GENERAL.

The American Academy of Ophthalmology and Oto-Laryngology will hold its annual meeting on August 30, 31, and September 1, 1906, at St. Clair, Michigan, instead of at Detroit, as originally announced.

The Medical Society of the Missouri Valley.—The nineteenth annual meeting of this association will be held at Council Bluffs, Iowa, on Thursday and Friday, September 6 and 7, 1906. The programme will be limited to twenty-five papers and titles must be sent to the secretary, Dr. Charles Wood Fassett, St. Joseph, Mo., before August 10th, in order to secure a place.

Origin of the Recent Outbreak of Smallpox at Colon.—The *Army and Navy Journal*, for July 28, 1906, says: Col. William C. Gorgas, Medical Department, United States Army, Chief Sanitary Officer of the Panama Canal Zone, in an official report on the recent outbreak of smallpox in the city of Colon, states that the first case of the disease appeared there on June 9, when the victim, a negro child nine years old, who had recently arrived from Carthagena, Colombia, was taken slightly ill and had an eruption which was not serious enough to prevent the child from playing constantly. Although inspectors noticed the condition of the child's skin, the case was so mild that smallpox was not suspected until several weeks later, when other cases appeared in the same locality. About thirty-five cases have been quarantined in tents, and the houses in which they lived, all of which are in the same part of Colon, have been thoroughly fumigated. So far there have been no deaths and Colonel Gorgas says there seems to be no danger of an epidemic of smallpox.

The Susceptibility of the West Indian Negro to Disease.—According to the *Army and Navy Journal*, for July 28, 1906, Col. William C. Gorgas, Medical Department, United States Army, Chief Sanitary Officer of the Panama Canal Zone, reports as a result of his observations the interesting conclusion that the rigorous sanitary measures instituted by the American authorities in the canal territory render the Jamaica negroes employed there peculiarly susceptible to pneumonia and other affections of the lungs and throat. It is explained that the West Indian negroes, not being accustomed to an abundance of fresh air, clean quarters, and a proper diet, become extremely sensitive to changes of temperature when subjected to strict health regulations, and that consequently the Jamaica negroes are not likely to prove as efficient in canal construction as it was originally believed they would be. Governor Magoon, of the Canal Zone, Chief Engineer Stevens, and Mr. Shontz, chairman of the Canal Commission, all agree that the West Indian negroes cannot be induced to eat sufficient wholesome food to keep them in sound health, and they add that lack of lung capacity and insufficient nourishment, rather than laziness, are responsible for the inability of the West Indians to do an amount of work equal to that done by white laborers from Spain.

Pith of Current Literature.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

July 26, 1906.

1. The General Practitioner and the Specialist, By JOHN L. HILDRETH.
2. The Treatment of Tuberculosis of the Bones and Joints, By JOEL E. GOLDTHWAIT.
3. The Diagnostic Significance of Decidual Tissue, By W. P. GRAVES.
4. Medical Department of the Japanese Army (*Continued*), By CHARLES LYNCH.

2. The Treatment of Tuberculosis of the Bones and Joints.—Goldthwait says that it should be remembered that this disease of the bones and joints is tuberculosis, and that while the structures involved may differ histologically from those in which the condition is more frequently seen, the essential characteristics are the same. Bone is naturally of greater density than the soft tissues, and consequently the time required for the development of the disease in such a tissue must be greater, this being also true in regard to the disintegration of the necrosed tissue and the final cicatrization. Except for this fact the disease is the same, having the same general pathology, the same variations as to types, the same prognosis, and requiring the same principles of treatment, as apply to tuberculosis in any other part of the body. The process in bone is almost invariably seen in either the small bones or in the cancellous ends of the long bones, and very rarely is the dense cortical bone affected. The process starting thus in bone extends in all directions, and may, in this way, involve the joint or the soft structures surrounding the bone. But joint tubercuolsis does not always start in the bone, but it may be, primarily, a synovial process, the bone being involved secondarily. One of the great difficulties lies in determining the limits of the process, and also what represents repair, both in the bone and in the soft parts. It occurs most frequently in childhood. In beginning the treatment the first motive should be to preserve the life of the individual, and to do it with as little mutilation as is possible. If to save life it is necessary to sacrifice a leg or an arm, that part should be sacrificed. But only if it is absolutely necessary. Other treatment is the same as in general tuberculosis: Abundance of good air, sunshine, good food, and rest. The author gives a short description of the surgical operations.

3. The Diagnostic Significance of Decidual Tissue.—Graves reviews the modern views concerning the ætiology and histology of decidual tissue, and reports five cases from which he draws the conclusions that: 1. The passage of a decidual membrane in a patient with symptoms of pregnancy and with a mass on one side, together with a history of flowing, is extremely significant of an extrauterine pregnancy, but cases do occur where this seemingly conclusive chain of evidence is not proof of an extrauterine gestation. 2. An ordinary miscarriage may be preceded by the exfoliation of a part or the whole of the decidua vera. 3. The pathologist who receives a specimen of decidual tissue should make his report with extreme reservation, to avoid the commission of a serious surgical blunder. 4. It may be impossible to differentiate, even with the greatest microscopical care, between an exfoliated dysmenorrhoic membrane and the decidua of an extrauterine pregnancy, and the pathologist before committing himself to a diagnosis should insist on knowing accurately the history of the patient.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

July 28, 1906.

1. The Progress of Medicine in the Philippine Islands, By VICTOR G. HEISER.
2. Two Cases of Generalized Blastomycosis, By C. CHRISTENSEN and LUDVIG HEKTOEN.
3. The Clinical Significance of Variations of Wrist and Ankle, By THOMAS DWIGHT.
4. The Diplobacillus of Morax-Axenfeld, By BROWN PUSEY.
5. Treatment of Loosened Teeth, By M. L. RHEIN.
6. Interstitial Gingivitis Due to Autointoxication as Indicated by the Urine and Blood Pressure. Diagnosis, By EUGENE S. TALBOT.
7. Palliatives for Hay Fever, By SOLOMON SOLIS-COHEN
8. The Value of Routine Urine Examination. A Statistical Inquiry, By M. H. FUSSELL.

2. Two Cases of Generalized Blastomycosis.—Christensen and Hektoen describe two cases of disseminated blastomycosis. In both cases the dissemination of the blastomycetic infection appears to have taken place quite suddenly and without the presence of any chronic lesion that might be regarded as the primary localization. The hypothesis that blastomycosis may result from aerial infection might form the basis for experiments to determine (a) whether the organisms in question are conveyed easily in air currents when dry, (b) whether they retain their vitality and infectiousness after drying, and (c) whether they are carried in minute droplets of sputum in which we know they may occur in pulmonary blastomycosis. As yet no effective treatment has been discovered; the authors used a sterile vaccine, prepared from the blastomycetic organism, based upon A. E. Wright's method for the treatment of infections by vaccines, composed of corresponding bacteria. But the patients left the hospital at a time when no conclusion of value could be drawn as to the results of the vaccine.

3. The Clinical Significance of Variations of Wrist and Ankle.—Dwight gives four classes of variations: 1. Those due to an increase in the number of bones, owing to the persistence of element which normally fuse or disappear (the styloid bone of the wrist, the subdivided scaphoid of the wrist, the os trigonum of the ankle). 2. Those due to a diminution of the bones, owing to the union of elements, usually distinct (union of semilunar and cuneiform of the wrist, tarsus, and metatarsus of the ankle). 3. Those due to unusual relations between bones (astralagus and os calcis). 4. Those due to the exceptional development of processes usually small or absent (enormous peroneal process, etc.). These all occur at certain definite points and the surgeon must therefore reckon with them.

4. The Morax-Axenfeld Diplobacillus.—Pusey thinks from his finding ten cases of infection of the Morax-Axenfeld diplobacillus in a small clinical material in six months that this bacillus is a frequent cause of infection in this country. We have a specific remedy for it in zinc.

7. Palliatives for Hay Fever.—Solomon Solis-Cohen gives a description of the treatment of hay fever: 1. Suprarenal preparations. The medicinal substances must be absorbed from some mucous membrane, not the stomach, as it is not an eligible channel of administration, the digestive juices and the action of the liver being injurious. The eye, the tongue, the nose, the pharynx may be utilized. He has employed the adrenalin chlorid solution of Takamine and the epinephrim of Abel. 2. Pollantin. Solis-Cohen has found Dunbar's antipollenic serum to be only a palliative remedy, but that in many instances. Both pollantin and suprarenalin powders should be used as a snuff. 3. Internal medication. The author recommends the use of atropine sulphate or hyoscine hydrobromate, or eumydrin. If asthma should occur a tablet of suprarenalin or adrenalin may be placed on the tongue, or suprarenalin or adrenalin may be sprayed into the nose. The article contains fifteen valuable prescriptions. But when possible patients should go to an immune region, the less fortunate must in addition to the use of drug treatment observe certain precautions. Dust, smoke, direct sun light, heat, hurry, and excitement must be avoided. The

bowels, the skin, and the kidneys must be kept normally active or even a little stimulated. The diet must be simple, and on the whole, sparing. A tepid bath, followed by a brisk cold rub, just before going to bed, and a hot sponge, followed by a brisk cold rub in the morning, after the rest following pollantin or suprarenal snuffing will be found to conduce very much to comfort.

8. **Routine Urine Examinations.**—Fussell answers Dr. Richard C. Cabot, who stated that: "The attempt to estimate the anatomical condition of the kidney by the measurement of albumin and the search for casts is fallacious in the extreme." "The most reliable data about the urine are those most simply and quickly obtained, the twenty-four hour quantity, the specific gravity, and the color." Fussell cites cases through which he intends to prove that an urine examination is of the utmost value, and that a tentative diagnosis only can be made without it in as many as twelve per cent. of all cases treated. Urine examination should be routine. To examine the urine only when symptoms point to the genitourinary tract is to miss the diagnosis in many important cases, and often if the examination is made only after such symptoms appear, it is too late to intervene for his patient's recovery.

MEDICAL RECORD.

July 28, 1906.

1. Health of School Children. Statement of the Endeavors of the Board of Education to Conserve the Health of Children Under Its Care.
By LUTHER HALSEY GULICK.
2. The Physical Care of School Children,
By ROWLAND GODFREY FREEMAN.
3. Treatment of Appendicitis, By F. D. GRAY.
4. Comparative Treatment of Intestinal Amœbiasis,
By WILLIAM R. MOULDEN.
5. A Review of the Evolution of the Modern Surgical Treatment of Fibroid Tumors of the Uterus,
By LEROY BROUN.
6. The Administration of Drugs to Concurrently Retard and Stimulate Systemic Oxidation,
By BERNARD OETTINGER.

1, 2. **Health of School Children.**—Gulick reviews the condition of the public schools of New York city, speaking about the ventilation, heating, purity of air, accommodations, lighting, seating, scoliosis, overstudy, feeble minded children, defective children, physical training, instruction in physiology and hygiene, and concludes in saying that it would not be out of place to indicate some ideals toward which additional progress should be made with reference to the health of school children. There should be individual care, personal inquiry, and knowledge of the home life of approximately the lower tenth of every class. We ought to have consecutive records of all children as to age, height, weight, eye, ear, nose, throat, heart, lungs, etc. Only in this way can the highest degree of efficiency be secured. The size of classes should be decreased, so that the nervous strain upon teachers will be lessened, and that a larger degree of individual attention can be given. The playground space for children should be increased. Special classes and schools should be organized for defective children. Freeman is of the opinion that the ideal public school should take the children as many hours a day as practicable. They should come to school as early as eight in the morning and enjoy an hour's outdoor play under supervision before undertaking their tasks. The periods devoted to each subject should be short, with frequent recesses. At noon a nutritious but simple meal should be furnished them. In the afternoon the easier subjects, the manual work, and the preparation for the lessons of the next day should be taken up. Opportunity for out of door exercise under supervision until late in the afternoon should be provided. In both private and public schools a much more severe examination for any evidence of contagious diseases should be made than at present. All children with colds should be absolutely excluded from school, and children with eruptions should be excluded until the eruption has been pronounced by a competent person noncontagious in character.

3. **Treatment of Appendicitis.**—Gray says that in America, at present, the advisability of operation at some stage of appendicitis—or subsequently—is conceded by a large majority of the profession and laity. This same majority agrees upon operation in all early cases, barring some strong contraindication. The term "early" is preferable to the measure of a certain number of hours after the onset, and it indicates absence of complications, such as perforation, abscess, local, spreading, or general peritonitis, infection of pelvic organs, or such systemic effects as septicæmia, pyæmia, pneumonia, etc. A smaller but increasing proportion of the profession would defer operation, in late cases, where one or more of the stated complications exist, until the interval, which they believe will come about by means of preliminary treatment, popularly known as Ochsner's, because Dr. Ochsner, of Chicago, has more thoroughly and persistently than anyone else, practised and publicly advocated its use. It is consistent also to speak of the Ochsner method as the conservative, contrasted with the radical plan of treatment, wherein immediate operation is done at any stage of the disease, when the diagnosis is clear and the patient not moribund. The author thinks that there exists a more or less hazy idea of Ochsner's concept of conservative treatment of appendicitis, and he therefore gives a synopsis of Ochsner's theory.

4. **Comparative Treatment of Intestinal Amœbiasis.**—Moulden has observed five hundred and forty-two cases of amœbic dysentery, treated in the Bilibid prison in Manila, P. I., and comes to the deduction that the copper seems to have a more or less selective action upon *Amœba coli* as well as upon the lower forms of vegetable life, such as the algæ; that copper solutions are far better borne by the patient than quinine; that patients make a more rapid recovery under its use, gaining flesh and strength at least twenty-five per cent. more rapidly than under any other method known to the writer; and, most important of all, the cases stay cured, provided, of course, that treatment is kept up a reasonable time after the disappearance of the amœbas from the stools. As the cases treated by copper number over two hundred, it seems reasonable to conclude that the method is based upon sufficient ground to warrant its thorough trial by anyone interested in this subject.

5. **A Review of the Evolution of the Modern Surgical Treatment of Fibroid Tumors of the Uterus.**—Broun states that we can conserve the interests of the patients best by advising an early removal of such fibroid tumors as may exist, knowing that the sooner such a course is adopted the safer will be the operation, and the greater will be the likelihood of saving the uterus and removing the tumors alone. In closing he wishes to accentuate his conviction that we conserve the interest of our patients when we advise the discarding of palliative measures and counsel the removal of fibroid tumors, whether they are giving rise to distressing symptoms or not. This belief is based on the knowledge that the death rate from the removal is now less than one per cent. in individual statistics to four per cent. in combined statistics, while with patents who have fibroid tumors and are not given operation the mortality directly and indirectly the result of these tumors is at least ten per cent. Further, in removing the intrapelvic smaller tumors there is less risk to the patient and a greater possibility of saving the uterus.

BRITISH MEDICAL JOURNAL.

July 14, 1906.

1. Mendelian Heredity and Its Application to Man, By W. BATESON.
2. A Further Series of Enucleations of the Prostate, By Sir W. THOMSON.
3. A Case of Total Laryngectomy for Recurrent Epithelioma of the Larynx, By S. WHITE.
4. Appendicitis and Abscess Formation, By J. D. MALCOLM.
5. Three Cases of Gastrojejunostomy, By F. C. WALLIS.
6. The Relation of Ulcerative Colitis to Dysentery, By A. E. CARVER.
7. The Effect of X Rays Upon the Leucocytes in the Blood and Bone Marrow in Leucæmia, By R. J. M. BUCHANAN.
8. A Case of Lipoma of the Pericardium, By M. V. MCKECHNIE.
9. A Case in Which Large Quantities of Dipterous Larvæ Were Passed Per Anum, By C. H. CATTLE.
10. Report of Special Chloroform Committee of the British Medical Association. (*a*) Introduction. (*b*) Appendix I. Preliminary Report Upon the Rate of Absorption of Chloroform During the Induction of Anæsthesia, By T. G. BRODIE and S. T. WIDDOWS.
    (*c*) Appendix II. Report on the Administration of Chloroform and on the Proportion of the Chloroform Administered Which is Retained by the Patient, By A. V. HARCOURT.
    (*d*) Appendix III. On the Effect of Chloroform in Conjunction with Carbonic Dioxide on Cardiac and Other Muscle. By C. S. SHERRINGTON and S. C. M. SOWTON.

2. Enucleation of the Prostate.—Thomson practices the suprapubic method of enucleation of the prostate gland. His paper is based on a series of eighteen cases, of which five died and thirteen recovered. Nine patients were over seventy years of age; the youngest was fifty-four and the eldest seventy-six. Two of the tumors were very large, weighing six and ten ounces respectively. Three came away in one mass, including the prostatic urethra. When the prostate has been removed the covering of it which remains in the bladder is very thin. It has been in some parts subjected to much bruising and its vitality is distinctly lowered. Some of this occasionally dies, and upon it deposits of phosphates may occur, and the fragments extended through the wound. For this reason the opening in the bladder should be shaped by a large tube, about three quarters of an inch in diameter, so as to afford ample space for free washing out and the carrying away of débris and deposit. Previous to operation the bladder should be brought into as healthy a state as possible, by careful catheterization and washing out, and by the administration of some drug, such as sodium benzoate, to secure acidity of urine. After operation the bladder must be copiously flushed with boric solution through the upper wound first, then through the urethra, and finally again through the wound. A serious danger is the existence of extensive sloughing in the wound and infection of the cellular tissue. In cases of hæmorrhage from the prostate, when the bleeding is continuous and excessive, and not yielding to any remedy, the only way open is to expose the seat of bleeding, to enucleate the prostate if that be necessary, or to plug the bladder. The operation of suprapubic enucleation of the prostate is distinctly dangerous, apart from the fact that the patients are aged persons, broken down by distressing suffering. The Trendelenburg position is of use only if a close inspection of the interior of the bladder is required. Of the fatal cases one died of ether bronchitis; one fourteen days after operation from a suddenly developed peritonitis; one from pelvic cellulitis; one from sepsis; and one twelve weeks after operation from gangrene of the lung.

6. Colitis and Dysentery.—Carver brings forward evidence to show that the bacillus of dysentery does occasionally occur in cases of colitis. In three cases of ulcerative colitis, the blood of two exhibited an agglutinative power towards the dysentery bacillus. During 1902 there occurred in London an outbreak of acute colitis, in which the disease presented the symptoms and pathological lesions of acute bacillary dysentery, and seemed also indistinguishable from acute cases of asylum dysentery.

7. X Rays in Leucæmia.—Buchanan has studied the effect of x rays upon the leucocytes in the blood and bone marrow in cases of leucæmia. Clinically the action of the rays is manifested by a rapid diminution of the enlarged spleen, and a great reduction in the number of the leucocytes in the blood. They may even fall to normal. The finely granular and the eosinophilic leucocytes, characteristic of leucæmia, are rapidly reduced in numbers and may disappear entirely. The writer is of the opinion that there is evidence to show that the action of the rays is of a twofold character, (1) by inhibiting overproduction in the marrow, and (2) by a destructive influence over the leucocytes themselves. The effect is especially noticeable in the cell structures which respond normally to basic dyes, less so in those which respond to acid dyes. The myelocytosis recurs rapidly when the x ray treatment is discontinued.

THE LANCET.

July 14, 1906.

1. Dendrites and Disease, By Sir W. R. GOWERS.
2. Stuttering, By W. S. COLMAN.
3. Mycrobic Cyanosis, By G. A. GIBSON and C. C. DOUGLAS.
4. The Treatment of Surgical Tuberculosis, By V. W. LOW.
5. Hints to the General Practitioner on Eye Strain and Its Symptoms, By J. HINSHELWOOD.
6. The Origin of Choanal Polypi, By G. KILLIAN.
7. Buboes and Their Significance in Plague, By W. HUNTER.
8. Two Cases of Epidermolysis Bullosa, By A. F. SAVILL.
9. A Case of Fracture of the Upper End of the Tibia From Indirect Violence, By R. L. KNAGGS.
10. A Simple Form of Clinical Viscosimeter, By A. D. DENNING and J. H. WATSON.
11. Notes Upon Five Cases of Renal Neoplasm, By D. WALLACE.

2. Stuttering.—Colman states that stuttering children should be brought into as good general condition as possible. No drug treatment has any effect on the stuttering. The main objects of treatment are: 1. The removal of the shallow, ill managed respiration so frequently present. If caused by obstruction the latter should be removed. Systematic breathing exercises should be taught and practiced daily. 2. The patient must be taught to speak from a well filled chest. 3. He must be taught to speak with a resonant and modulated voice instead of the usual, low muttering intonation of the stutterer. The difference between a full resonant voice and shouting must be taught. 4. He must learn to speak slowly and distinctly, making all the consonants clear. 5. These practices must be kept up until habitual. From three to six months will be required in any severe case, and for the first month little apparent progress will be made.

3. Microbic Cyanosis.—Gibson and Douglas report a case of cyanosis occurring in a woman, aged thirty-six years, who had suffered for some years from headaches and weakness. Methæmoglobin was very distinctly present in the blood, but absent from the stools, nitrites were present in the blood and saliva, but existed only in traces in the fæces, and the latter possessed no power of converting normal ox blood into methæmo-

globin. This pointed to a hæmatogenous formation of the nitrites. Suspecting that the formation of nitrites might be due to bacterial activity in the blood itself, cultures were made from the blood. An organism either identical with the bacillus coli communis, or some very closely allied organism of the colon group was obtained in pure culture. A provisional reading of the case seemed to be this, that the original source of mischief lay in the bowel, that a systemic infection had taken place, that nitrites were being constantly produced in the body in varying amounts (thus possibly explaining the varying degree of cyanosis), and finally that nitrites acting on the hæmoglobin constantly kept a varying amount of it in a state of methæmoglobin—a condition in which oxygen is very firmly united with the hæmoglobin molecule and will not separate from it for the needs of the body cells. The condition belongs to the group of affections often termed false cyanosis. The treatment adopted consisted in a course of intestinal antisepsis combined with the employment of abundant diluents.

4. Surgical Tuberculosis.—Low sums up the treatment of osseous, arthritic, and glandular tuberculosis as follows: 1. In all cases "open air" treatment should be organized to meet the circumstances and requirements of the particular case. 2. In every case the patient's powers of resistance to the disease should be periodically measured by suitable blood examination. 3. Where the resistance is found low and there is no evidence of an excessive autoinoculation, use should be made of therapeutical inoculations of Koch's new tuberculin in doses that are accurately controlled both as regards their amount and repetition by examination of the blood. 4. In cases where there is evidence of excessive autoinoculation absolute rest with complete fixity of the diseased part should be prescribed. 5. In cases where it is evident that the diseased area is circumscribed and practically cut off from the circulation of tissue fluids efforts should be made to improve the circulation through the diseased area. The means we have at our disposal are fomentations and the use of certain mild irritants—e. g., liniment of iodine and Scott's dressing, light therapy, general massage, and local massage with carefully regulated movements. 6. Operative procedures should be directed to the removal of the dead, inert material, whether pieces of bone or collections of pus, and should be conducted with the most scrupulous aseptic precautions. By means of modern cystoscopy tubercle of the bladder and kidney may be diagnosticated even before bacilli have appeared in the urine and constitutional treatment can therefore be adopted at an earlier stage with consequently greater hope of success. At a later period in the disease the condition of the second kidney in a case of renal tuberculosis can be ascertained with greater accuracy, thus obviating the removal of the less diseased kidney.

6. Choanal Polypi.—Killian's paper on choanal or benign nasopharyngeal polypi, is based on an experience of twenty-two cases. They are usually unilateral and solitary, and have a peculiar pear shaped form, the broad end lying in the nasopharynx, while the stalk extends into the nose. They may attain considerable size, and are subject to inflammatory changes which may end in partial or total gangrene. The treatment is very favorable, as they are easily laid hold of, and readily torn out on account of their slender stalk. In the majority of cases the polypi do not recur. There is usually a profuse discharge of serous fluid after the extraction, and examination of the antrum shows a slight chronic inflammation. The writer holds that choanal polypi originate within the antrum of Highmore, and are due to inflammation of the antral mucous membrane.

LA PRESSE MEDICALE.

June 30, 1906.

1. Enterocolitis and Appendicitis, By PAUL RECLUS and DIEULAFOY.
2. Rabies and the Capture of Stray Dogs, By H. MARTEL.

1. Enterocolitis and Appendicitis.—Reclus takes Dieulafoy again to task on account of the statements he has made in regard to operations performed for appendicitis when that disease did not exist, and Dieulafoy makes a brief reply in which he claims in effect that those statements were correct.

July 4, 1906.

1. The Bacillus of Eberth in the Intestines of Healthy Persons. Clinical and Epidemiological Consequences, By P. REMLINGER.
2. The Internal Secretion of the Testicle in Ectopia of that Organ, By RÉNE DE GAULEJAC.
3. A Good Formula for a Laxative, By ALFRED MARTINET.
4. Cryoscopy and Radioactivity of Mineral Waters, By R. ROMME.

1. The Bacillus of Eberth in Healthy Persons.—Remlinger claims that the bacillus typhosus of Eberth has been demonstrated in the intestines of healthy persons who had come in contact with other persons suffering from typhoid fever. This is a very important fact from an epidemiological point of view, because in this way the pathogenic germs may be disseminated by healthy persons at long distances from the patient from whom they were contracted.

3. Formula for a Laxative.—Martinet suggests the administration twenty minutes before eating of a wineglassful of tepid water, to which has been added a powder, consisting of: Dry peptone, 5 grammes; sodium bicarbonate, 1 gramme; together with a teaspoonful of the following mixture: Tincture of nux vomica, extract of cascarilla, extract of gentian, āā 3 grammes; bitter orange peel, 10 grammes; mint water, 120 grammes.

July 7, 1906.

1. Radical Cure of Inguinal Hernia. Some Points of Detail and Niceties of Bassini's Operation, By M. SAVARIAUD.
2. The Procurement of Normal Aseptic Milk for the Food of Infants from Raw Milk, By G. LINAS.

2. Procurement of Normal Aseptic Milk for the Food of Infants.—Linas describes an elaborate preparation of cow's milk intended for infants' use and insists upon three points as essential: 1, That the cow must be in perfect health in every way; 2, that the food of the cow should be determined with reference to the intention that her milk is to be used for the nutrition of infants; 3, that certain procedures should be adopted in the collection and the treatment of the milk by means of which an aseptic milk may be obtained.

BERLINER KLINISCHE WOCHENSCHRIFT.

June 25, 1906.

1. The Position of Dermatology in Medicine, By E. LESSER.
2. Two Cases of Tumor of the Spinal Meninges Successfully Operated In, By H. OPPENHEIM and M. BURCHARDT.
3. Leucæmia Without Leucæmic Blood, By C. A. EWALD.
4. Hay Fever and Its Serum Treatment, By KAMMANN.
5. Treatment of Gonorrhœa with Stasic Hyperæmia, By S. JACOBY.
6. The Diagnosis of Carcinoma of the Stomach (*Concluded*), By L. KUTTNER.

2. Two Cases of Tumor of the Spinal Meninges Successfully Operated In.—Oppenheim and Burchardt report in detail the clinical histories and operative procedures required for the removal, first of a fibroma or fibrosarcoma three centimetres long from the meninges of the spinal cord beneath the sixth cervical vertebra, where it had caused serious compression of the cord, in a woman, thirty-three years of age; and, second, a soft, friable tumor four or five centimetres long, from

the arachnoid beneath the fourth, fifth, and sixth cervical vertebræ in a man, forty-nine years of age. The subsequent histories of these patients are also described minutely.

3. **Leucæmia Without Leucæmic Blood?**—Ewald reports a case of clinically typical leucæmia in which none of the conditions of the blood usually present in that disease could be detected in spite of almost daily examinations.

6. **Diagnosis of Carcinoma of the Stomach.**—Kuttner says that in obscure cases the diagnosis may be made by means of examination of the contents of the stomach. Constant absence of blood renders the presence of a gastric carcinoma improbable. Constant presence of pus, or of purulent mucus, or the presence of blood and pus in the empty stomach, indicates the presence of carcinoma, because suppuration from other causes can usually be excluded with ease. Search should be made for particles of tumor tissue in the contents of the resting stomach, or after a test breakfast. The presence of albuminous fluid in the empty stomach should be looked for, and amœbæ and flagellates sought for in the mucus of the empty organ.

July 2, 1906.

1. Hyperæmia Treatment in Pulmonary Tuberculosis, By H. LEO.
2. Modern Surgery of the Kidney, Diagnosis, and Results, By H. KÜMMELL.
3. Pathology of Basedow's Disease, By M. BERNHARDT.
4. Experimental Investigations Regarding the Pressure of the Blood in Uranephritis and Regarding the Influence of Food in Different Forms of Nephritis, By J. BRODSKI.
5. a. Case of Cured Lymphosarcoma; b, Syphilitic Thrombosis of the Portal Vein; c, Case of Chronic Dysentery which Ran a Course which Resembled that of a Carcinoma of the Rectum, By C. A. EWALD.

1. **Hyperæmia Treatment in Pulmonary Tuberculosis.**—Leo sums up his article in the following conclusions: 1. The attempt to overcome pulmonary tuberculosis by the artificial production of hyperæmia of the lungs is based on rational grounds. 2. The only means by which hyperæmia may be secured is through stasis. 3. The simplest method by which this can be produced is by position, the thorax being placed at a low level with the head moderately and the limbs considerably elevated. The daily maintenance of this position is gradually increased to as long as possible. Even at night the upper part of the body should not be elevated. 4. This method is absolutely contraindicated by a tendency to hæmorrhage. 5. Whether other means of producing hyperæmia, such as Bier's apparatus, are of therapeutical value in this connection must be determined by further observations. The same is true regarding the combination of this treatment with the administration of tuberculin.

5. **a, Cured Lymphosarcoma; b, Thrombosis of the Portal Vein; c, Course of a Dysentery Which Resembled Carcinoma of the Rectum.**—Ewald's first case was one of lymphosarcoma of the tonsils and glands of the throat which was cured, after excision of the tonsils and the confirmation of the diagnosis, by exposure to the Röntgen rays and the internal administration of arsenic. His second case was that of a man, thirty-five years of age, who suffered from syphilitic periphlebitis, and was found on autopsy to have died as the result of thrombosis of the portal vein, although the usual symptoms of this condition, ascites, icterus, diarrhœa, and bloody stools, had not been present. His third case was that of a woman, fifty-five years old, who suffered from chronic dysentery associated with symptoms that resembled those produced by carcinoma of the rectum, and died after a sudden rectal hæmorrhage. On autopsy no carcinoma could be found, but there was present about the sigmoid flexure an abscess, apparently due to perforation of a dysenteric ulcer, which had eroded a mesenteric artery and thus produced the fatal hæmorrhage.

MUENCHENER MEDICINISCHE WOCHENSCHRIFT.

July 3, 1906.

1. Symptoms of Disease of the Frontal Portion of the Brain, By ANTON.
2. Achylia of the Stomach, By LEO.
3. Treatment of Stenosis of the Œsophagus By GERHARDT.
4. Sterilization of Catgut, By VON HERFF.
5. A Simple Measure, By GAUSS.
6. The Demonstration of Spirochæta Pallida in Tertiary Syphilis, By TOMASCZEWSKI.
7. The Diagnostic Value of the Demonstration of Spirochætæ in Congenital Syphilis, By SIMMONDS.
8. Monolateral Elevation of the Temperature on the Paralyzed Side of the Body in Focal Cerebral Disease, By CHOTZEN.
9. Ganglion Cells and Nerve Fibers, By KOHN.
10. The Chromosaccharometer, a New Apparatus for the Quantitative Determination of the Sugar in the Urine, By BENDIX and SCHITTENHELM.
11. Treatment of the Pedicle in Gynæcological Operations, By THEILHABER.
12. The Clinical Peculiarities of the Mental Disturbances of the Population of Our Great Cities, By GAUPP.

1. **Symptoms of Disease of the Front Brain.**—Anton says that the human front brain is a double organ connected with another double organ, the cerebellum. In this organ compensation for the focal disease is particularly often met with, and on this account the symptoms may be obscured much more than those produced by disease in other parts of the brain, or may be recognizable only as a quantitative reduction of function. When evident the symptoms are disturbance of balance in standing or walking, the same as in cerebellar disease, with a change in the gait and in the position of the body, disturbances of the "higher coordination" of the movements of the upper extremities, the combination of separate movements into one complex act. On account of the nearness of the motor region paresis or convulsions are frequent complications, the same as in motor aphasia. When the disease is situated in the orbital part of the front brain anosmia may aid in the localization of the disease, as this symptom is not present in diseases of the septum pellucidum. In monolateral disease characteristic psychical symptoms have not yet been recognized, but when it is bilateral and the trabeculæ are involved psychical symptoms may be produced which resemble those of paralysis. In many cases the diagnosis can be made only through the combination of the physical signs which have been mentioned with various psychical disturbances which depend not alone on the location, but also on the kind, course, and intensity of the disease.

5. **A Simple Measure.**—Gauss describes an instrument which he has devised to measure the conjugate diameter of the pelvis in obstetrical cases.

6. **Spirochæta Pallida in Tertiary Syphilis.**—Tomasczewski has been able to demonstrate the presence of the spirochæta pallida in five out of ten cases of tertiary syphilis since the beginning of the present year.

7. **Diagnostic Value of Spirochætæ in Congenital Syphilis.**—Simmonds claims that the presence of the spirochæta pallida in the organs of a fœtus or an infant is fully sufficient to establish the diagnosis of syphilis. When they cannot be found in a macerated fœtus syphilis is excluded in all probability, but such exclusion by a negative result cannot be claimed in infants.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

July, 1906.

1. Further Observations on the Anatomy of the Duodenum, By A. J. OCHSNER.
2. The Sufficiency of Simple Intercostal Incision in Acute Empyema, By J. F. LEYS.

3. Traumatic Intraperitoneal Rupture of the Bladder, By A. P. C. Ashhurst.
4. Experiments on the Great Omentum, By L. S. Dudgeon and A. Ross.
5. Sauerbruch's Operative Chamber. History. Experiments, and Experiences, By B. Hahn.
6. The Surgical Treatment of Hepatic Cirrhosis, with Special Reference to Biliary Drainage, By C. G. Cumston.
7. Partial Dislocation of the Fifth Lumbar Vertebra Upon the Sacrum, By H. O. Feiss.
8. The Practical Significance of a Trace of Albumen in the Urine, By J. P. Tunis.
9. Alcoholic Multiple Neuritis, By C. W. Burr.
10. Acute Paranoia Exhibiting Cyclical Relapses, By T. J. Orbison.
11. The Breus Hæmatommole, By A. H. Bill.
12. Isolation of Typhoid and Colon Bacilli from Drinking Waters, By T. A. Starkey.
13. An Epithelial Lined Fistula in Ano in an Infant, By M. W. Ware.
14. The Advisability of Eliminating the Terms Menière's Disease and Menière's Symptoms from Otologic Nomenclature, By E. Amberg.

1. **Further Observations on the Anatomy of the Duodenum.**—Ochsner recalls the anatomical fact which he demonstrated in various dissections that there is a marked thickening of the circular fibres of the duodenum just below the entrance of the common duct. In some cases they form a distinct sphincter, in others a broad circular band, and in others two bands with an interval of ordinary thickness between them. This fact explains the vomiting of bile when the stomach is empty, and that in dilatation of the stomach without pyloric constriction a pyloric ulcer will often extend to the duodenum. It explains the stomach symptoms sometimes observed in gallstone disease, and also explains a contracted first portion of the jejunum with a distended duodenum. It also explains the bile staining of the duodenum above the common duct in the cadaver. The author thinks these muscular fibres act as a sphincter to facilitate the mixture of the bile and pancreatic juice in the duodenum. Cuts showing this anatomical condition in cadaver accompany this article.

2. **The Sufficiency of Simple Intercostal Incision in Acute Empyema.**—Leys thinks it exceptional for a chest to have intercostal openings too narrow for the adequate drainage of acute empyema. In chronic cases excision of ribs may be required when lung expansion is insufficient to aid in expelling pus. The best treatment for acute empyema, when the diagnosis has been confirmed with the exploring needle, is simple incision through an intercostal space. Resection of a rib is not only quite unnecessary, but undesirable in practically all acute empyemas. The dangers from the entrance of external air to the pleural cavity have long been shown to be fallacious. The inutility, and in some cases the danger of irrigating, and in some cases the danger of irrigating the pleural cavity with antiseptic solutions have also been shown. The operation itself is regarded by the author as so simple that it is within the power of any physician of ordinary acquirements and a few simple instruments.

3. **Rupture of the Bladder.**—Ashhurst believes that with this accident one should open the belly, suture the rent, evacuate the urine, and drain the wound. When this is done within a few hours after the injury most cases may be saved. After twelve hours the possibility of recovery is greatly diminished. The incision should be a large one, in the hypogastric region. The rent in the bladder must first be found and sutured, the cleansing of the pelvis being deferred, if possible, until this has been done. The Trendelenburg position is advised, and the intestines should be kept out of the way with gauze compresses. Silk is preferred as suture material, a single row of seroserous sutures being passed, and reinforced where necessary. Mattrass sutures are advisable, a long needle holder being used. Some writers have advised that the wound be not sutured at all, but the mortality is high in such cases. The peritoneal cavity should be drained by a tube in the rectovesical pouch with suprapubic exit.

4. **Experiments on the Great Omentum.**—Dudgeon and Ross studying the bacteriology of peritonitis found that the *Staphylococcus albus* was the first organism to appear, and that organisms were frequently found on the surface of the gut, but not always in the exudate. Three series of experiments upon guinea pigs were made. The material inoculated was proved sterile by culture tests. The conclusions were that the *Staphylococcus albus* is often a normal inhabitant of the omentum, and that when nonbacteriological substances are injected into the peritoneal cavity of animals the *Staphylococcus albus* can usually be recovered from the great omentum. The same white coccus was cultivated from the omentum in many cases in which the peritonæum was opened, apart from peritonitis.

6. **Surgical Treatment of Hepatic Cirrhosis.**—Cumston considers separately hypertrophic cirrhosis with icterus, hypertrophic cirrhosis without icterus, and vascular cirrhosis. In the first of these conditions surgical interference is indicated because of the failure of medical treatment in an inevitably fatal disease. Further, such interference is usually benign, and the results have thus far been very good. In the second condition medical treatment has been equally ineffective, and radical cures have apparently followed surgical treatment. As to the third condition the sclerosis cannot be removed by medical means, but contracted livers are not amenable to treatment and death will inevitably result. In several cases improvement followed the treatment which for each of these conditions was the drainage of the biliary tract. The methods to be employed may be either cholecystogastrostomy, cholecystenterostomy, or cholecystostomy. The last of these is the most favorable, the gallbladder being attached to the skin and the infected bile drained off. Of course there are some disadvantages in a permanent biliary fistula, but in some cases it becomes possible, as well as desirable, to close the fistula. By a procedure described by the author, the fistula will close spontaneously after the drainage tube has been removed. It will usually be necessary to retain the tube two or three weeks.

8. **Albumin in the Urine.**—Tunis draws the following conclusions: 1. From any point of view the term physiological albuminuria is misleading, unsatisfactory, and inadequate. 2. As long as albumin remains in the urine an individual is not in a normal condition. 3. The mortality among such subjects is higher than among those who are free from such a condition. 4. The actual mortality rate can be approximated by comparing the records of several large life insurance companies through a period of twenty years. 5. The prompt means of discriminating between the transient forms of albuminuria and those of real clinical significance may be found by such a test as the calcium lactate. 6. A faint trace of albumin in the urine of one who has passed middle life is often of greater significance than a decided trace by directing attention to the presence of casts which might otherwise have been overlooked. 7. For practical purposes the heat and nitric acid test for albumin is the best one, and the careful use of Roberts's solution the most satisfactory control test in doubtful cases. 8. For the proper diagnosis and prognosis too much stress cannot be laid on the thorough consideration of the clinical condition, as a whole.

AMERICAN JOURNAL OF OBSTETRICS.

July, 1906.

1. Treatment of the Toxæmia of Pregnancy, By G. L. BRODHEAD.
2. A New Operation for Antiflexion of the Cervix. By W. H. BAKER.
3. Puerperal Sepsis, By F. H. JACKSON.
4. Pregnancy with Rupture of Bicornate Uterus. Operation and Recovery, By J. L. WATKINS.
5. Value of Blood Examinations in Surgical Diagnosis, By D. S. D. JESSUP.
6. Taboabdominal Pregnancy at Term, By J. ASPELL.
7. The Statistics of One Thousand Cases of Labor, By I. L. HILL.
8. Heredity in Gynæcology, By G. SNEGUIREFF.
9. Judgment and Technique During Labor, By E. SOTHORON.
10. Classification of the Nonspecific Surgical Fevers, By W. M. FORD.
11. Menstruation. Its Significance, with Particular Reference to Recent Literature, By C. HILL.

5. Value of Blood Examinations in Surgical Diagnosis.—Jessup draws the following conclusions: 1. Knowledge of leucocytosis in inflammatory conditions is of great value in conjunction with the history and clinical features. Operating on the blood count alone is not wise or prudent. 2. In the absence of absolute leucocytosis a relative increase of the polynuclears with other signs indicates a purulent exudate. 3. Absolute leucocytosis is of value in prognosis, the higher counts occurring with good body resistance. Low counts with high percentage of polynuclears and sepsis means a poor prognosis. 4. A differential count should accompany a total count for its proper interpretation, but a definite percentage of polynuclears cannot be fixed as the point at which pus is certain to be found. 5. In certain bacterial infections, for example, with typhoid and colon bacilli, the polynuclear percentage may be below normal, although pus is present, and this must be remembered in interpreting the leucocyte counts.

7. The Statistics of One Thousand Cases of Labor.—Hill states that these statistics were obtained in a free obstetric clinic attended by graduate and undergraduate resident students under the supervision of resident staff physicians. There were two maternal deaths; twenty-six children were stillborn, and ten, among those born alive died during the puerperium. There were seventy-six cases of fever from various causes. These statistics showed that under proper supervision obstetric service by students may be as safe and comfortable as in the average of cases in private practice. It should be remembered that there were many emergency cases in which crises had developed, and many in which midwives had failed to deliver.

8. Heredity in Gynæcology.—Sneguireff believes that the problem of hereditary transmission of disease has been insufficiently studied. Problems of heredity, apart from theories, have been extensively elaborated in pathology. Thus there is positive clinical evidence of the hereditary transmission of syphilis, tuberculosis, hæmophilia, the uric acid diathesis, physical disturbances, and alcoholism, in their direct or indirect forms. It is as yet undecided whether fibromata, cystomata, and genital malformations are hereditary or not. Of hereditary transmission of cancer of the uterus there is more or less evidence which seems to place it at least among the probabilities. The transmission of pathological conditions which lead to the development of certain malformations is undoubted, and this has been demonstrated by various experiments upon the ova of low orders of animals. A series of thirteen cases is narrated in which the author strives to elucidate certain problems of heredity in gynæcology.

11. Menstruation, Its Significance and Literature.—Hill summarizes his views in the following propositions: 1. The exact structural change in the uterus of woman during menstruation has not been determined, largely through lack of material and want of experimentation. 2. Menstruation in woman is the same phenomenon as the œstrous cycle or rut in the animal female. 3. The structural uterine changes during rut in the animal female resulting in a loss of uterine epithelium is not a mechanical exfoliation due to the extravasation of blood, but involves intracellular pathological changes. 4. The ovary is an organ of internal secretion, which governs the menstrual cycle through the medium of the blood.

Proceedings of Societies.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

SECTION IN GENERAL MEDICINE.

Meeting of February 12, 1906.

Dr. WILLIAM E. HUGHES in the Chair.

Chronic Valvular Disease.—Dr. FREDERICK J. KALTEYER exhibited a patient, a colored man, aged thirty-one years, the subject of this condition. The case was interesting on account of the sudden onset of the symptoms; second, on account of the very loud diastolic murmur which could be heard over the entire trunk and often three feet away from the body; third, because of the very slight arterial phenomena. The man had been well until last Thanksgiving Day. At that time he had taken thirty glasses of beer. During the night he had wakened noticing a rasping, cooing noise in the chest. He had been unable to work the following day, owing to shortness of breath and some abdominal pain. During the following week his pulse rate was about 130.

Dr. J. ALISON SCOTT said that it was unusual for rupture of a valve to occur except under great muscular strain. In this case the large quantity of beer taken during the short interval offered an explanation in the blood tension produced by the alcohol.

Dr. JAMES M. ANDERS said that rupture of normal heart valves was not frequent, and that it would be interesting to know whether or not the man had had a previous valvular lesion. Under those circumstances rupture would be more likely to occur, and in two instances in his experience had occurred on slight muscular exertion.

Dr. WILLIAM E. ROBERTSON said that in his experiments he had found that a good dose of alcohol would bring about a lowering of the blood pressure. In one instance in which the blood pressure was 115, it fell to 95 in twenty minutes after the giving of an ounce and a half of alcohol. He thought it possible that in this instance the enormous amount of fluid taken would increase the blood pressure, and in that way throw extra work upon the heart. Another point mentioned by Dr. Robertson was that in certain myocardial conditions the blood pressure was often very high when it would be supposed to be low. He believed that some other factor than the muscular pressure itself accounted for these variations in tension. This he thought was explained by the retention in the system of poisons which had a vasoconstrictive effect.

Hysterical Neuroses of the Stomach.—Dr. J. HENDRIE LLOYD exhibited a patient with a rare and curious hysterical condition of the stomach and abdomen. It was somewhat like the disease noted by French authors called "rhythmical borborygmi." The patient, who was hysterical, had a loud rumbling to and fro sound in the abdomen, probably caused by the passage of air to and fro either in the stomach or in the transverse colon, and this was produced by a rhythmical

movement of the abdominal muscles. The condition came on during convalescence from typhoid fever, and was unattended with pain, with nausea, or with any evidence of organic disease.

In commenting upon the case Dr. Lloyd read a paper in which he reviewed briefly some of the more important and rare hysterical conditions of the abdominal organs, among which especailly were anorexia nervosa and hysterical merycism, or chewing of the cud, in the human subject, a condition which had been observed especially in neurotics, as in insane patients, idiotic and epileptic children, etc., and also in neurasthenics. Among other diseases referred to were phantom tumors, false pregnancies, so called, all of which were seen sometimes in hysterical subjects.

The paper was of importance, especially from a diagnostic standpoint, and was intended to emphasize the fact that there was still a wide field for the purely medical clinician in diseases of the stomach, all of which diseases the physician was not yet ready to resign to the surgeon.

Dr. Anders believed the case could not be anything else than a neurosis. Tending to this opinion were the facts of the typically hysterical appearance of the patient, and that when breathing and the motion of the diaphragm were arrested the noise ceased. It was evidently not due, therefore, to an independent peristaltic action of the stomach. That the diaphragm should make the peculiar noise in a normal stomach was difficult of explanation. An hour glass contraction of the stomach was suggested as an explanation. It was thought possible that the diaphragm in forcing air and fluid through a narrow opening caused some noise; and, naturally, with retraction of the diaphragm and relaxation of the stomach there would be a regurgitation into the cardiac end.

Dr. Scott thought that from the character of the noise there must be both air and fluid concerned in the noise. He suggested the existence of a partial obstruction at the pyloric end of the stomach or along the lesser curvature. He thought either possibility could be easily demonstrated by inflation of the stomach.

Dr. A. O. J. Kelly said he had nothing to offer with regard to diagnosis, but that the case appeared to him to be some stomach condition in an hysterical subject. In connection with the case reference was made to a patient who had been subjected to abdominal operations and, following the third, had had for at least three years a stomach condition manifested by air regurgitation, vomiting coming on two or three or more times daily. She had been under various treatments and ultimately was operated upon under the supposition of the presence of adhesions near the pylorus. These were found, and with their removal the regurgitation of food had promptly ceased. Dr. Kelly thought that in a few of these cases of neurosis there might be some anatomical condition which could be relieved by an operation.

Dr. S. Solis Cohen thought there seemed to be a large hysterical element in association with the respiratory tract rather than with the stomach. It would be of interest to know whether with the passage of the stomach tube there was any escape of gas. In an hour glass stomach which he had seen with a colleague there had been an hour glass contraction in an unusual direction, and he wondered whether there could be such a condition in the present case. Personally, he did not believe the condition was a surgical one, although he was open to conviction in that direction if the skiagraph should show a lesion.

The Chairman, referring to Dr. Lloyd's statement that the stomach seemed to be displaced, said that he had occasionally seen, and especially in neurotics, stomachs with the œsophageal opening normally placed, and the pylorus where it ought to be, and yet, without any actual increase in the size of the stomach, the lower border lying down almost in the pelvis, necessitating a short, sharp bending of the stomach on itself. He thought it possible that the motion occasioned by the sharp descending diaphragm might be enough to produce such a sound. In any of the hysterical conditions there should be considered the possibility of cure by an operation, and in connection with this there were probably the two elements of an hysterical basis and an acquired habit to be borne in mind. If by an operation the habit could be broken up, the hysteria was at least temporarily cured. A fact too often lost sight of was that there was an anatomical or pathological basis for hysterical manifestations, as in Dr. Kelly's case. In a certain number of the gastric cases he believed there was absolutely no neurosis. A case in point was that of a man, over eighty years of age, who had for many years regurgitated his food. He was entirely free from neurosis, and in his case the condition was purely the result of habit.

Dr. Lloyd expressed his belief in Dr. Anders's suggestion that the condition was the result of an hysterical tic of diaphragm, quite probably of the phrenic nerve. Against the suggestion of obstruction toward the pyloric end was the absence of history of an old ulcer or other lesion.

Pulmonary Abscess.—Dr. James M. Anders and Dr. George E. Pfahler presented this paper. An engineer, aged twenty-eight, married, was admitted to the wards of the Medico-Chirurgical Hospital on November 6, 1905. His illness had begun as typical typhoid fever, the temperature throughout, however, pursuing an intermittent type. At the end of the third week phlebitis affecting the left femoral vein developed and subsided that week. On November 23rd a bronchopneumonia appeared, and after it had practically run its course, the patient, on December 5th, had a severe rigor, lasting two weeks, followed by symptoms and physical signs of lobar pneumonia. On December 8th a physical examination revealed an area of muffled tympany and cavernous breathing at the angle of the right scapula. The abscess cavity attained its maximum size in about seventy-two hours. Three days later, while the patient was sitting up for an examination, he had a severe paroxysm of cough attended with the expectoration of about two ounces of yellow purulent sputum. A microscopical examination showed pus cells, elastic fibres, pneumococci, and streptococci. The process was studied by radiography while the patient was in the supine position and the exposure was made after inspiration. This showed an incomplete consolidation of the right lower lobe with a cavity in its upper portion, about two inches in diameter, extending from the upper border of the fifth rib posteriorly to the middle of the second interspace in the midscapular line. On December 18th, about ten days later, the radiograph showed less evidence of consolidation; the abscess cavity was still clearly recognized and of the same size. On December 29th the cavity was still visible, but was decreased to about its original size, while upon the same side the diaphragm had risen during the previous ten days to the lower border of the seventh rib. On December 19th the fifth radiograph showed the cavity to be about half an inch in diameter, between the fourth and fifth ribs in the midscapular line, and below this point a distinct scar had formed, the diaphragm meanwhile having moved slightly downward and resting on a level with the eighth rib. The fact that the diaphragm moved upward, as compared with its normal position, was considered indicative of Nature's process of assisting mechanically in closing an abscess cavity of the lungs.

Dr. Anders referred to the belief that lung abscesses were rare as a complication of lobar pneumonia, arising more commonly in the course of bronchopneu-

monia, particularly in the inhalation and deglutition varieties. Operative intervention had been seriously considered when the fortunate accident occurred leading to the discharge of the pus through a bronchus. After this the general and local symptoms steadily subsided until the necessity for an operation no longer existed and convalescence was gradually established.

Dr. Pfahler said that the radiographs must be taken, in conjunction with the physical signs, to be correctly interpreted.

Recent Therapeutic Experiences with Pneumonia.—Dr. S. Solis Cohen said he doubted whether anything instructive could be obtained from statistics of such a disease as pneumonia. He thought it difficult to convey in words the impression made by a case upon the attending physician as to the value of treatment. He had recently tested in a selected case the value of the treatment with enormous doses of quinine in pneumonia, concerning which much had been lately published. The patient was a young, robust man admitted to the hospital shortly after his initial chill, still showing some crepitant râles with bronchial breathing and with a temperature of about 103°. Dr. Cohen gave him fifteen grains of quinine every two hours, with the direction that it be continued until there was some sign of quinine poisoning. The man had taken 105 grains without effect, except a reduction of temperature. In the course of thirty-six hours he was found to be in good condition, with the physical signs increased, but the fever gone. The pulse was very quiet, the breathing was easy, and the patient was feeling comfortable. The quinine was continued in doses of about fifty grains a day for two or three days, at the end of which time the physical signs began to show a beginning of resolution and the patient went on to recovery without a crisis. There had been a gradual fall of temperature from 103° to normal.

Dr. Cohen also reported his results in the employment of colloidal silver which had been satisfactory in the treatment of endocarditis and in associated forms of sepsis. In a case of bronchopneumonia in a child with pronounced meningeal symptoms the remedy was used by the rectum and afterward applied in ointment over the neck, giving relief to the patient. In a case of lobar pneumonia following bronchopneumonia, having some points of similarity to the case of Dr. Anders and Dr. Pfahler, recovery took place. In that case also the symptomatic recovery preceded the disappearance of the physical signs. Dr. Cohen was convinced of the great value, in the treatment of pneumonia, of keeping the windows of the room in which the patient was sleeping open all the time, the bed being protected from the draft. An advantage in the administration of the colloidal silver was that as it was not given by the stomach it need not interfere with other treatment.

Dr. Kelly asked how much of the colloidal silver Dr. Cohen gave by the different methods; also whether he had formed any conception of its action on the process in the lung, as well as on the toxines.

Dr. William E. Robertson inquired whether, in the use of large doses of quinine, there was produced excessive leucocytosis.

The Chairman had observed, as remarked in Dr. Cohen's case of pneumonia, that in the abortive cases the physical signs would continue in spite of the apparent abortion of the pneumonia. He cited a case which had a severe onset, but in which on the third day the temperature had subsided; the physical signs become more marked for a while, when convalescence ensued.

Dr. Anders inquired whether the massive doses of quinine had any effect upon the urine.

Dr. Cohen said he did not know the action of the colloidal silver, but ventured the opinion that it rendered the tissues less favorable as a culture medium and that to a degree it favored the destruction of toxines. The dose usually employed by him by the rectum was from two to five grains in a suppository or a solution of from two to five grains in from half an ounce to two ounces of water. For intravenous use, care should be taken to secure a specimen which had been well cared for by the apothecary. In pneumonia he had used the silver in suppositories of thirty minims of a two per cent. solution. He could give no information regarding the leucocytosis following the massive doses of quinine, owing to an unfortunate oversight in recording the studies. Dr. Cohen did not regard this particular case of pneumonia as one of those of recovery independently of treatment. His experience had not shown a large number of cases following this course independently of treatment, and he would not look forward to such. He had seen a good many cases in which he thought pneumonia was beginning, without the full physical signs, but these he had never felt like attributing to a pneumonic infection.

Book Notices.

The Health Care of the Baby. A Handbook for Mothers and Nurses. By Louis Fischer, M. D., Author of Infant Feeding in Health and Disease, a Text-Book on the Diseases of Infancy and Childhood, Attending Physician to the Willard Parker and Riverside Hospitals, etc. New York and London: Funk & Wagnalls Company, 1906. Pp. 3-144.

This book is written along stereotyped lines in a field which is adequately covered, but in it portions of the subject are well worked out and will prove practical and helpful to mothers. There are some objections to putting definite formulas for food mixtures for given ages into the hands of inexperienced mothers. In the present case the formulas are such as to render these objections very great. No top milk or cream is used. In formula No. 3, 12 ounces of raw cow's milk are diluted with 23 ounces of rice water. In the next formula, a sudden change is made to 22 ounces of milk to 20 ounces of rice water, and an equally sudden change is made at the next step. Such advice as this is apt to work great harm.

Manual of Diseases of the Ear, Nose, and Throat. By John Johnson Kyle, B. S., M. D., Clinical Professor of Otology, Rhinology, and Larynology in the Medical College of Indiana, Department of Medicine of Purdue University; Otologist, Rhinologist, and Laryngologist to the City Hospital, St. Vincent's Hospital, and the City Dispensary, Indianapolis, etc. With 160 Illustrations. Philadelphia: P. Blakiston's Son & Company, 1906. Pp. xxx-595.

This little work is an unusually succinct and yet complete presentation, and it will be read with profit by the student and with interest by the practitioner who wants the results of personal experience rather than a compilation. The book reads like the product of the office and operating room, not of the library. While the chapters on treatment, medical and surgical, are particularly detailed, well illustrated, and supplied with formulæ and cuts of apparatus, the subjects of pathology and diagnosis have been carefully considered and the views of authors noted and reviewed. The references to literature are unusually complete, but they are given in a nutshell as definite conclusions, and thus aid instead of confusing, as is so often the case in textbooks. Kyle's *Manual* reminds one of Nettleship's *Student's Guide,* which will remain a valuable handbook of ophthalmology, no matter how many more voluminous works appear.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending July 27, 1906:

Smallpox—United States.

Places.	Date.	Cases.	Deaths.
Florida—Columbia County	July 14-21	1	
Florida—Nassau County	July 14-21	1	
Florida—Jacksonville	July 14-21	4	
Georgia—Augusta	July 16-23	3	
Illinois—Galesburg	July 14-21	3	
Louisiana—New Orleans	July 14-21	10	
Oregon—General	June 1-30	21	
Tennessee—Knoxville	July 14-21	5	
Tennessee—Memphis	July 14-21	1	
Utah—General	June 1-30	50	
Washington—General	May 1-31	61	
Washington—General	June 1-30	73	

Smallpox—Foreign.

Africa—Cape Town	June 2-16	16	
Brazil—Rio de Janeiro	June 10-17	1	
Canada—Toronto	July 7-14	1	
Canada—Winnipeg	July 7-14	1	
China—Shanghai	May 19-June 9	11	8
China—Hongkong	June 9	Present.	
France—Marseilles	June 1-30		1
France—Paris	June 23-30	5	
Great Britain—Bristol	June 30-July 7	1	
Great Britain—Hull	July 7-14	1	1
India—Bombay	June 19-26		1
India—Calcutta	June 9-16		23
India—Karachi	June 18-24	5	1
India—Rangoon	June 9-16		5
Italy—General	June 21-July 5	38	
Japan—Kobe	June 9-16	1	
Russia—Moscow	June 16-30	9	2
Russia—Odessa	June 10-17	5	3
Russia—St. Petersburg	June 18-30	11	3
Spain—Barcelona	June 20-July 10		12
Spain—Seville	June 1-30		26

Yellow Fever—Foreign.

Honduras—Ceiba	July 23	Present.	
Honduras—Pimienta	July 5	1	
Mexico—Vera Cruz	July 24	1 imported from Yucatan.	

Cholera—Foreign.

India—Bombay	June 19-26		39
India—Calcutta	June 9-16		28
India—Rangoon	June 9-16		1

Plague—Foreign.

China—Hongkong	May 19-June 9	240	236
Egypt—Alexandria	June 30-July 5	4	3
Egypt—Guerga Province	July 1	9	8
Egypt—Port Said	July 2	1	1
India—General	June 2-9	3,597	3,446
India—Bombay	June 19-26		47
India—Calcutta	June 9-16		38
India—Karachi	June 18-24	39	34

Public Health and Marine Hospital Service:

List of Changes of Station and Duties of Commissioned and Non-commissioned Officers of the Public Health and Marine Hospital Service, for the seven days ending July 25, 1906:

ALLEN, G. C., Pharmacist. Granted leave of absence for seven days, from July 11, 1906, under Paragraph 210 of the Regulations.

BROWN, F. L., Pharmacist. Relieved from duty at Baltimore, Md., and directed to proceed to Boston, Mass., for duty and assignment to quarters.

DELGARDO, J. M., Acting Assistant Surgeon. Granted leave of absence for thirty days, from June 9, 1906, on account of sickness.

FOSTER, S. B., Acting Assistant Surgeon. Granted leave of absence for seven days, from July 22, 1906.

GLEASON, C. M., Acting Assistant Surgeon. Granted leave of absence for fifteen days, from August 1, 1906.

HAMILTON, H. J., Acting Assistant Surgeon. Granted extension of leave of absence for one day, from June 15, 1906.

LAGRANGE, J. V., Pharmacist. Granted leave of absence for thirty days, from August 16, 1906.

LLOYD, B. J., Passed Assistant Surgeon. Granted leave of absence on account of sickness for one month and ten days, from June 11, 1906.

MACDOWELL, W. F., Pharmacist. Granted leave of absence for thirty days, from August 6, 1906.

NYDEGGER, J. A., Passed Assistant Surgeon. Department letter of June 5, 1906, granting Passed Assistant Surgeon Nydegger leave of absence for three months, from August 11, 1906, amended to read three months from August 10, 1906.

PETTUS, W. J., Assistant Surgeon General. Reassigned to duty in the Bureau, Washington, D. C., from July 16, 1906.

SALMON, T. W., Assistant Surgeon. Granted leave of absence for one month, from July 28, 1906.

SEAVEY, L. T., Acting Assistant Surgeon. Granted leave of absence for twenty-two days, from August 8, 1906.

STEGER, E. M., Assistant Surgeon. Leave of absence granted Assistant Surgeon Steger for one month and twenty-three days, from May 17, 1906, amended so as to be for one month and eleven days only.

STERNS, C. O., Pharmacist. Relieved from duty in Boston, Mass., and directed to proceed to Baltimore, Md., for duty and assignment to quarters.

TORRES, J. F., Acting Assistant Surgeon. Granted leave of absence for fifteen days, from July 20, 1906.

VAN NESS, G. I., JR., Pharmacist. Relieved from temporary duty at the Purveying Depot, Washington, D. C., and directed to proceed to Fort Stanton, N. M., for duty and assignment to quarters.

WATSON, H. J., Acting Assistant Surgeon. Granted leave of absence for thirty days, from August 15, 1906.

WHITE, J. H., Surgeon. Directed to visit Mississippi River Quarantine Station for special temporary duty, upon completion of which to rejoin station.

WHITE, M. J., Passed Assistant Surgeon. Granted extension of leave of absence for one month, from September 15, 1906.

WOODWARD, R. M., Surgeon. Reassigned to duty at Boston, Mass., from July 16, 1906.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army for the week ending July 28, 1906:

ADAIR, GEORGE W., Colonel and Assistant Surgeon General. Left headquarters, Department of Dakota, St. Paul, Minn., *en route* for duty as chief surgeon, Camp of Instruction, Islay, Wyo.

BISPHAM, WILLIAM N., Captain and Assistant Surgeon. *En route* with Third Squadron, 5th Cavalry, from Fort Wingate, N. M., to Camp of Instruction near Fort D. A. Russell, Wyoming, for duty.

BLOOMBERGH, H. D., First Lieutenant and Assistant Surgeon. Left Fort Leavenworth, Kas. with 18th Infantry, for duty at Camp of Instruction, Fort Riley, Kas., for duty.

BORDEN, WILLIAM C., Major and Surgeon. Granted leave of absence for one month and fifteen days, on surgeon's certificate of disability.

BROOKS, WILLIAM H., Captain and Assistant Surgeon. Left Fort Washington, Maryland, *en route* to Camp of Instruction, Camp Roosevelt, Mount Gretna, Penn., for duty.

CARTER, EDWARD C., Major and Surgeon. Left Fort Leavenworth, Kas., *en route* to Camp of Instruction, Fort Riley, Kas., for duty.

COLLINS, C. C., Captain and Assistant Surgeon. Left Fort Walla Walla, Wash., *en route* to Camp Tacoma, Camp of Instruction, American Lake, Wash., for duty.

DAVIS, WILLIAM B., Lieutenant Colonel and Assistant Surgeon General. Left headquarters, Department of the Lakes, Chicago, Ill., *en route* to Camp of Instruction, Fort Benjamin Harrison, Ind., for duty as chief surgeon.

DAVIS, WILLIAM T., First Lieutenant and Assistant Surgeon. Left Army General Hospital, Washington Barracks, District of Columbia, with Co. A, Hospital Corps, *en route* to Camp of Instruction, Chickamauga, Ga., for duty.

DEVEREUX, J. R., First Lieutenant and Assistant Surgeon. Leave of absence extended thirty days.

FRICK, EUCLID B., Major and Surgeon. Will, in addition to his present duties, take charge of the office of chief surgeon, Department of Dakota, St. Paul, Minn., during the absence of Colonel George W. Adair, Assistant Surgeon General, U. S. Army, at the Camp of Instruction, near Fort D. A. Russell, Wyo.

GILCHRIST, H. L., Captain and Assistant Surgeon. Reports

arrival at Camp Roosevelt, Camp of Instruction, Mount Gretna, Penn., with Co. A, Hospital Corps, for duty.

HARVEY, PHILIP F., Colonel and Assistant Surgeon General. Reported at Camp Roosevelt, Camp of Instruction, Mount Gretna, Penn., for duty as chief surgeon.

HEARD, GEORGE P., First Lieutenant and Assistant Surgeon. Relieved from duty at Army General Hospital, Presidio, San Francisco, Cal., and ordered to Fort Wingate, New Mexico, for duty.

HOFF, JOHN VAN R., Colonel and Assistant Surgeon General. Left headquarters, Department of the Missouri, Omaha, Neb., *en route* for duty as chief surgeon, Camp of Instruction, Fort Riley, Kas.

LYNCH, CHARLES, Captain and Surgeon. Granted two months' leave of absence, to take effect about August 1, 1906.

MCCULLOCH, C. C., JR., Major and Surgeon. *En route* from Fort Meade, South Dakota, to Camp of Instruction near Fort D. A. Russell, Wyo., for duty.

NOBLE, R. E., First Lieutenant and Assistant Surgeon. Left Vancouver Barracks, Washington, on leave of absence for one month, with permission to apply for an extension of one month.

PATTERSON, R. U., First Lieutenant and Assistant Surgeon. Left Presidio, San Francisco, Cal., with Co. B, Hospital Corps, *en route* to Camp of Instruction, Camp Tacoma, American Lake, Wash., for duty.

PHALEN, JAMES M., First Lieutenant and Assistant Surgeon. Granted leave of absence for four months and fifteen days, with permission to go beyond the sea.

PINKSTON, OMAR W., Assistant Surgeon. Relieved from temporary duty at U. S. Military Prison, Fort Leavenworth, Kas., and will report in person to the commanding general, Department of California, for assignment to temporary duty until November 1, 1906, when he will report to medical superintendent of the Army Transport Service, San Francisco, Cal., for assignment to duty.

RAND, IRVING W., Captain and Assistant Surgeon. Left Presidio, San Francisco, Cal., with troops, *en route* to Camp of Instruction, Camp Tacoma, American Lake, Wash., for duty.

RAYMOND, HENRY I., Major and Surgeon. Reports arrival at Camp of Instruction, Fort Benjamin Harrison, Ind., for duty.

RENO, WILLIAM W., First Lieutenant and Assistant Surgeon. Left Fort Riley, Kas., with troops on practice march.

RHOADS, THOMAS L., Captain and Assistant Surgeon. Left West Point, N. Y. ,on leave of absence to August 4, 1906.

RICHARD, CHARLES, Major and Surgeon. Will, in addition to his other duties, take charge of the office of the chief surgeon, Department of the East, and perform the duties of that officer during the absence of Col. Phillip F. Harvey, Assistant Surgeon General, on detached duty at Mount Gretna, Penn.,

ROCKHILL, EDWARD P., Captain and Assistant Surgeon. Relieved from duty at Fort Wingate, N. M., and will proceed to San Francisco, Cal., and take the first available transport sailing from that place for the Philippine Islands, where he will report to the commanding general, Philippines Division, for assignment to duty.

The following named assistant surgeons are relieved from duty in the Philippines Division, to take effect at such time as will enable them to comply with this order, and will proceed by the first available transport sailing after the dates set opposite their names, to San Francisco, Cal., and upon arrival report by telegraph to the Military Secretary of the Army, for further orders:

BROWN, O. G., First Lieutenant, September 30, 1906; HARRIS, J. R., First Lieutenant, October 8, 1906; HEYSINGER, JAMES D., First Lieutenant, September 30, 1906; HUGGINS, JOHN B., First Lieutenant, September 30, 1906; LAMSON, THEODORE, First Lieutenant, September 30, 1906; LOVING, ROBERT C., First Lieutenant, September 30, 1906; WHALEY, A. M., First Lieutenant, September 30, 1906.

SHAW, HERBERT G., First Lieutenant and Assistant Surgeon, having reported arrival at San Francisco, Cal., is ordered to the Army General Hospital, Presidio of San Francisco, Cal.

SMART, WILLIAM M., First Lieutenant and Assistant Surgeon. Left Fort Caswell, North Carolina, *en route* to Camp of Instruction, Chickamauga Park, Georgia, for duty.

TRUBY, A. E., Captain and Assistant Surgeon. Left Presidio, San Francisco, Cal., with Co. B, Hospital Corps, *en route* to Camp of Instruction, Camp Tacoma, American Lake, Washington, for duty.

Navy Intelligence:

Official List of Changes in the Medical Corps, United States Navy, for the week ending July 28, 1906:

BAKER, M. C., Acting Assistant Surgeon. Appointed Acting Assistant Surgeon in the Navy, from July 23, 1906.

BRISTER, J. M., Passed Assistant Surgeon. Detached from the *Philadelphia*, ordered to the Navy Yard, Puget Sound, Washington, etc., to the *Pennsylvania*.

BROWN, H. L., Assistant Surgeon. Ordered to the Navy Yard, Washington, D. C.

BUTLER, C. S., Passed Assistant Surgeon. Detached from the *Columbia* and await orders. To the Naval Station, San Juan, P. R.

CARPENTER, D. N., Surgeon. Assigned to the *Raleigh*.

DEBRULER, J. P., Assistant Surgeon. Ordered to the Navy Yard, Washington, D. C.

DE VALIN, C. M., Surgeon. Detached from the *Alabama*; ordered to Washington.

GEIGER, A. J., Passed Assistant Surgeon. Detached from the *Brooklyn;* ordered home and await orders.

HOEN, W. S., Assistant Surgeon. Assigned to the *Philadelphia* and additional duty at Navy Yard, Puget Sound, Washington.

IDEN, J. H., Passed Assistant Surgeon. Detached from duty with marine detachment at Camp Elliott, Isthmus of Panama; ordered home and await orders.

KINDLEBERGER, C. P., Surgeon. Ordered to the Naval Station, Olongapo, P. I.

MOORE, J. M., Surgeon. Orders to the *Columbia* revoked; await orders.

PAYNE, J. H., Passed Assistant Surgeon. Assigned to the *Arkansas*.

RIGGS, R. E., GEIGER, A. J., BACHUS, J. W. Commissioned passed assistant surgeons.

VERNER, W. W., Assistant Surgeon. Assigned to the Navy Recruiting Station, Pittsburgh, Penn.

VON WEDEKIND, L. L., Surgeon. Assigned to the *Alabama*.

WRIGHT, B. L., Passed Assistant Surgeon. Detached from the *Arkansas;* ordered to the *Columbia*.

Births, Marriages, and Deaths.

Married.

HALL—JENSON.—In New York, on Tuesday, July 24th, Dr. James Sands Kenrick Hall, of New York, and Miss Matilda Jenson.

Died.

BARTLES.—In Flemington, New Jersey, on Wednesday, July 18th, Dr. William Bartles, aged 68 years.

BRANDEGEE.—In New York, on Monday, July 30th, Dr. William Partridge Brandegee, in the forty-second year of his age.

BROUARDEL.—In Paris, France, on Tuesday, July 24th, Dr. Paul Brouardel, aged 68 years.

EATON.—In Kansas City, Missouri, on Wednesday, July 18th, Dr. Thomas Jefferson Eaton, aged 66 years.

EDGAR.—In Hartford, Connecticut, on Tuesday, July 17th, Dr. Alexander F. Edgar, aged 45 years.

FLETCHER.—In Cambridge, Massachusetts, on Wednesday, July 18th, Dr. Saphronie Fletcher, aged 99 years.

HUTCHINS.—In Brooklyn, on Monday, July 30th, Dr. Alexander Hutchins, in the seventy-first year of his age.

LITCHFIELD.—In Philadelphia, Pennsylvania, on Monday, July 23rd, Dr. Harry Litchfield, aged 63 years.

LIVINGSTON.—In Lincoln, Nebraska, on Saturday, July 21st, Dr. Robert R. Livingston, of Plattsmouth.

PECK.—At Lake Mohonk, N. Y., on Thursday, July 26th, Dr. George Peck, of Elizabeth, N. J., retired medical director in the United States Navy.

TINKER.—In Westhampton, Long Island, on Wednesday, July 18th, Dr. Charles A. Tinker, of New York.

TUFFS.—In New York, on Friday, July 20th, Dr. Edward G. Tuffs, aged 55 years.

VON DER LUHE.—In Greenport, Long Island, on Saturday, July 21st, Dr. Amelie D. F. Von der Luhe, of Williamsburg, aged 46 years.

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PUERPERAL FEVER TREATED BY UTEROVAGINAL DRAINAGE.*

BY A. ERNEST GALLANT, M. D.,
New York,

Professor of Gynæcology, New York School of Clinical Medicine; Surgeon to the Baptist Deaconesses' Home and Training School; Consulting Surgeon, Jamaica Hospital, etc.

Viewing the subject of puerperal infection in all its glaring and distasteful nudity, we are confronted by the following well established obstetric as well as surgical factors:

1. The greater the amount of manipulation and the greater the difficulties and delay during labor, the greater the damage to the genital tract, and the greater the likelihood of puerperal infection.

2. That post partum we are dealing with an enormous wound area extending from the vulva (sometimes the anus) to the fundus uteri.

3. That the profuse quantity of secretion from this wounded surface is the best food for the bacteria, saprophytic or pyogenic, and if these are permitted to proliferate undisturbed, will result in absorption of toxines (sapræmia), invasion of the tissues or vessels by the bacteria (septicæmia), distal focal involvement (pyæmia), and too frequently the death of the victim.

The writer's attention was particularly directed to the subject of uterine infection by a case seen in consultation on September 18, 1898. A widow, three months pregnant, had had a tupelo tent introduced by "a professional abortionist"; and when seen was profoundly septic, temperature 103.5° F., pulse 120. The tent had been discharged when the doctor was irrigating the uterus. She was transferred to the Mothers and Babies Hospital, and after we had exhausted all the usual methods, she finally died October 7, 1898. Post mortem we removed the uterus, and while doing so the pus squeezed out of its walls as from a thoroughly saturated sponge. The sinus was filled with pus and gave to the bisected uterus a typical sponge like appearance. Within the uterus, embedded in its wall, were found pieces of the tupelo tent.

The unfortunate result in this case stimulated me to a thorough study of the question of uterine infection, and lead to the adoption of the following hypotheses:

1. That bacteria may be assumed to be present within the vaginal or uterine tract or both, in practically all labor cases which have called for digital examinations or other obstetric manipulations.

2. That the injured genital tract must be looked upon in the light of a surgical wound area, and as such treated on modern surgical principles, viz.: repair of reparable tissues and drainage of the uterus and vagina, providing for the free outlet of the enormous quantity of secretion (lochia).

3. That owing to the relaxed and ballooned out condition of the vagina the lochia does not readily escape therefrom, bacterial growth takes place, their toxines are rapidly absorbed, and "when the dose of toxine produced overpasses a certain limit the phagocytes draw off and leave the field free to the microbe for its multiplication" (Williams, *Twentieth Century Practice*, xiii, p. 370).

4. That the large, heavy uterus of its own weight plus intraabdominal pressure, compresses the soft, boggy cervix down upon the vaginal floor, flexing the cervix, thereby preventing the escape of the lochia from the uterine cavity.

FIG. 1.—The bivalve uterine drain.

This retention and stasis favor bacterial development, and force the uterine contents, bacteria ladened as it is, into the uterine sinus and lymphatics, with resultant septicæmia.

5. That in order to relieve this condition we must overcome the mechanical obstruction in such a way as to afford continuous drainage from the uterine cavity and the vaginal canal.

The excellent results obtained by the use of my bivalve cervical drain (Fig. 1) in several hundred cases of early miscarriage, sterility, and dysmenorrhœa due to obstruction (A New Bivalve Uterine Drain for the Treatment of Uterine Retention and Sterility, *Medical Record*, November 22, 1902) seemed to warrant the enlarging of this drain to such dimensions (⅜ by 3 inches), and its adaptation to the cervical canal of the uterus recently emptied of its contents, during the latter months of gestation.

The large size bivalve drain is long enough to enter well above the internal os, and after being introduced the upper end of the blades can be separated by opening the blades of a small pair of scissors or forceps within its canal, thus preventing the drain from slipping out. A string

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or tape may be attached to its lower end to facilitate withdrawal.

When in situ it will keep the internal os well open, being in halves it does not plug up with blood and serum; the diameter is large enough for the introduction of a metal or glass catheter through which to introduce irrigating fluids without removing the drain. Its walls are so rigid that no force which the cervix is capable of exerting can close or lessen its calibre; and when the vagina is filled with sterile gauze, as it must be, the uterus is lifted up from the vaginal floor, the gauze, acting as a sponge, absorbes the secretions as fast as they are discharged from the uterine cavity, and conveys the lochia to the vulva pad, which should be in contact with the gauze projecting from the hymeneal opening.

The bivalve drain within the cervix not only affords easy exit to the lochia, thereby preventing after pains, but also, acting as a foreign body, tends to excite uterine contraction and thus promotes involution. The bivalve drain being made of sterling silver can be readily sterilized and the same drain used for a large number of cases. The oxidation which sometimes discolors the lower half inch, is simply due to the action of the acid vaginal secretion and is really antiseptic in its action.

Contrary as it is to the usual teaching, we believe that (a) the dorsal posture interferes with free uterine drainage, and (b) that the dorsal posture is responsible for uterine displacement subsequent to labor, and for these reasons we insist that during the puerperium our patients *must not be permitted to lie upon the back, but must always lie upon the side or the abdomen*, or in other words, must maintain the lateral or prone position (The Puerpera: Her Care and Comfort During Convalescence, *American Medicine*, vii, 783, 1904).

Having thus far theorized, let me now relate, in brief, a few cases which will illustrate how the drain works when in practical use, beginning with the worst first:

Case I.—Patient of Dr. H. S. B., Mrs. C., first child, in labor twenty-four hours, pains growing less frequent and of little power. Child's head is within the pelvis, but the uterine contractions lack force enough to expel it through the vulva, which has a very narrow outlet. Forceps applied by the writer and the head enclosed within the amniotic sac, delivered slowly but easily, and restituted to the left, the child weighing only six pounds. After waiting twenty minutes the fundus was treated by Credé's method, but the placenta could not be delivered until the finger was pushed through its centre, and it was pulled through the contracted cervix. The chorion remained attached to the uterine wall and was scraped away by the finger. The placenta was of an oblong shape, and showed much fibrous degeneration. The uterus contracted under a hot vaginal douche, while a drachm of ergot was given by the mouth. The perinæum was lacerated through the skin, but was not of sufficient gravity to warrant suture.

On the fifth day the writer was called to see the patient and was informed that her temperature had been running up to 103° F., pulse 100 to 120; the lochia was purulent and her general condition not good. A bivalve drain was introduced, and the uterine cavity irrigated with a hot solution of 1 : 2,000 potassium permanganate. The temperature fell rapidly below 100° F. On the second day after her condition was so good that Dr. B. removed the drain. During the night the temperature rapidly rose to 103° F., and the next morning over the telephone I advised that the drain be reintroduced. This was done and the temperature and pulse again receded. At this time the people by whom the husband was employed as coachman, learning that the patient was not well, called in Dr. Cragin, and later Dr. Edgar. The drain was removed before Dr. Cragin's visit, and was not replaced. The woman was treated by all the usual methods, but died on the thirty-fifth day post partum.

The rapid fall in temperature and pulse after the drain had been introduced, the almost immediate exacerbation of both after it was removed, and second fall when reintroduced; would seem to justify the belief that had it been allowed to remain this patient would have recovered. All patients have recovered in which the writer had used the drain since that time.

Case II.—Patient of Dr. J. R. L., Mrs. M., primipara. On March 14, 1904, patient was delivered with forceps after premature rupture of the membrane and manual dilatation of cervix; the placenta was torn, the perinæum lacerated second degree and sutured with silkworm gut. On March 20th, 2 a. m., absorption and retention was announced by a chill, and rise of pulse to 110, temperature 102° F. Pain to the left of the brim. March 20, 11 a.m., examination by the writer showed temperature 101.4 ° F., pulse 110. The uterus reached nearly to the umbilicus, was soft, tender, flabby. The cervix had been lacerated into both lateral fornices. The perineal sutures were removed, the sound passed up five inches into the clot filled uterus, which was cleaned out, and some placental tissue removed. The cavity was irrigated with hot potassium permanganate solution, and contracted somewhat; the bivalve drain inserted, and the vagina filled with sterile gauze. During this time she had lost enough blood to render her anæmic, and necessitated the liberal use of stimulants and ergot. However, her recovery was very smooth; the temperature and pulse dropped and in two days were normal, nor was there any subsequent rise.

Case III.—Physician's wife, delivered by another practitioner on August 21, 1904. Thirteen days later the writer was asked to see the patient, who for several days past had had a temperature of about 102° F., pulse 100-110. Examination demonstrated a bilateral laceration of the cervix, the uterus three and three quarter inches deep, soft and boggy, internal os closed, and a dark grumous discharge. The cervix was dilated enough to admit a drain, the uterus irrigated, and the vagina packed with sterile gauze. Next day the temperature was lower, the uterus smaller and firmer, resting on the bladder. The drain remained in situ for five days, and the patient was able to sit up in a chair. This case illustrates a very common class with toxæmia (absorption) due to deficient drainage, which, if not relieved, is apt to go on and eventuate in chronic metritis.

Case IV.—Mrs. E. C., a private patient of my own, a tall, thin, fragile woman; external conjugate seven and a half inches; placenta attached in front, and extended low down near the internal os, causing the fœtus to rotate from R. O. A. to L. O. P., vertex, medium sized head. High forceps delivery, the child had inhaled during delivery; stillborn; perinæum lacerated second degree. While endeavoring to resuscitate the child, my assistant announced that the mother showed signs of severe shock, and we were compelled to keep her on the table in the inclined posture for two hours before her condition would permit us to place her in bed, and to spend the balance of the night at her bed-

side. On the third day the temperature was 103.2° F., pulse 120. On the fifth day, at one p. m., she had a chill, the temperature shot up to 105° F., pulse 132, and it was found that the drain had slipped out. The drain was replaced, the vagina packed with gauze soaked in twenty-five per cent. ichthyol and glycerin, and from this time on the temperature and pulse gradually went down. That the temperature did not fall to the normal within a few days was attributed to the raw vaginal and perineal tears. After the fifth day the gauze was removed and potassium permanganate douches given twice daily. The disproportion between the temperature and pulse was attributed to the marked anæmia, which improved under tonic treatment.

The excellence of the bivalve as a drain was thoroughly demonstrated in this case, as each time the temperature made any marked excursion, examination showed that the drain had been partially forced out by uterine contraction.

Case V.—Patient of Dr. R., Mrs. P., November 17, 1904, miscarried at approximately the third month. Next day fever, 100.8° F.; November 19th, 102° F.; November 20th, 100.5° F. November 21st, another doctor was called in and curetted the uterus. November 22nd, I found the uterus three and a half inches deep, and considerable purulent fluid dammed up within its cavity, which was irrigated with potassium permanganate solution. A dull curette passed over its interior showed that the curettage had been thoroughly done and I so informed the family. The large size bivalve drain was inserted, and overcame the flexion of the cervix which was the cause of the retention. The uterus was firmly fixed in the pelvis, which was filled by exudate, the so called plaster of Paris pelvis. The vagina was packed with sterile gauze. Ergot, hydrastis, and cascara given every three hours. Her physician was advised to repack the vagina with gauze and ichthyol glycerin every day. This was faithfully carried out, and the patient made a very satisfactory recovery, being out of bed in twenty-five days. January 16th, examination showed the pelvis entirely free from exudate, the uterus mobile. Another interesting feature in this patient was the activity of her thyreoid gland and exaggerated exophthalmia during pregnancy, and the considerable diminution as the pelvic condition improved.

A very common class of cases is that due to instrumental infection during the performance of abortion by a "professional" and the sequela as shown by

Case VI.—Patient of Dr. C., who had had something done by a "professional abortionist." She had been feverish with chills for over two weeks, and had had abdominal pain for the last four or five days. On April 28, 1905, the temperature was 104.4° F., pulse 132. Treatment: Intrauterine douche; small bivalve drain inserted, and vagina packed with gauze, which was removed two days later. The chills had stopped, the temperature was 100° F., the uterus draining freely, and within a week she was out of bed.

To recite the history of other cases would only be a repetition of one or other of those quoted, of which each one is a representative of the usual varieties met with in general practice. I hope that this recital has been clear enough to demonstrate that the bivalve drain is a valuable addition to our obstetric and gynæcological armamentarium, which will prove of service. Its introduction into the canal is very easily accomplished by grasping the anterior lip of the cervix with a tenaculum, holding the bivalve in the grasp of any kind of forceps and by a sort of wabbling motion the drain is carried to its full length into the canal. As long as the cervix is soft and boggy, the vagina must be filled with gauze to prevent the heavy uterus from weighting the cervix down onto the pelvic floor and thus obstruct the outflow. The drain can be left in situ for a week, or ten days, or until the uterus contracts to such a size as to render its presence no longer necessary.

Dr. L., whose case (II) is referred to, writes me that he has purchased a bivalve drain and has used it with great satisfaction in three cases during the past year and a half, and no longer has had need of my services.

In closing, I wish to state that it is not to be expected that by the use of the bivalve drain we can work miracles, and cure those cases in which the infection has already invaded the sinus, the veins, and the general system, but by the early introduction of the drain we can prevent retention, afford a free outlet to the uterine secretions, and thereby deprive the bacteria of their pabulum and render the soil to them untenable.

The reader may wonder at the absence of any reference to the specific varieties of bacteria which luxuriate within the genital tract. This has been omitted because, as in dealing with a surgical wound infection, we afford a vent to the pus and then depend upon dame Nature to do the rest. If we do our part, promptly and thoroughly, she will not fail us in our time of need.

60 West Fifty-sixth Street.

A RESUME OF RECENT LITERATURE RELATING TO THE SUPRARENAL GLANDS AND THEIR APPLICATION TO CLINICAL MEDICINE.

By Theodore G. Davis, Ph. G., M. D.,
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Professor of Clinical Medicine in the College of Physicians and Surgeons.

Since Brown-Séquard in 1856 showed the suprarenal glands were organs essential to life they have received a great amount of attention. Although Vulpian made an attempt to isolate the active principle during the same year and Virchow (1857), Arnold (1856), Krukenberg (1885), Brunner, and Gautier later, it remained for Abel of Johns Hopkins in July, 1897, to isolate and determine the composition of the active principle. In January, 1900, Takamine read a preliminary report announcing the discovery of a base in the suprarenal glands to which he gave the name adrenalin. Its composition was closely studied by von Fürth during the same year and by others later. Sajous in his book, *The Intersecretions,* published in 1903, has collected a great amount regarding the suprarenal gland, but in a determined effort to support a preconceived theory he confuses and vitiates his conclusions. Nearly all I present to you regarding the suprarenal gland has been written since 1903 and much of it during the present year, a considerable portion of it appearing in English for the first time in this paper. Some familiar lines may be recited, but I hope enough will be new to hold your attention and if not convincing will prove suggestive.

Anatomy and Histology. The suprarenal capsules are two glandular masses situated above, but in close relation with, each kidney. They vary in size in different individuals, being sometimes so

small as to be scarcely detected but usually they measure from an inch and a quarter to two inches in length, rather less in width, and from a sixth to a quarter of an inch in thickness. Their weight varies from sixty to ninety grains (four to six grammes). They differ in shape, the right being roughly triangular, while the left is more nearly cresentic, their concave surface resting upon the upper and anterior surface of the kidneys, being surrounded by areolar tissue containing fat. Occasionally accessory adrenals are found in the neighboring tissues or along the spermatic vessels accompanying the testicle in its descent, but these accessory glands, as a rule, contain little, if any, medullary substance.

On section the gland is seen to be readily divisable into a yellowish cortex and a darker more vascular medulla, whose central portion transmits several veins which unite to form the suprarenal vein, and makes exit from an indentation in the anterior surface of the organ, known as the hilum. The cortical portion of the gland appears to have its origin from the same embryologic source as the Wolfian bodies, while the cells of the medulla apparently take their origin from the primitive anlages of the sympathetic ganglia. (1) The nerves are numerous and derived from the solar and renal plexuses and, according to Bergmann, from the phrenic and pneumogastric nerves. They form a plexus in the capsule branches are distributed to the cortex and to the medulla. (2) In the cortex these nerves invest the blood vessels with a delicate plexus. In the medulla they are also distributed to the blood vessels and have occasionally small ganglia or isolated nerve cells along their course (which should not be confounded with the large ovoidal cells of the medulla) and form the plexus of sympathetic nerve fibres which invest the groups of epithelium. Dogiel (3) demonstrated delicate fibrils with minute varicosities which penetrate between the epithelial cells and terminate in a manner similar to that characteristic of other secreting glands.

The lymphatics, according to Stilling (4), from rich plexuses in the glomerular zone and in the medulla, being especially abundant in the vicinity of the central vein; elsewhere they are less abundant.

The blood supply to the suprarenals is from the aorta, the phrenic, and the renal arteries which form a plexus of vessels in the capsules of the organ and in the connective tissue adjoining. Some of the smaller branches from this plexus supply the capsule itself, and enter venules tributary to the lumbar and phrenic veins, but the larger and greater number enter the gland and are distributed to the cortex and the medulla.

The cortical arteries enter the glomerular zone to abruptly form a capillary plexus which occupies the connective tissue between the columns of cells. These arteries are continued to the fasicular zone in intimate relation with the epithelial cells, until they reach the recticular zone, where they anastomose and form thin walled venules or sinusoids; (6) they then unite to form venous stems which continue without anastomosis through the medulla to the central veins.

The medullary arteries are also derived from the capsular plexus and penetrate the cortex to the border of the medulla, where they abruptly terminate in a plexus of capillary vessels which extend in the connective tissue stroma and come into intimate relation with the medullary cells. The walls of these capillary vessels are extremely thin, the endothelium often being in direct contact with the epithelial cells which frequently impinge upon the lumen of the vessel. The capillaries pervade the entire medulla, and here and there unite to form venules which empty into the central veins making their exit at the hilum, and enter the lumbar or renal vein or, on the right side, enter the inferior vena cava. The adrenal veins contain, almost exclusively, longitudinal muscle fibre. The efferent veins are characterized by a peculiar distribution of their muscle fibres. The circular muscle fibres are often absent or exist as a thin layer beneath the endothelium. Frequently, and especially in the central veins, coarse bundles of longitudinal muscle fibres project into the lumen of the vessel in a rugose manner, and these bundles are especially prominent where two veins unite or a smaller vein enters the central vein. These large venous sinusoids appear to serve as receptacles or reservoirs for the adrenal secretions. The muscle fibres by their arrangement serve as sphincters for its retention until, by their contraction, they force the secretion, mixed with blood, into the blood current.

The organ is enclosed by a capsule of connective tissue from the inner surface of which delicate fibrous trabeculæ containing much elastic tissue pass inward, and divide the parenchyma into cell groups and columns which vary in appearance, being very irregular in the medulla; while in the cortex they are more regular, though they vary in form to such an extent that they have been described by Arnold (7) as distinct layers; which he designates the zone glomerulosa, zona fasiculata, and zona reticularis. This classification, I think, has led to confusion rather than clearness, for the adrenal has structure similar to other secreting glands; and Felicine (8) claims to have demonstrated intracellular and intercellular secretory canaliculi opening directly into the veins or into the sinusoids which permeate the delicate connective tissue trabeculæ supporting the cell groups. The cells are columnar and polyhedral and are arranged in columns and spheroidal groups. They may be divided, for the most part, into those distinctly acidophile and those distinctly fatty, while in the recticular zone groups of cells occur in which is formed a brownish yellow pigment in the form of coarse granules and as a diffuse coloration of the cytoplasm. The volume of pigment varies greatly in different individuals, is usually absent in young persons, seldom appearing until after the twentieth year (9). A similar yellowish pigment is found in the chromofine cells of the carotid gland, in the pituitary body, and in some nerve cells.

The formation of this chromogen appears to be intimately associated with the production of the blood pressure raising substance. The experiments of Batelli (60) have shown that normal blood always contains adrenal although, at times perhaps, in small quantities. It has also been found that blood pressure raising substances are elaborated by other glands, notably the pituitary body; but by far the greater amount is furnished by the suprarenals. The method of its production has not been definitely

determined but I conceive it to be after the following manner.

We know that enzymes capable of producing hydrolytic cleavage are common to most glands if not to all cells in the body, and we should remember that they are capable of reverse action, that is building up complex synthetic substances.

Among the earliest and constant products of the cleavage of proteins are leucine, and tyrosine, whether the cleavage be brought about by heat, acids, alkalies or enzymes. The water content of the proteid molecule is more easily disturbed than any other, hydrolytic cleavage occurs with the production of leucine, slightly less tyrosine, and small amounts of others, to us, less important substances.

One of the most widely distributed and important enzymes is the aldehydase of Jaquet (10) the distribution of which has been carefully studied by Roselle (12). Jacoby (13) found it was not absent from the liver in diabetes mellitus, phosphorus poisoning, or uræmia, but Pfaundler (14) found it lessened in the liver of children dead of gastroenteritis. It is apparently the agent which in the liver causes oxidative changes after hydrolytic cleavage of the proteid into leucin and tyrosin. The law of its activities has been carefully studied by Medwedew (11). It has the power of oxidizing aldehydes of both the aromatic and fatty alcohols in their corresponding acids. It is abundantly present in the cortex of the suprarenal gland, but is absent from the medulla, just the opposite of adrenalin which is found in the medulla, but not in the cortex, hence we may assume this aldehydase to be an active agent in producing the blood pressure raising substance.

Much work has been done to determine the composition of adrenalin but no satisfactory conclusion has been reached. The generally accepted formula is that of Abel or Takamine (which differ but slightly). $C_{10} H_{14} N O_3 + \frac{1}{2} (H_2O)$ half a molecule of water.

Adrenalin differs from tyrosine by a molecule of methyl (CH_3), and we may tentatively regard adrenalin as derived from the tyrosine group of the proteid, possibly a methyltyrosine (CH_3) $C_9 H_{11} N O_3$, produced during the cleavage of the proteid molecule probably by the intervention of the aldehydase of Jaquet.

Abel and Crawford (17) have shown that adrenalin should be classed with the pyridin bases for, when fused with an alkaline hydrate it yields products of the pyrrol group, to which indol and skatol belong. These, you recall, are the products of prolonged tryptic digestion and intestinal putrefaction of proteids, and while a certain relationship has been shown to exist between the amount of indican found in the urine and vascular hypertension (Houghton, 18) and it may be possible for the intestinal mucosa to synthetically build up from indol or skatol (which is methyl indol) blood pressure raising substance resembling adrenalin, such has not been proved to occur. If we accept this view of the constitution of adrenalin we look for its source in another group in the proteid, in the chromogen or trytophan group. If then we recognize the tyrosine group in the proteid molecule as the source of the blood pressure raising substance, it will enable us to satisfactorily explain the pigmentation which occurs in certain pathological conditions affecting the suprarenal glands, namely fibrocaseous tuberculosis or Addison's disease and atrophy when the glandular elements are more or less completely destroyed, and the conversion of the products of proteid cleavage into adrenalin are interfered with. Tyrosinases have been found by Biedeman (16-24), von Fürth (16-24), and Schneider (16-24) in various animals and plants, and Bertrand (24) describes a tyrosinase capable of converting the white amino-acid, tyrosine, into colored compounds, and Samuely has shown that the different chromogen groups contained in the proteid molecule yield aromatic and heterocyclic nuclei which, by absorption of oxygen and the elimination of water, condense to form dark products, the melanoids and melanins, which may or may not contain iron. (Gonnerman obtained a tyrosinase capable of changing tyrosine into homogentisinic acid, which turns the clinician's mind to a possible explanation of the pathogenesis of alkaptonuria).

The same source of pigmentation should hold in other pathological conditions where leucine and tyrosine are produced in excess of utilization, such as phosphorus poisoning, acute yellow atrophy, uremia, severe cases of typhoid and yellow fever, smallpox, abscess and gangrene of the lung, chronic tuberculosis, and perhaps other toxæmias.

We have seen that leucine, $C_6 H_{13} N O_2$, is a constant product of the cleavage of proteids, and is found in almost every cell in the body, being abundant in cells undergoing active proliferation. Emdem (15), working in von Noorden's laboratory, has shown how leucine many split into acetone and lactic acid, probably explaining their occurrence in diabetic blood. He also shows how, under other circumstances, leucine may be converted into glycocol, and the latter into glucose, thus elucidating the formation of sugar from proteids, and possibly the source of the glycosuria occasionally following the use of adrenalin. This was first noted by Blum (16a) in 1901, confirmed by Luelzer in the same year, and by Croften in 1902. Such a glycosuria is a true hyperglycæmia and is not of the phlorrhizin variety (Hammarsten) (16).

Stookey, in a recent lecture on the glycosurias, showed conclusively that the hyperglycæmia caused by adrenalin was of hepatic origin and I would suggest that it is due to increase of blood pressure in the liver lobules interfering with normal hepatic metabolism. Luksch (19), in a series of studies directed to discovering alterations, which the suprarenals undergo in circulatory disturbances, intoxications, infections, etc., found that the simple fevers which accompany many general maladies do not directly influence the function of the suprarenal glands, but the fever accompanying infectious diseases and the toxines produced by the bacilli of tuberculosis and diphtheria, by the bacterium coli commune, the various staphylococci and streptococci, lessen the activity of the gland, and its blood pressure raising power.

Rolleston (23) tells us that softening and cloudy swelling of the suprarenal gland occurs in febrile conditions. The medulla appears sodden and blood stained, and microscopically small extravasations may be found in the cortex. In pyæmia small vas-

cular streaks, or rarely minute abscesses, due to embolisms, may occur.

Schwarz (20) maintains that atropine lessens the vasomotor activating properties of the gland, and Pettit (21) found pilocarpine to increase its activity and produce hypertrophy. Luksch failed to observe great functional lesions from these drugs, but in phosphorus poisoning and in uræmic intoxication marked alterations were observed, and he found the changes in the blood pressure were proportionate to the changes in the gland. Sajous states that the bromides, iodides, arsenic, chloral, indeed all of the vasodepressants, lessen, while quinine and the excitomotors increase suprarenal activity.

Among the pathological conditions affecting the suprarenal gland, several varieties of adenomatous tumors have been described as well as sarcoma and carcinoma, both primary and secondary. Fatty degenerative changes are so common as to appear almost physiological. Syphilis occurs as gummata. Amyloid changes occur, accompanying this condition in other organs. Inflammation is rare, but may follow hæmorrhage and cause atrophy; but atrophy is usually an involution process occuring in advanced age, and is usually accompanied by fatty changes and pigmentation.

Fibrocaseous tuberculosis, or Addison's disease, I again mention to call your attention to the source of pigmentation, which we have seen probably has its origin in tyrosin.

Elliott (33) made experiments tending to confirm the observations of Langley, that the effect of adrenalin upon plain muscle is the same as exciting the sympathetic nerves supplying the tissue; but adrenalin does not excite the sympathetic ganglia when applied directly, as does nicotine.

Brodie and Dixon (34) attempted to solve the question whether adrenalin excites the muscle directly or through the nerve endings, by the previous use of cocaine, curare and apocodeine, three drugs which act chiefly, if not entirely, upon nerve terminals. They found these drugs did not abolish the action of adrenalin, although they lessened its effects. Biedel and Reiner (28) claimed that the slowing of the pulse following injection of adrenalin was due to the excitation of the bulbous centres, and Khan (29) repeated experiments tending to confirm this. Mathiew (32) noted that section of the vagus stops the retardation and brings about acceleration of the pulse, which he thinks is due to momentary paralysis of the peripheral inhibitory system. Baylac (30) and Verwormer (31) made double vagotomy and observed, nevertheless, slowing of the pulse as well as increase of arterial tension, although larger doses of adrenalin were required to produce this effect, and they are unwilling to admit central excitation.

We see that many of the older experiments carried out, supposedly, with the active substance of the epinephral gland have since been proved to have been carried out with a mixture of neurin and cholin, together with the product of the epinephral gland, and this action was attributed to excitation of nerve centres, but was doubtless due to the contaminating substances.

Later experiments demonstrate without doubt that toxic doses of adrenalin act upon the respiratory centre. However, the characteristic effects can be produced in an excised organ and in an animal whose spinal cord has been severed. This action can be explained, therefore, without intervention of the nervous system, and from these two experiments it is safe to say that the characteristic effects are produced by direct action upon the musculature of the arterioles. The excised heart, when treated with epinephrin shows a strengthened systole and a weakened diastole, hence the characteristic cardiac effect again may be explained by a direct action of this substance upon the muscular structure of the heart. (61)

Cybulsky and Symonowiez (27) found, after intravenous injection of the active principal of the suprarenal gland, dilatation of the pulmonary vessels, with considerable stasis. They attribute this phenomenon to the general elevation of pressure, which became so great that the left heart could not evacuate the blood it received, an obstacle to circulation of blood from lungs to left heart resulting with increase of pressure in the minor circulation.

Schafer and Oliver (37) showed that perfusion of the extract of suprarenal glands through the vessels of pithed frogs greatly diminished the flow, or even cut it off altogether; they found abundant evidence that in animals the extract caused constriction of the arterioles and that the main action was upon the peripheral vessels.

Loeper and Crouzon (36) found from their experiments on animals, that every injection of adrenalin produced a leucocytosis. In the beginning this had the character of a neotrophic polynuclear leucocytosis; then the number of mononuclears increases. In no case were myelocytes or nucleated red blood corpuscles observed. They found, however, that removal of the suprarenal gland does not cause hypoglobuly, but concluded that suppression of its secretion produced hyperglobuly. This is due to inhibitory action upon the destructive centres for the red blood corpuscles. This is a new theory and accentuates the idea of an antagonism between the suprarenal glands and the thyreoid. Baylac (30) found the blood pressure produced by adrenalin to be temporary and quickly exhausted. Which observation has been repeatedly confirmed by other experimenters.

The immediate results of an intravenous injection of adrenalin are positive. At the place injected one may see a vasomotor constriction of the superficial vessels, manifesting itself in a pronounced paleness of the integuments; on the part of the heart, there is a marked slowing of cardiac contractions with an increase of their energy, coinciding with a considerable elevation of arterial tension; these symptoms last four or five minutes, are accompanied with acceleration of respiratory rhythm and an abundant discharge of urine and frequently of fæces. One may make a series of intravenous injections at intervals without letting the animal succumb, and yet the total amount injected be much greater than the usual fatal dose. It appears then that the blood does not imprison adrenalin but that it is modified or destroyed in the organism.

Batelli (60) has shown by experiments "in vitro" that adrenalin is transformed by the aid of, and in the presence of oxygen into an alkaline substance which he calls oxyadrenalin. The rapidity of this transformation is influenced by the quantity of adrenalin and by the alkalinity of the solution.

Oxyadrenalin has no blood pressure raising power and is non toxic. We say, therefore, that adrenalin is transformed by the oxygen carried by the red blood corpuscles during its passage through the tissues into oxyadrenalin. If the dose is raised to mean the fatal dose, there will develope disturbances of equilibrium and sensation, contractures and paralysis. Baylac (30) concluded that "adrenalin acts especially upon the muscular fibres of the heart and vessels, but the cardiac nervous system appears to participate in this action." Lower (35) found that the vasoconstriction took place immediately after the solution containing adrenalin came in contact with the vessel walls, even with a solution containing one part adrenalin in fifty million parts of indifferent liquid. Mousset (41) concluded from his experiments that the secretion acts upon the heart muscle directly, and upon the nerves secondarily. Toxic doses produce a veritable incoordination of the heart, which lasts a very short time and then the heart becomes rapid. The respiration is equally affected. Immediately it almost entirely stops, then abruptly begins again and increases in frequency, becoming deep and irregular until the climax is reached when respiration ceases. In most cases an edema of the lungs takes place.

Crile (40) found adrenalin in the normal animal or in any degree of shock caused a marked and, in sufficient dosage, an enormous rise in blood pressure. This rise occurred when the vasomotor centres were proved to have been exhausted when they were cocainized and when they were destroyed. It occurred when, in addition, both vagi and both accelerantes had been severed and the animal was under the influence of curare.

Pari (30) made experiments with the end in view to demonstrate the local action of adrenalin on the vessels of animals for some time dead, and in which, with all probability if not with certainty, the effect obtained could be referred to the action of the adrenalin upon the smooth muscle or the nerve termination in it, and not to the ganglia. A solution of such strength as to produce a vasodilative action in one individual may produce vasoconstriction in another. In these experiments the local vasoconstriction was found to last a long time (about an hour) and to cease with a liberal washing with physiological solution; in fact, if this washing was suspended for a few minutes after dilatation had commenced, dilatation ceased to recommence when the washing was renewed; and Pari found the rapidity of the dilatation to be in direct relation to the pressure of the fluid confirming Lower's observation. The duration of the local vasoconstriction in these dead animals is notable in comparison with the short elevation of pressure from intravenous injections of rather strong doses of adrenalin in living bodies, and demonstrates that the lowering of blood pressure is not due to cessation of local constrictive action, but to other influences as yet undetermined.

Summing up the experiments of Pari (39), not one of the many injections of a recent solution of adrenalin produced a lowering of blood pressure, while this happened three times with old solutions. He, therefore, concludes that adrenalin does not, even in extremely small doses, diminish pressure and thinks that the depressive action observed by Brodie and Dixon (34), and by Moore and Purenton (39) from well diluted extracts of suprarenal capsules depended either upon alteration of adrenalin or of the presence in the extract of some substance identical with or similar to choline, which has a depressing action and which, according to Hunt (39), may be found in the suprarenal gland being derived from lecithin.

After death from adrenalin, Drummond (42) found congestion of the viscera with occasional hæmorrhages and serous effusion. This congestion is due to the action of adrenalin on the blood vessels, and may result from increased pressure in those large arteries whose arterioles do not contract, or from a rise of pressure in the large veins. The latter would increase pressure not only in the minor circulation, but in the large veins of the systemic circulation, and affect especially the central parts of the liver lobules, as occurs in hypertrophic cirrhosis and in the convoluted tube region of the kidneys, as is seen in parenchymatous nephritis.

Drummond (42), in all his examinations, found congestion of the lungs so great in some instances as to be associated with hæmorrhage into the air vesicles and, if the animal lives long enough, this is followed by inflammatory reaction, which may be due to the presence of effused blood in the air cells, or to the invasion of microorganisms from the respiratory passages.

Baylac (30) found that slow and chronic intoxication by adrenalin determines atheromatous lesions in the aorta, similar to those which occur in man, and as on the other hand in subjects affected with atheroma, the suprarenal capsules are frequently altered, one would infer that hyperepinephria, or suprarenal hyperfunction plays a rôle in the pathogenesis of atheroma. Josue (38) speaks of the rôle which the suprarenal gland plays in the production of arterial hypertension and atheroma. His experiments demonstrate that adrenalin possesses an especial action upon the arteries, capable of giving rise to atheroma. Was this effect due to arterial hypertension produced by injection of this substance into the veins? Josue (38) concluded from his experiments that it was; and if adrenalin is the product of the secretions of the suprarenal capsules, one may infer that these organs play an important rôle in the production of atheromatous lesions. At the succeeding meeting of the society M. Loeper (43) communicated a case confirmative of experimental atheroma produced by repeated injections of adrenalin into the veins, and at the session of December 19, Josserane stated "it is positive that we possess in adrenalin a most certain means of experimentally giving rise to atheroma."

Josue (38) suggested it would be interesting to study the condition of the suprarenal glands in arteriosclerotic subjects. One might see whether the usual factors of arteriosclerosis are not, in part at least, produced by intervention of these glands. At this same session, M. Gouget (45) communicated a case of experimental saturnism, with considerable hypertrophy of the suprarenal glands and aortic sclerosis, and at a sitting of the Biological Society, January 19, 1904, Bernard and Bigart (46) stated that their experiments tend even more precisely to confirm the interpretation proposed by Gouget. They found that the lesions of the suprarenals were constant in experimental lead poisoning, and as-

sumed a special morphological type, which they considered to signify functional overactivity of the organ (hyperepinephria).

At a meeting of the Paris Hospital Medical Society February 19, 1904, Josue said clinicians had long noted the frequency of atheroma in subjects whose arterial tension is above normal, and on the other hand it has been found that suprarenal extract or adrenalin raises arterial tension. He then endeavored to discover whether repeated injections of adrenalin into the veins of a rabbit would produce atheroma in the animal. His results were positive, and he states that adrenalin has a special pathological action on the arteries and it is but another logical step to infer that the suprarenal gland plays an important rôle in the genesis of atheroma, and of the hypertension which accompanies it.

Marini (47) says: "Adrenalin has upon the organism a well defined action, viz.—peripheral vasoconstriction, with a relative augmentation of arterial pressure" and he is unwilling to admit an irritant or toxic action, for the substance enters the vessels and traverses the entire venous and the smaller circulation until, when well diluted with blood, it acts upon the vessels of the systemic circulation; then, again, the endothelium remains for a long while intact at the point of the atheromatous lesion, where we should expect it to be primarily affected if the substance was toxic; moreover, the atheromatous lesion is a retrogression, not an irritative process. All the various causes assigned to atheroma disappear when we consider that in all diseases in which it occurs, (chronic lead poisoning, gout, nephritis, etc.) you have one common condition, arterial hypertension. Atheroma is found in the pulmonary especially in the aged, indeed it is the rule in grave and uncompensated mitral lesions, in which the hypertrophy of the right ventricle indicates that the blood pressure in the pulmonary is very high and we may have the atheroma in a restricted territory, if the cause of the hypertension is acting only here.

Touching upon the theory of Martin, that atheroma is due to sclerosis of the vasa vasorum, Marini (47) says, "while we may have atheroma in a vessel (as the pulmonary) the anatomical integrity of whose vasa vasorum we must admit, we commonly have atheroma in vessels especially characterized by endovascular pressure, (as the aorta) but whose vasa vasorum are in no way to be distinguished from those of the smaller vessels."

Hypertension, then, is the prime and efficient cause of the atheroma, whether this increase of tension is due to peripheral vasoconstriction (as in action of adrenalin) or to cardiac valvular lesion (as in atheroma of the pulmonary due to mitral insufficiency and hypertrophy of the right ventricle), or in atheroma of the aorta due to insufficiency of the aortic semilunar valves, or whether it be due to arteriocapillary fibrosis of the smaller vessels which increase peripheric resistance.

Josue (38) reports three cases of atheromatous patients, in whom the suprarenals were examined. The histological examinations showed hyperplasia of the glomerular layer, nodular hyperplasia, with spongy transformation of all the cellular layers of the cortical substance; and hyperpigmentation of the reticular layer. These changes were constant and characteristic, and tend to indicate hyperactivity of the gland (hyperepinephria). Pathological anatomy therefore confirms the suprarenal origin of atheroma.

Adrenalin appears to act by stimulating the irritability of the muscle cell and promoting its contractility. We do not know certainly in what portion of cell these forces reside, but from the fact that such functions are associated with changes in the fibroid substance, and cease when fibrorrhexis occurs, being followed by degenerations, lead me to believe that they reside in the chromatin elements of the cell.

Beneke (48) has well said: "The distinguishing features of physiological growths are nutrition, function, and endurance. The physiologic balance between nutrition and function—or to express it differently between the energy of growth and the energy of function—regulates the life cycle of the cell." Where this balance is disturbed we see changes in cell nutrition with lacking function and lack of durability in the individual cell; this is pathological.

Let us consider the changes productive of the conditions known as fibrosis and atheroma, which we have seen to be so intimately associated with vascular hypertension. First there is such a disturbance of cell metabolism as results in the conditions known as cloudy swelling due to oxidative and hydrolytic changes in the cytoplasm, the water content of the proteid molecule being more easily disturbed than any other. If condensation occur we have hyaline or mucinoid degeneration, and if the condensation be still greater, amyloid, a chondroproteid closely related to chondritinis, is formed, infiltrating the connective tissue spaces, for I contend that amyloid is of local origin immediate to the cells involved.

If after cleavage begins hydrolysis continues, hydropic degeneration followed by liquefaction occurs, with the production of a substance causing hypernutrition of the adjoining cells and replacement of the degenerated cells by proliferation of connective tissue; this is fibrosis. If after coagulation occurs, a lipase is present, fatty changes result. The lipase splits the proteid molecule into fat, fatty acids, and ammonias. The fatty acids combine with the alkaline earth bases calcium and magnesium—to form soaps insoluble in the blood serum. The fatty acids in these soaps are later replaced by the stronger acids—phosphoric and carbonic—in the blood, with the formation of calcium and magnesium phosphate and carbonate; this is calcification. These changes have recently been followed by Adami and Klotz, (49). A significant feature of their study is that calcareous changes were demonstrated in the aorta of practically every person over thirty years of age, and atheroma and calcification in the aorta of a boy of seventeen.

Pearce and Stanton (50) have performed a series of experiments for the purpose of confirming the work of others and of making detailed histological studies in the hope of throwing some light upon histogenesis of arteriosclerosis in man. Their method and results are briefly as follows:

Methods: Rabbits received injections of 1 to 1,000 solution of adrenalin in the ear vein. An initial dose of three minims repeated every other day being the usual procedure. In other instances, the dose has been

gradually raised until a dose of twenty minims to twenty-five minims was given every day. The animals have been killed after periods varying from a few days to eight weeks.

Results: The vascular lesions produced were limited to the aorta and exhibit a more or less definite sequence. Rabbits receiving five or six injections show no gross lesions, but histologically important changes in the media are evident. These consist of focal areas of degeneration in which the muscle fibres are destroyed without alteration of the elastica. Later the degeneration is more extensive and involves the greater portion of the middle zone of the media. At this time changes in the elastic tissue appear; the fibres become swollen, stain irregularly, and in some places appear to be fused together. Special stains show a small number of minute fat droplets in such areas. After twelve to fifteen injections very definite lesions are evident microscopically. The aorta is more or less distorted in shape, rigid, and nonelastic. Irregular dilations alternate with elevated brittle areas of calcification. Distinct atheroma with ulceration is seldom seen. In the experiments continued for six or eight weeks, the process becomes very diffuse and small dilations of the thinner portions of the aorta assume the appearance of aneurysms. At this stage the destruction of the elastic fibres is extreme and all degenerated areas are infiltrated with lime salts. Cellular infiltration and repair about such areas have been seen in a few instances, and experiments are now under way to determine the frequency and extent of this reparative process.

The changes in other organs include enlargement of the heart, œdema, and congestion of the lungs, and degenerative changes in the liver and kidney, and occasionally in the heart and other muscles. The chief value of the studies herein summarized lies in the application of this comparatively simple series of changes to the more complicated vascular lesions occurring in the arteriosclerosis of man.

Adrenalin has been found to increase the tone of all muscular tissue, mainly by direct action. The vasoconstriction thus produced is manifest primarily in the splanchnic area (if this did not occur there could not be a rise) thereby forcing a large amount of fluid into the peripheral vessels, which are also constricted and raising the blood pressure higher than any other known substance. Its action on the vessels of the skin is but slight, its vasoconstricting action on the bloodvessels of the brain and lungs is not great, while upon the renal vessels the constriction is transitory and followed by dilation, hence the flow of urine is successively diminished and increased. The rise in blood pressure, while usually very great, is of short duration. This rise in blood pressure stimulates the vasomotor centre, the heart beat is quickened for a brief period, then slowed, then if the dose be excessive it may inhibit the heart's action and cause fibrillary contraction of the ventricles and systolic standstill. The lesser or pulmonary circulation is engorged in death from adrenalin. It lessens the rate of elimination and absorption.

Peristalsis is markedly lessened and inhibited (Ott), which we may assume to be due to some nervous mechanism, the stimulation of nerve endings, in Auerbach's or Meissner's plexus, or possibly to lessened blood supply. It acts as a local hæmostatic in peripheral hæmorrhage, is of little value in hæmorrhage from the lungs, intestines, or from the liver, and if used should be given by the mouth. If given in any large amount it is positively harmful and especially so if accompanied by infusion of saline solution. It has been advised in uterine fibroma to lessen hæmorrhage and good results from its use have been reported in inoperable uterine carcinoma. Here it not only lessens hæmorrhage, but appears to lessen the size of the tumor by the production of minute extravasations and their replacement by inflammatory tissue with subsequent contraction. Various untoward effects have followed the use of adrenalin, but I think they have been sufficiently set forth in the body of the paper.

No sane therapeutist would think of using such a powerful agent except when hypotension existed, nor would a cautious one use it too freely, when atheroma is present in any great degree, especially when the cerebral vessels are involved. Its use in pneumonia, even if hypotension does exist, would seem unjustifiable in view of the great engorgement of the pulmonary vessels produced by it experimentally, and the same may be said of pulmonary hæmorrhage and of diseases accompanied by effusion of serum into cavities. Its therapeutical indications are two as a local hæmostatic agent and to raise blood pressure. When used to raise blood pressure it should be given in decinormal salt solution—one part in 100,000 increased to one part in 50,000. It should never be given in alkaline solutions. When given in this manner, as a rule not more than one to one and a half litre should be employed.

Conclusions. The suprarenal gland is essential to life. It furnishes a product which, entering the blood, acts directly upon the cells, increasing their irritability and contractility. This action is most manifest upon the muscle cells of the heart and peripheral vessels. It raises arterial tension to a high degree by increasing the force of the heart, by increasing the peripheral resistance, and by lessening the elasticity of the arterial walls; three factors pointed out by Janeway (53) as essential to the production of vascular hypertension; the fourth, volume of blood in circulation being influenced by the fluids ingested.

If there be continued excess of suprarenal secretion changes occur in the vessel walls corresponding to the pathological condition known as arteriocapillary fibrosis and atheroma, even to the extent of calcification, and I believe we are warranted in concluding that hyperepinephria is causative factor in their production. And, lastly, I desire to call your attention to an unrecognized ætiological factor in the production of disease of the vascular system, namely—the sexual or procreative function. My attention was directed to this while studying the embryology and histology of the suprarenal glands. Its embryologic source (from the Wolfian bodies), the arrangement of muscle fibres in the walls of the veins, and the sinusoids, are suggestive of an erectile tissue, and close relation to the generative apparatus, and I know of no physiological function during which vascular tension is greater than during the sexual act. Excessive venery, then, must be looked upon as an important causative factor. From this view point, syphilis is a concomitant disease.

Alcholism and other intoxications are associated diseases; for the use of intoxicants, in some form, for the purpose of modifying vascular tension, has been common to all people from the earliest ages.

That complexus of symptoms known as neurasthenia has a physical basis in cell exhaustion. In the earlier stages it is accompanied by vascular hypertension and Federn, of Vienna, states "all its manifestations disappear when the hypertension is controlled."

I would like to consider with you the rational, treatment of vascular hypertension by rest, exercise, massage over the cardiac region, warm or hot baths, saline purgatives, especially sodium sulphate. Alkalies, which lessen the activity of the suprarenal secretion, of the thyreoid, which opposes its action, and to give you a physiological reason for the good effects obtained by the use of iodides. I should like to point out the abuse of the nitrites, the hypnotics and narcotic drugs, but time does not permit.

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GLEANINGS CONCERNING MENSTRUATION.

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In spite of the attempts which from time to time have been made to elucidate the phenomena of menstruation, it nevertheless is evident that our knowledge of the mechanism and utility of this function, and of the structures which participate directly in the production of the menstrual discharge itself, is still very meagre. Regarding the evolution of menstruation we know absolutely nothing, and a careful study of the minute anatomy of the uterus is, in this respect, of little service to us, since the relationships of structure and function are not always so very apparent.

Menstruation is peculiarly a function of the uterus, so likewise is parturition, but gestation is not, for the fecundated ovum may, and often does, develop and attain maturity outside this organ altogether. Vicarious menstruation may be a possible, but it is a very doubtful phenomenon. Epistaxis, hæmatemesis, hæmaturia, and hæmoglobinuria may incidentally be noted in cases of more or less prolonged suppression of the menses, but we must not thereby assume that an important function of the uterus has been usurped by some other organ. The uterus, we know, is not essential for gestation, yet, so far at least as the women of European countries are concerned, the capability to conceive is in a measure correlated with the fitness of this organ to display the external manifestations of menstruation. The belief, it is true, prevails that in this country a woman who never menstruates may neverthe-

less become pregnant, but I am confident that, in any given case of this kind recorded, a careful scrutiny of the facts will reveal some misrepresentation. Menstruation may occur very irregularly and after very prolonged periods of rest, and conception under such circumstances may occasionally occur, but this is a very different thing to its occurrence in a woman who never has and never will menstruate. I have seen many women who, living a marital life and having attained the climacteric age, had never menstruated, but I have never yet seen one so circumstanced in whom conception had ever occurred, and I doubt the probability or possibility even of such an occurrence.

During the child bearing epoch of the woman, the uterus, under ordinary circumstances and when uninfluenced by gestation or lactation, should functionate more or less regularly for three, four, or five days after well defined periods of rest—periods of rest varying in duration from twenty to twenty-four days. Considering the multifarious conditions of life, it is remarkable with what unerring regularity as a rule this periodical phenomenon is displayed. Menstruation is in fact a very stable function, and we can only attribute this to the marvelous power of adaptation to circumstances which the human in common with other organisms possesses.

I have elsewhere[1] endeavored to show that the menstrual discharge in the human female is not a concomitant of a more or less extensive shedding of the uterine mucosa and clinically it is difficult to believe that it essentially is an outpouring of blood from vessels whose integrity has been destroyed by a gross process of disintegration. Speaking generally the uterus behaves like a glandular structure, and it is to this behavior more especially that I now wish to draw attention. Before, however, discussing facts connected therewith, it is imperative that we should have some clear notion of the changes, which, it is alleged by those who maintain the denudation theory, take place in the uterus in conjunction with menstruation. Heape, who has devoted much attention to the study of menstruation in monkeys, refers in the following terms to this function in man: "There are few observers who now hold the view that no denudation takes place during menstruation; most of them consider that, at any rate, the epithelium or part of it, is cast off, and many have come to the conclusion that, although Williams has possibly exaggerated the extent of the denudation, yet still a certain portion of the stroma is expelled as well as the epithelium of the mucosa." He further adds: "It does not seem to be improbable that the extent of the denudation normally varies in different individuals, and that the same individual experiences more or less severe menstrual denudation at different times." Heape has given us a detailed description of these changes, as observed by him, in the case of the *semnopithecus*, and we may briefly recapitulate these here, since it is alleged that changes of a similar, although probably of a less extensive and less pronounced character take place in the human uterus, too.

This author speaks of four menstrual periods which he subdivides into eight stages, as follows:

A. Period of rest; stage I, the resting stage.

B. Period of growth; stage II, the growth of the stroma; stage III, the increase of vessels.

C. Period of degeneration; stage IV, the breaking down of vessels; stage V, the formation of lacunæ; stage VI, the rupture of lacunæ; stage VII, the formation of the menstrual clot.

D. Period of recuperation; stage VIII, the recuperation stage.

A. Period of rest. Stage I represents this period, and as the uterus is then quiescent no special notice need be taken of it.

B. Period of growth. Stage II, the growth of the stroma. In this stage three changes have been observed: (1) A gradual increase in the density of the stroma in the superficial third of the mucosa; (2) an increase in the size of the bloodvessels; (3) an interglandular swelling of the mucosa into the lumen of the uterus in the form of ridges or hillocks. The increase in the density of the stroma is attributed to an increase in the number of the nuclei; virtually a hyperplasia is produced. The nuclei are even subjected to such an amount of pressure that they become elongated and assume a spindle shape. Because the swelling of the mucosa is confined to the interglandular substance the interior of the uterus becomes studded with caruncles.

Stage III, the increase of vessels. In this stage, it is affirmed, there is not only an increase in the size, but also an increase in the number of the vessels located immediately underneath the epithelium, and that the epithelial cells themselves have become so stretched and thinned that they appear more flat than cubical. This stretching of the epithelium is supposed to lessen the density of the stroma as the latter is apparently afforded more room.

Stage IV, the breaking down of the vessels. The superficial portion of the mucosa begins now to degenerate, in consequence of which the superficial vessels rupture, and thereby the red blood corpuscles escape and are scattered about in the stroma. The blood, thus extravasated, is confined still by the intact epithelial lining and lies below it. The degeneration in the mucosa is supposed to be amyloid or hyaline, not fatty in character.

Stage V, the formation of lacunæ. The extravasated blood collects into lacunæ, and these petechiæ appear to the naked eye as dark red spots studding the uterine lining.

Stage VI, the rupture of lacunæ. Denudation of the mucosa takes place now. The degenerating epithelium gives way and allows the contents of the lacunæ to flow into the cavity of the uterus; the lacunæ do not, however, all rupture at the same time.

Stage VII, the formation of the menstrual clot. In speaking of this stage Heape says:

"The full extent of the act of denudation is reached, the severe action disclosed being almost worthy of the term devastating. All over the body and fundus of the uterus the superficial portion, about one third, of

[1] *Journal of Anatomy and Physiology*, xxi, 1887.

the mucosa, including uterine and glandular epithelium, stroma and bloodvessels, is cast away leaving behind a ragged wreck of tissue, torn glands, ruptured vessels, jagged edges of storma, and masses of blood corpuscles, which, it would seem hardly possible, could be satisfactorily healed without the aid of surgical treatment."

Stage VIII, the recuperation. This stage comprises five important processes: 1, The reformation of the epithelium; 2, the reduction of the blood supply; 3, the formation of new and recuperation of old bloodvessels; 4, the changes which take place in the stroma; 5, the behavior of the leucocytes.

We are advised that the reformation of the epithelium begins before the menstrual clot is expelled from the uterus and prior to the cessation of the flow of blood into the uterine cavity, and that it is regenerated from the stroma cells as well as from the torn edges of the glands. Further, it is affirmed that the reduction in the size of the hypertrophied mucosa, and the withdrawal of the extravasated blood into the circulatory system causes a diminution in the bulk of the tissue enclosed by the new epithelium. In consequence of this reduction of bulk the tissue is at first very open, but afterwards the stroma is drawn together, and the epithelium follows; the epithelial cells lose thereby their flat character and assume the columnar form.

In anticipation of such activity as takes place in the uterus during menstruation, there is undoubtedly a gradually increased determination of blood to this organ, and this increase in the vascularity attains its maximum when the function is at its height, but gradually thereafter the blood supply is diminished, until a state of equilibrium is again reached, and this I designate the resting stage.

The menstrual discharge, it is well known, is not always very typically hæmorrhagic in color, and when it is, it is not invariably of the same hue; a statement which applies not only to one individual, but even to one menstrual period. It may be greenish or brownish, it may be pale or dark and in fact black, or, again, it may be of a bright red color. Under ordinary circumstances it should be liquid, but sometimes it becomes inspissated, and frequently it is more or less clotted. It may be so scanty, amounting merely to a spot or two, that the use of a diaper is discarded altogether, or again the normal amount in a given case may be so great that the diaper has to be changed three times in the twenty-four hours. The menstrual discharge should have little or no odor, but sometimes it is more or less offensive, and occasionally articles of silver, worn at the time of menstruation, tarnish more readily and markedly than at other times, in consequence of the presence of some volatile sulphur or ammonia compound in the discharge.

The menstrual discharge, under normal circumstances, may and often does make its appearance while the individual is asleep in the recumbent position, yet the amount then lost is not materially different to that lost by the same individual when the discharge appears during ordinary locomotion, or whilst cycling, a fact which is somewhat incomprehensible if the discharge is purely and simply an outpouring of the contents of ruptured vessels. Moreover, it is noteworthy that female acrobats and contortionists, engaged actively in their pursuits, lose neither more nor less than other women. Again, the increased determination of blood to the generative organs, induced by sexual excitation, does not disturb the tenor of menstruation, unless perhaps this influence is exerted when the function is actually in existence. Occasionally it happens that the menstrual discharge, instead of escaping forthwith, is retained and accumulates in the vagina, in the vagina and uterus conjointly, or in the uterus alone. This untoward event is noted when the sole abnormality existing is an imperforate hymen, or when, in the case of a uterus didelphys, one of the two uteri is imperforate. Retained under such circumstances, the discharge is usually more or less treacly in consistence, and presents a very different appearance to that of old extravasated blood, allowing even for its intermixture with other excretions. The uterus, thus distended, may form a more or less distinct abdominal tumor, and the resulting tension may cause the retained fluid to ooze into the peritoneal cavity through one or the other Falloppian tube.

Despite these conditions, menstruation takes place month after month, and before relief is afforded by surgical intervention two or three pints of fluid may have accumulated. Accumulation to this extent is compatible with a theory of secretion, for secretory pressure is a powerful force, but it is practically impossible to conceive that it could result purely and simply from capillary rupture, since capillary pressure is comparatively speaking a very feeble force and would in the very initial stage of uterine tension be readily annulled. Stretched in this manner and bathed by a fluid which, to say the least, can exert no salutary influence, it is hardly feasible that even the epithelial lining of the uterus should month after month undergo wholesale denudation and regeneration, and this applies more cogently still to those gross changes which are alleged to take place in the stroma, too.

Curettage of the uterus is often practised, both immediately before and immediately after a menstrual period, as well as during the so called resting stage, but it seldom happens that the periodicity of menstruation is disturbed thereby; very occasionally, however, a more or less prolonged spell of amenorrhœa does appear to ensue. A greater or less amount of blood is lost at the time of the operation, but rapidly thereafter the vessels become sealed, and the hæmorrhage is soon staid. Now, if an interglandular swelling of the mucosa, taking place before menstruation, caused "hillocks or ridges" to form in the endometrium, and if at the same time the vessels underneath the epithelium were augmented in number, then curettage practised at this time would be a hazardous procedure, since it could not fail to disturb very materially both the process of denudation and the process of recuperation, but curettage at this time is not more likely to disturb the menstrual phenomena than when practised

during the resting stage. Similarly, curettage practised immediately after menstruation, when the epithelial cells were being regenerated, would inevitably retard the process of repair, and thereby the next menstrual period would be unduly delayed, but no such sequence is noted.

The mucosa, it is generally admitted, is a highly resilient structure; if, however, the superficial portion of this were shed, at each menstrual period, its restraining influence would at those times be progressively so materially impaired that submucoid fibroids would make their way towards the cavity of the uterus, not only more rapidly, but more commonly than is their wont. Evulsion of these new growths is not thus effected, but results from a gradual necrosis of the mucosa immediately overlying them, induced by vital pressure.

Worry often causes the menstrual discharge to appear before its time, and mental shock, experienced during menstruation, may suddenly arrest the flow and may serve to hold it in abeyance not only during the remaining portion of this period, but for one or more months thereafter. If the denudation theory of menstruation is maintained, then these moods of the uterus are inexplicable; if, however, the menstrual fluid is an excretion, then the behavior of the uterus generally becomes more intelligible.

Again, ablation of one or both ovaries, for disease, may take place shortly before or soon after a menstrual period, and under such circumstances it is frequently noted that the menstrual discharge makes its appearance almost immediately after the operation. Here we witness a sudden conversion of the uterus from its biostatical into its biodynamical state; the resting stage has not been completed before there is a requisition for active functioning, or the former state has hardly been entered upon before it is abruptly terminated. This behavior is attributable to nerve rather than vascular influence, and is not compatible with any denudation theory.

Membranous dysmenorrhœa, which is comparatively speaking a very rare disorder, is looked upon by some as a phenomenon which can be adduced in support of the denudation theory. In one of the cases of this type which have come under my care the membrane was more commonly extruded during the resting stage, and without any blood colored discharge, than during menstruation. Moreover, membrane very similar to that which characterizes membranous dysmenorrhœa is cast off by other structures than the uterus. Consequently the very occasional exfoliation of membrane by the endometrium, even in conjunction with menstruation, is of little or no value as evidence corroborative of the denudation theory.

18 Gordon Square, W. C.

A Condition Simulating Inguinal Hernia is the protrusion of masses of fat through the canal in front of the peritonæum. If this fat be later absorbed a true hernia may result, owing to the dilated condition of the canal which remains.—*International Journal of Surgery.*

CHRONIC ATROPINE POISONING.

By John Boyd Tyrrell, Sc. M., M. D.,
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It is not an infrequent occurrence in ophthalmic practice to produce atropine poisoning by the use of this drug as a mydriatic, and acute atropine poisoning from the use of belladonna plasters is not an unusual thing. The case which I have to report is, however, an extremely interesting one, and is, I believe, unique in at least one respect, as a case of ectotoxæmia:

W. D. S., male, age fifty-nine years, came under my care during January, 1906. Patient had been failing in health and strength gradually, but perceptibly for the last four or five years. He had been treating during this time with several different physicians, all of whom told him that his trouble was heart disease, the nature of which was not fully understood. Angina pectoris, valvular disease, dilatation, hypertrophy, etc., were in turn diagnosticated. The x ray was used by one physician, who told the patient that his heart was enormously enlarged and extended far to the right of the right border of the sternum. He simply passed from one to another in an earnest effort to get relief, but treatment seemed to be of no avail.

On examination I found a poorly nourished body, muscles flabby, weight about 130 pounds. His usual weight was about 180 pounds. Skin very dry. Mucous membranes dry. He complained much of dryness of the throat and mouth. He was very nervous and irritable. A tremor was present, not only of the hands and limbs, but of the head as well. The tremor was aggravated by voluntary effort.

The lungs were normal on physical examination, breathing was labored especially in the prone position.

Temperature ranged from 98.6 to 100.6. Pulse from 100 to 140 per minute, and very irregular, with high tension. On slight exertion the pulse would go up. An impulse was transmitted to the whole præcordium and to the epigastric region. Palpitation was very troublesome.

On examination I found the left heart slightly enlarged, the apex beat in the nipple line and about 4.5 centimetres below. There was slight accentuation of the aortic second sound, and a slight blowing systolic murmur could be heard over the apex. This murmur was not present at all times. After exertion or excitement it could be heard. The action of the heart was very unsteady; it was like an engine running without a governor.

There was at all times that peculiar form of restlessness characterized by a constant desire for action associated with lassitude, and assuming at times the proportions of mental excitement, mild delirium, and even hallucinations.

His eyes had been treated several years ago and the lids had been "seared," as he called it, for granulations, by a caustic. There was a marked cloudiness of the cornea of both eyes, with a distinct thickening, resembling a cataract, directly in the centre of the pupil of each eye. He declared that previous to this treatment, fourteen years ago, his eyes were perfect, so far as he knew.

In 1892 he began the use, on the advice of some kind and perhaps well meaning friend, of a solution to "make the pupil larger" that he might see "around the scar." The results were so satisfactory that he used it again and again.

The patient was a veterinary and the nature of his work, especially in surgical or dental cases, necessitated the use of maximum dosage. In the morning he would use the drops, and if he had anything very important to do during the day he would use it again,

and very often in double strength. In this way the amount used daily and weekly was considerably in excess of what would ordinarily be used in practice.

This became a routine, and while his sight was temporarily improved, he began, after using the solution for a few years, to become weaker and to lose flesh, and noticed that he tired easily, and that his heart would "flutter" at times. About five years ago the heart disturbance so annoyed him that he treated occasionally for it, but without much benefit, and, as I said previously, had been treating continually since.

I suspected, in fact I was convinced after three or four days of unsuccessful treatment, that the case was one of poisoning of some kind. The patient and the entire family vehemently denied that there was drug addiction. However, I was not satisfied and decided to do a little detective work of my own, an undertaking in which I was aided by a brother of the patient. In my conversation with this brother it developed that the patient was using something in the shape of an eye water. On further questioning the following facts were elicited. In 1891 patient was treated for granulated lids. The treatment left him in poor sight, and the following year, 1892, he began using this solution which proved to be a solution of atropine sulphate, 4 grains to the ounce. He procured the atropine from local druggists, and dissolved 4 grains in an ounce of water and used it with a medicine dropper.

I at once interdicted the use of the drops and treated him by elimination and occasional anodynes. He began to improve after the third or fourth day, and his gain was slow but gradual. To-day, three months after the interdiction of the drug, he is able to be out. His weakness is quite marked and he still has a very troublesome tremor or "shaking," as he calls it. His pulse rate ranges from 80 to 90 per minute. It does not intermit, and the quality is fairly good.

This is the age and day of drug poisoning. Progress in the arts and sciences, with an increase in educational facilities, continues to make man a slave to the potent influence of drugs. The science of medicine has to record in its pages many and remarkable advances in the prevention and treatment of disease. With the advance in civilization we have more need to work out ways and means by which our artificial modes of living may be compensated; for the farther removed from Nature we are the greater necessity for the prosthesis.

It is now a second nature to go to the local drug store and get "something" for our ailments. It can be procured. The modern druggist has what one may call for, and the variety and amount that he may sell is without restriction, except in a very few instances. Morphine, cocaine, etc., are more difficult to obtain. Still the laws are very lax as regards morphine.

Acute poisoning from the use of many well known drugs is extremely frequent. Acute atropine poisoning occurs not infrequently from the use of the alkaloid in ophthalmic practice, and also from the use of belladonna plasters. The continued use of atropine as a mydriatic over an extended period of time, finally causing collapse and symptoms of poisoning is, however, I believe, unique. There can be no question that atropine can produce a disturbance of the circulatory apparatus just as occurred in this patient. There can be no question that a sufficient amount can be absorbed through the eye into the general circulation to produce a systemic intoxication.

The action of atropine may be summarized as follows: The pulse is quickened through stimulation of the heart muscle and paralysis of the inhibitory mechanism. Hence the accelerated pulse rate and the perturbable action of the heart when disturbed. It is the loss of inhibition which causes the symptoms resembling the loss of the governor to the engine.

Arterial pressure is increased through stimulation of the vasomotor centre, and through the increased heart's action. Respiration is strengthened by small doses through stimulation of the respiratory centre. Large doses paralyze the respiratory centre, and thus prove fatal. Intestinal peristalsis is increased by small doses and arrested by moderate or larger doses. The temperature is increased by small doses; diminished by large doses. The pupil is dilated. Secretion is quite generally diminished through paralysis of the nerve filaments supplying the secretory cells of the glands. As a result of the diminished secretion, there is a dryness of the mouth and pharynx; a dry condition of the skin, often accompanied by a rash, a dry and glazed condition of the pupil. The urine is increased in amount sometimes. It was at times in my patient.

Locally applied, atropine diminishes the sensibility of the part. It tends to paralyze the ends of the motor nerves; at the same time there is a marked excitation of the cerebral centres and of the spinal cord. The result is that peculiar form of delirium which is characterized by constant desire for action associated with lassitude.

Atropine has no action on voluntary muscle, but involuntary muscles are depressed or paralyzed, according to the amount of the drug used.

In atropine poisoning, and especially from its continued use over so long a time, the prognosis is not good. The patient may rally by proper treatment on the withdrawal of the drug, but there seems to result a derangement of the circulatory and digestive apparatuses from which they never recover, and are subject to occasional attacks of delirium, all of which contribute to make the patient mentally *non compos mentis* and physically a true *Morbi Asthenici*. The ablienation in these cases is a loss of retentive accuracy in memory. Improvement is very slow and is marked by great irritability of temper. These patients may live and appear apparently well for a few years and then die of some intercurrent trouble; or, in a few instances, they have landed in asylums, only to live a few years.

Of the treatment only a few suggestions need be made. It should be symptomatic. Morphine is often indicated to quiet delirium and excitement. Hot baths, pilocarpine, physostigmine are of value in treatment.

The most complete antagonism known to exist between two poisons is that between muscarine, the alkaloid contained in the toad stool, Agaricus muscarius, and atropine. Muscarine causes spasm of the ciliary muscle, contraction of the pupil, produces profuse perspiration and salivation, strong peristaltic action, and, finally, slows the heart through irritation of the vagus. This, in acute cases might be permissible, but in chronic cases would not be used.

PHYSIOLOGICAL ACTIONS AND THERAPEUTICAL USES OF THE ROENTGEN RAYS.*

By Russel H. Boggs, M. D.,
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In order to determine the therapeutical value of the Röntgen rays, it is necessary to study the physiological actions. During the last two or three years a great deal has been done to develop rediotheraphy and it has passed from a state of empiricism into that of a more exact science. The apparatus has been made more perfect and the operators have become more familiar with the agent and are able to determine and employ the same quantity and quality of the rays in each condition, thus producing nearly identical results. This accounts for cures becoming more numerous and accidents less common. The physiological action of the x ray in the various tissues has been carefully studied and is fairly well determined. This enables the physician to determine whether the Röntgen rays are indicated or not, when a patient presents himself for treatment.

It has been demonstrated that the same percentage of Röntgen rays affect tissues differently, and this explains how lymphatic glands will undergo a degeneration with almost an entire obliteration of the chain without seriously influencing the surrounding tissues. All tissues which have undergone pathological changes react more quickly and intensely. Both macroscopical and microscopical examinations show how the rays act on the pathological and normal, as well as the different tissue. The selective action of the rays for epithelial cells explains how certain diseases are cured while others are unaffected.

Speaking further in regard to the physiological action of the Röntgen rays, I cannot do better than quote from a few authors who have made extensive study of the physiological action of the Röntgen rays and have drawn conclusions from careful and repeated microscopical examinations. In an editorial of the *Archives of the Röntgen ray*, the editor states:

The activity of development of the cellular constituents of a part and the amount of cellular proliferation modify the reaction. The more active the cellular proliferation, the more readily do the cells respond to irradiation.

The stage of maturity to which the cells have attained has a decided influence upon the cellular reaction; in the case of epithelial and endothelial cells it has been found both experimentally and clinically that cells that are fully matured react less readily than those still in the process of development; in the case of lymphocytes and leucocytes, degenerative changes are advanced by full maturity, whilst arrest of development and retrogressive changes are the lot of the immature.

That the nature of the cells produced has a modifying influence upon the reaction has been too repeatedly pointed out to be here dwelt upon. The only appreciable result of irradiation upon the red blood corpuscles is a decrease in their physical resistance; no alteration in the hæmoglobin has yet been established. The white cells, on the other hand, are very susceptible to irradiation; the leucocytes show marked degenerative changes, mainly in the direction of the fragmentation of the nucleus. The protoplasm of the cells, more particularly of the polynuclear variety, undergo a degenerative change, being broken up into small masses, which either refuse to stain or stain badly. This plainly shows that their physiological evolution is hastened.

The epithelial cells of the body, both cutaneous and parenchymatous, are effected in proportion to their vitality. Dead cells are uneffected, fully matured cells are very resistant; the more embryonic forms of cells are easier effected, a retardation in development preceding degenerative metamorphosis. Where healthy structures are exposed to the action of the rays, the primary changes of degeneration and destruction of the epithelial cells have been found to precede proliferation of the connective tissue, the vascular changes being a late manifestation of irradiation. The destruction of the Malpighian corpuscles and cellular elements in the spleen, as noted by Heinecke, is a well known illustration of the influence of irradiation upon organs built up of lymphoid tissues. Lepine and Bolud's experiments show that the glycogenic function of the liver, as well as the cells, is effected by irradiation. Tilden Brown, Albers-Schoenberg, and Frieben, among others, have shown the specific influence of the x rays upon the reproductive organs.

Beclere states the following:

Pathological experiments had already shown us that the Röntgen rays, in their irritant and inflammatory action on the skin did not act primarily on the vessels or nerves, but on the cells themselves. A process of chemical dissociation was set up in the interior of the cells analogous to that produced on a photographic plate. As a result of this chemical dissociation cellular lesions occur. It is this cellular lesion which, after a longer or shorter period of latency, provokes the inflammatory phenomena of reaction.

As regards normal tissues, the cells of the skin are most sensitive to the Röntgen rays. In diseased state the cells constituting the various neoplasms are by far the most sensitive.

Pussey states that:

The first alteration takes place in the periphery of the little islands of carcinomatous tissue, and the process gradually spreads from the circumference to the centre. The cells exhibit various stages of degeneration and disappear gradually by a process of cytolysis, which is followed by absorption of the débris. The small vessels which are in enclose relation with the tumor are obliterated by a process of endarteritis.

The x rays primarily effect the morbid cells themselves. At first the cellular activity is stimulated, but if the action is maintained the cells degenerate. The epithelial structures are first influenced, next the vessels, and, lastly, but to a lesser degree, the whole of the cells of the irradiated area.

The cure is completed by the absorption of the diseased cells, and their replacement by connective, the healthy stroma being left in all its integrity.

The influence of the Röntgen rays depends entirely upon the manner in which issues have been irradiated. For instance, a gland could be rayed with a light which would only penetrate the skin and not influence it whatever, or the gland might be rayed with a light so penetrating and of so small a number of rays that instead of destroying the diseased tissue it would only be stimulated. Such illustrations have been reported from time to time and this has improved the technics.

In applying the rays, it is hardly necessary to state that the severity of the reaction can be varied from a mild erythema to necrosis, according to the kind and amount of rays absorbed. As soon as it becomes known to the medical profession that while

* Read before the Pittsburgh Academy of Medicine, March 12, 1906.

all the rays given off a tube are called x rays, but have a different action on tissue, better results will be accomplished. If the rays given off a tube showing the cathode stream were called Röntgen rays, those given off a slightly higher tube were called Crookes's rays, etc., as each has a different place in medicine, it would be easier to account for failures and successes in radiotheraphy.

In a general way, the vacuum of the tube might be subdivided into five degrees for treatment, and then by using the x ray filters with the tube placed at the proper distance the most effective rays can be secured for each condition. Many have shown the value of x ray filters. Walter made a number of experiments and showed that aluminum cuts off the low penetrating rays, while it allows the higher ones to pass, but that silver cuts off the high rays and allows the low ones to pass. These two metals are used in radiotheraphy to a great advantage. In radiotheraphy, the tissues should be irradiated with the exact quantity and quality necessary to produce definite results. The rays should never be employed without some definite point in view.

According to the biological action of the Röntgen rays, diseases have been classified as follows:

1. Atrophy of the skin and its appendages; affections like acne where it is necessary to decrease the size or functional action of the sebaceous gland or the sweat glands in the hyperidrosis.

2. Destruction of the microbes in living tissues; lupus vulgaris, etc.

3. Alterations of metabolism, such as eczema, psoriasis, or any other of the indurated inflammatory skin diseases where it is necessary to cause absorption of inflammatory products.

4. Destruction of certain pathological formations; as carcinoma, sarcoma, tuberculosis, pseudoleukcæmia, and leucæmia.

5. Anodyne action on pain of malignant tumors, or neuralgia and purtitis.

The above indications offer rather a wide field for applications, either alone or in conjunction with some other line of treatment. In some affections, more than one of the actions may be indicated. The question of dosage is a difficult and complex one, since it must be taken into account the diversity of the lesions, the physical condition of the patient, the region affected, the histological structures of the disease, as well as its depth. These must be carefully considered in order to produce the best results. Too great prudence cannot be exercised when applying the rays, too great prudence induced not by fear of excessive dermatitis, but gained from experience and careful study.

While in many diseases the value of the Röntgen rays have been established, there are still certain diseases in which the rays must be applied in an empirical manner, but, knowing the physiological action of the rays and the pathology of the disease, more accurate conclusions can be drawn even in these diseases, as in the theoretical use of any other therapeutical agent.

CONCLUSIONS.

1. To determine the therapeutical indications of any agent, it is essential to study the physiological actions.

8. Radiotheraphy has passed from a state of empiricism into one of a more exact science.

3. It has been microscopically proved that when healthy structures have been irradiated, the primary changes of degeneration and destruction of the epithelial cells precede proliferation of the connective tissues, the vascular changes being a late manifestation.

4. The quality of the Röntgen rays are just as important as the quantity to produce the various tissue changes, and if it were possible for the manufacturers to make tubes which would maintain a uniform vacuum, tubes could be pumped for each condition. The technics of the different operators would be the same and results similar.

EMPIRE BUILDING.

SOME OBSERVATIONS ON THE SIGNIFICANCE OF THE SO CALLED *OCCULT HÆMORRHAGES* IN THE DIAGNOSIS OF ULCER AND CARCINOMA OF THE STOMACH.

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It is our desire to call attention to the significance of two very simple tests, the importance of which was first pointed out a few years ago by Boas (1), as a means of detecting minute quantities of blood in the gastric contents and fæces. This investigator showed that by aid of the well known Weber test, as well as by Klunge's aloin test, it is a simple matter to detect a minute quantity of blood having its origin in the stomach, too insignificant to be seen by the naked eye, and yet which, by its continued persistence, may prove a serious menace to life.

Boas advises the Weber test to be made in the following way:

"About three to five c.c. of glacial acetic acid are added to fifteen c.c. of gastric contents, or five to ten grammes of soft or softened fæces, and the whole is poured into a test tube and extracted with ether. There must be no admixture of alcohol, as this disturbs the test. As guaiac dissolves readily in ether it is not necessary to use the tincture. A few grains of finely pulverized guaiac resin are added to the ether extract, the whole is carefully shaken, and then twenty to thirty drops of ozonized oil of turpentine are added. The whole is shaken up again and then set aside. The color gradually changes to a violet or blue, rendered still more intense by addition of chloroform. This blue tint is sometimes masked by the brownish color of the fluid, and the findings of the test can be controlled by repeating it with Klunge's aloin test. As much aloin as can be taken up on the tip of a small spatula is placed in a test tube and lightly shaken up with three to five c.c. of sixty to seventy per cent. alcohol. The acetic acid and ether extract of the fæces or stomach content, prepared as described, is treated with twenty to thirty drops of ozonized turpentine and then immediately afterward with ten to fifteen drops of the freshly prepared aloin solution. In the presence of blood the fluid rapidly assumes a bright red color, which turns to a fairly durable cherry red as it stands. If there is no blood, the fluid remains yellow for an hour or so, and then becomes a light pink. The color changes may be hastened by adding a few drops of chloroform. Boas

makes a practice of conducting the two tests as controls, and believes that the aloin is superior in several points to the guaiacum. It is not influenced by the presence of fats or fatty acids, and is sometimes positive when the guaiac findings are dubious."

In his first communication Boas (1) pointed out the fact that that form of bleeding which was too insignificant to be detected by the naked eye, and which he termed *occult hæmorrhage,* occurred only in certain gastric conditions. He never found it in the gastric contents in chronic gastritis, hyperacidity, or hypersecretion; it occurred occasionally in gastric ulcer with or without consecutive stenosis; it always occurred in cancer of the stomach, as was shown by an examination in twenty cases.

In a further communication, Boas (2), showed that errors, due to slight bleedings induced by introducing the stomach tube, causing minute erosions, could be avoided by investigating the fæces rather than the gastric contents; however, in the examination of the stools for these hæmorrhages certain precautions must be taken, namely, to exclude food containing fresh unboiled or medium done meats and sausage from the diet for two days before the test is undertaken, as well as to ensure soft movements by means of Carlsbad salts. Menstrual as well as hæmorrhoidal blood must also be excluded, and hæmorrhages from the teeth, mouth, throat, nose, lungs, and intestines must be guarded against. Kozickowski has recently advised a restriction in diet to milk, sugar, flour, bread, rice, eggs, nuts, fruit, and not too much fat previously to applying this test.

Steele places his patients usually on a liquid diet of milk and broths, or on a semiliquid diet of milk, eggs and toast before applying the test.

Boas confirmed his original conclusions concerning the significance of the so called occult bleedings in the fæces as a most important diagnostic test. In a large series of examinations of patients suffering with various gastric disturbances in which this examination was made he was unable to note the slightest indication of the presence of occult blood in the fæces in any functional disturbance of the stomach, in atony of the stomach, in chronic gastritis, in achylia gastrica, hyperacidity, or hypersecretion. Occult blood was, however, found in certain gastric disturbances with more or less constancy. He divides these disturbances into two groups: 1. Disturbances in which occult bleeding is irregularly found; and, 2, those affections in which this condition is constantly found. In the first group may be mentioned ulcer of the stomach, benign pyloric stenosis, and spasm of the pylorus. The sign is first noted in ulcer, when the symptoms are most marked, and usually disappears after the patient has been placed upon an ulcer cure of rest in bed and a milk diet. In as much as these findings occur irregularly in ulcers of the stomach, it is most important to make repeated examinations in order to arrive at proper conclusions regarding the diagnosis of this disease.

Cancer of the stomach is found in the second group of cases in which occult bleedings are always noted. In 124 cases of cancer of the stomach examined by Boas this symptom was noted in 107, that is. 86.3 per cent. The persistence of this symptom in this disease, notwithstanding the most careful attention, that is, diet and rest is, as Boas points out, most remarkable and characteristic. It occasionally happens that in cases of cancer, while the gastric contents do not reveal the presence of occult blood, the fæces will nevertheless present this condition. The constant absence therefore of occult bleeding in the fæces is evidence against the existence of cancer.

Boas, his pupils, and others (Boas and Kochman (3), Hartmann (4), Joachim (5), Schmilinsky (6), Schloss (7), Koziczkowsky (8), Clemm (9), Tedeschi (10), Boas (11), Steele and Butt (12), and Steele (13)) have confirmed the original conclusions concerning the significance of the so called occult hæmorrhages in the fæces. Our own observations agree in every respect with the conclusions arrived at by other investigators. Occult blood was not found by us in ninety-two examinations in forty-seven cases of chronic gastritis; in forty-two examinations in fifteen cases of atony of the stomach; in one hundred and eight examinations in forty-two cases of hyperchlorhydria; in twenty-one examinations in eight cases of hypersecretion; in sixteen examinations in nine cases of acute gastritis; in fifty-seven examinations in twenty-five cases of nervous dyspepsia. So significant is the fact that we have frequently been enabled to rely on the constant absence of this sign as evidence sufficient to exclude the presence of ulcer and cancer, and on the other hand, as evidence in favor of the presence of either a gastritis or some form of gastric neurosis. The following case illustrates this condition:

Case I.—A male, sixty-four years of age, presented himself for examination after having had gastric disturbances for three months; during this period he had lost twenty-four pounds in weight; he had nausea, occasional vomiting; pressure, pain, and distention of his stomach; on palpation no tumor could be detected. The examination of his gastric contents presented an absence of free hydrochloric acid and a low total acidity; frequent examinations of his stools showed an absence of occult blood. The possibility of the existence of a cancer of his stomach was held in mind, but the continued absence of occult blood pointed clearly to the fact that this view was not tenable, as the subsequent history of the case demonstrated; for after a period of a few months the patient had entirely recovered his health.

Thirty-five cases of ulcer of the stomach were examined as to the presence of occult blood in the stools. This condition was found in twenty-six, or seventy-four per cent. It was not noted, however, at every examination, most frequently, however, before the patient had been placed under treatment, and when the pain and nausea were extreme; after the patient had been placed upon the ulcer cure (rest in bed and a diet mainly of milk) for a period of days the occult bleeding usually disappeared. The continuance of occult bleeding after a faithful trial of the ulcer cure has been undertaken, is indicative of the fact that a healing of the ulcer is impossible, and surgical interference must then be considered. We have found occult bleeding a most valuable aid in diagnosis of this disease, especially in the cases in which the symptoms are not decisive and in which the diagnosis varied between gastralgia and ulcer; in every instance in which the ulcer treat-

ment was undertaken, improvement in the patient's condition indicated the correctness of the diagnosis and the value of this sign. This condition is illustrated by the following case:

CASE II.—J. K., male, age 34, consulted us for gastralgic pains, which he had had at intervals for the past ten years. These attacks would come on without definite cause, and would last with varying degree of severity for from one to two weeks. Recently the attacks were accompanied by slight nausea. There was no definite relation between the attacks and the ingestion of food. An area very slightly tender to pressure could be detected in the epigastrium. The gastric contents showed a slight superacidity. The fæces showed occult blood. A diagnosis of ulcer was made, but the patient resisted all rational treatment. After three months he returned for treatment, having had a severe hæmorrhage from his stomach two days previously.

Occult bleeding has often as much significance as pronounced hæmorrhage, and will frequently indicate the presence of an ulcer long before visible hæmorrhage is present, as has been shown in the case just described. The presence of occult blood can be utilized, too, in testing the effect of various forms of treatment in ulcer of the stomach. During the ulcer rest cure the occult bleeding rapidly disappears; on the other hand, Schloss has shown that bismuth which was formerly considered to have a specific effect in the treatment of this disease can no longer be considered in this light.

Twenty-three cases of cancer of the stomach were examined by us for occult bleeding; in but very few examinations was the absence of this sign noted. It was found constantly in nineteen of the twenty-three cases, or 82.6 per cent.; in the other four this symptom was occasionally noted. So constant is this finding that it serves to differentiate cancerous processes of the stomach from other conditions. Thus the examination for occult bleeding assisted us greatly in the diagnosis of the following case:

CASE III.—L. M., female, age sixty-two, consulted us for gastric disturbances which she had had for the past two months. The symptoms of which she complained were nausea, pain in stomach and eructations; she had lost fifteen pounds in weight. Her general condition was good; the examination of the gastric contents showed a normal percentage of free hydrochloric acid. The examination of the abdomen was negative; a tumor was not palpable. The stools constantly showed the presence of occult blood. The diagnosis of cancer of the stomach was made, notwithstanding the presence of free hydrochloric acid and the absence of a palpable tumor. The correctness of this diagnosis was verified by subsequent history of the case; that is, by the final discovery of a mass three months later. The absence of free hydrochloric acid, presence of lactic acid, cachexia, etc.

Occult bleeding is found early in the disease often long before the physical signs of a tumor becomes manifest, as is shown by the history of the case just described.

We append tables showing the presence of occult hæmorrhage in our cases of ulcer and cancer. While the presence of this sign alone, however, has no significance; in addition to other clinical evidence, we have found it of such practical value that we should urge a careful investigation for occult bleeding in all obscure forms of gastric disease.

TABLE SHOWING CASES OF CANCER EXAMINED FOR OCCULT HÆMMORRHAGE.

No.	Name.	Age.	Sex.	Number of Examinations for Occult Blood.	Number Times Occult Blood Was Found.
1	M. N.	72	M	8	8
2	M. M.	62	F	2	2
3	L. F.	58	M	2	2
4	L. H.	46	M	1	1
5	I. S.	59	M	4	4
6	M. F.	42	F	2	2
7	S. L.	69	M	6	6
8	M. R.	58	M	3	3
9	L. M.	62	F	8	8
10	F. S.	52	M	6	6
11	T. T.	73	F	7	2
12	I. R.	81	F	9	9
13	J. L.	59	M	6	2
14	H. T.	64	M	4	4
15	H. H.	66	M	5	2
16	A. G.	73	F	6	6
17	G. P.	49	M	10	10
18	B. C.	57	F	5	5
19	H. O.	73	M	8	3
20	T. L.	71	M	3	3
21	T. E.	6[illegible]	F	1	1
22	F. S.	65	M	1	1
23	T. F.	52	M	5	5

TABLE SHOWING CASES OF ULCER EXAMINED FOR OCCULT HÆMMORRHAGE.

No.	Name	Age	Sex	Number of Examinations for Occult Blood	Number of times Occult Blood was Found
1	A. B.	28	F	6	5
2	T. L.	22	F	3	2
3	A. W.	26	M	4	3
4	E. B.	17	M	2	2
5	W. H.	27	M	1	1
6	H. A.	30	M	1	1
7	M. H.	39	F	2	2
8	B.	24	M	1	1
9	C. H.	31	F	1	1
10	H. S.	38	F	3	1
11	J. B.	34	M	1	0
12	H. Z.	22	M	1	1
13	H. R.	26	M	3	2
14	M. B.	21	F	1	0
15	T. P.	27	M	1	1
16	B. C.	36	M	4	2
17	C. W.	32	M	1	1
18	S. W.	25	F	3	3
19	G. C.	39	F	5	2
20	B. W.	30	F	9	6
21	T. S.	34	M	4	4
22	W. A.	24	M	2	2
23	T. K.	24	M	2	1
24	K. T.	38	F	5	3
25	P. H.	42	M	6	2
26	A. K.	40	M	4	1
27	I. L.	21	M	7	4
28	S. S.	25	F	3	3
29	T. O.	43	F	5	4
30	H. G.	39	M	2	2
31	T. H.	36	F	1	0
32	C. E.	45	F	6	4
33	S. E.	26	M	5	5
34	O. T.	39	M	4	1
35	K. B.	31	F	4	2

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7 West Franklin Street.

THE IMPORTANCE OF ABDOMINAL EXAMINATION BEFORE INSURANCE.*

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Many general practitioners of medicine have experienced the mortification that results from the neglect of a careful physical examination of a patient and have depended too much on subjective symptoms. The general plea of these physicians has been that they are too busy, and send their patients away awaiting further developments, or expecting that some typical symptom may arise and assist them to a proper diagnosis.

In purely functional disturbances the waiting tactics will do no harm, but when we have organic changes progressing in the body, the patient becomes dissatisfied and presents himself to some other practitioner, who carefully inspects the different portions of the body, and discovers the real seat of the disease and the morbid processes producing it.

With the insurance examiner the same carelessness and easy confidence may bring about greater discomfort of mind and a quiet loss of reputation that cannot be estimated.

In most cases the applicant for insurance is not personally known to the examiner, and a careful examination is imperatively necessary for the reason that many who have discovered, or have been told that they are suffering from a chronic disease that is likely to be fatal, are advised to get life insurance. A thorough inspection of every portion of the body especially of the abdomen is not always possible, on account of the inconvenience of removing clothing and also on account of a certain feeling of unpleasantness that comes when the applicant must submit to such a procedure under a stranger.

From what the majority of us have experienced we are led to believe that the examination of the abdomen is woefully neglected by most medical examiners for insurance. In these days when surgery has done so much to enlighten us on the pathological processes that are so common within the abdominal cavity, there is no excuse for such neglect. When we consider that the abdominal cavity contains so many organs of varied functional activity of utmost importance to the health of the individual, we are then brought face to face with our duty to explore this region more frequently. Of course, we must admit that a physical exploration of the abdomen does not give us as perfect results as when this form of diagnosis is applied to the chest; but, nevertheless, much valuable information can be gained by this means.

We have at our disposal three methods of examination: Inspection, palpation, and percussion. Auscultation does not help us much, excepting in aneurysm in the abdomen, and in order to carefully use these means we must have the whole abdomen bare, front and back.

Inspection of the abdomen should be carried out with the patient in the erect position in an easy attitude, either standing or sitting. It should not only be made from the front, but from the sides and the back as well. From this we may observe any abdominal enlargement that results from pleuritic effusion or an old emphysema pressing downwards below the margin of the ribs. A retraction of the walls of the abdomen may be seen that may be caused by emaciation from disorders of nutrition. The bloodvessels of the surface should be noted, and when we see a distention of the veins under the skin, we suspect an obstruction in the portal system or in the right side of the heart. An arrest of the natural movement of the muscles while breathing might indicate some tumor or other enlargement, interfering with their free action. A pulsating aneurysm can be readily found when it becomes large.

In practising palpation the person should be on his back so that all the abdominal muscles are as much relaxed as possible, and we proceed by the application of the hand to the abdomen, and judge the condition of the viscera through the walls. By a feeling of fluctuation we know of the presence of fluid in the cavity, and on deep pressure we can learn of the intensity of pain or tenderness indicative of inflammation, and any abnormally enlarged organ will be outlined to us.

In percussion we have a more accurate means of diagnosis, and when we are familiar with the healthy condition of the contents of the abdomen it becomes the most valuable aid we have.

With a clear knowledge and experience of physical examination of the abdominal viscera in health, and what we learn of living pathology from the surgeon as it is developed now from day to day, abdominal examination is not so difficult as it may seem, and much valuable information may be gained. It would take too much time to enumerate and describe all the conditions that may exist, but it would be profitable to consider the most common cases, and it might be more interesting to give illustrative instances where mistakes have occurred:

Case I.—In the case of a man, thirty years old, employed at polishing, who had been under the care of several physicians from what he thought to be dyspepsia, and feeling that he would not live long, made application for life insurance. He passed the medical examination and the company awarded him a policy. In six weeks thereafter he died, and his certificate read tuberculous peritonitis. The examining physician having heard of the death called on the attending physician to learn if the cause of death was true as given on the death certificate. An autopsy was allowed and confirmed the attending physician's diagnosis.

Here we see what trouble a careful abdominal examination would have saved. Surely in six weeks before death one could have discovered on inspection a distended abdomen. Palpation and percussion would certainly have revealed fluctuation and tenderness very markedly, and even if the diagnosis

* Read before the Philadelphia Medical Examiners' Association, April 3, 1906.

of tuberculous peritonitis were not made, there would undoubtedly have been suspicion of trouble in the abdomen, and the case allowed to await further developments.

In many cases of chronic appendicitis we have a partial means of diagnosis as described by Edebohls, in which by deep palpation along a line extending from the umbilicus to the anterior spine of the right ileum we may develop some knowledge on deep pressure, so that the posterior abdominal wall can be felt if necessary. McBurney's point and the pulsations of the right iliac arteries are landmarks where if there is sensitiveness, tenderness, or swelling, we must be suspicious of an inflamed appendix.

In gallbladder and gallstone disease, where there is no jaundice, the diagnosis is not so easy. There is no doubt that many persons have gallstones, and suffer no discomfort. Riedel states that in Germany ten per cent. of all adults have them, and that in five per cent. of this number they cause no trouble. Thus in some persons the disease is latent, but trouble is liable to begin when the calculi escape from the gallbladder and bring on a long train of sequelæ. In a distended gallbladder due to infection or the lodgment of a gallstone in the cystic duct the tongue of the liver will be elevated, and can be readily made out in the right side below the margin of the ribs. The enlargement of a gallbladder can be distinguished from a cancer from the fact that it is freely movable, whereas the cancer is fixed. The importance of the examination of the region of the gallbladder can readily be seen when we take into consideration that an obstructed calculi can exist, producing trouble such as pancreatitis or choletystitis without even pain or jaundice.

Much annoyance would be saved to the attending physician if the medical examiners were more careful and more exact in examining a person who gives a history of having had typhoid fever years ago. There was brought to my notice not long since such a case:

CASE II.—A man, forty years old, had had typhoid fever when he was twenty-one years old. He had at that time during the convalescent stage an ascites which required frequent tapping to relieve the accumulated fluid. He made a good recovery after a time, but occasionally when he allowed his bowels to become obstructed, ascites would set in, and then there would be a slight jaundice accompanying the disturbance. Sometimes there would be hæmorrhage from the bowels or at others bloody vomiting. He was in the hands of several physicians during these twenty years and they all made the diagnosis of cirrhosis of the liver. Subsequently he came under my care and I concluded that he had had cirrhosis of the liver long enough, and determined to find another explanation for his condition.

On inspecting the abdomen the superficial veins were distended and a distinct enlargement in the right side below the edge of the ribs. The edge of the liver was felt, and the gallbladder seemed to be in good shape. On percussion the liver was found to be of normal size and this excluded cirrhosis. The swelling in the side was not explained and the conclusion was reached that there was a varicose condition of the portal system. In the epigastric region there was marked sensitiveness and tenderness, so much so that on slight pressure the patient winced, and held his breath. These symptoms were quite plain and distinguishable.

After a time he became emaciated and very thin and no food could be retained. He died after having been bedfast for a week; prior to this time he was about the streets enjoying himself as usual and I had not seen him until he took to his bed. The case was of so much interest that an autopsy was asked for and allowed, and briefly stated, we discovered a large mass of adhesions just below the liver entangling the bowels and binding them together. The liver and galbladder were normal, but the lower end of the stomach and the duodenum were congested and the tissue so thin that without much effort they were ruptured. In this case, then, we had an old peritonitis as a result of the typhoid and a subsequent gastroduodenitis.

After his death the usual insurance certificates were brought to be filled out and in looking over the policy I found a clause which stated that no money would be paid if the insured died of a disease of the heart, liver, or kidneys. Of course in this case all these organs were normal. Furthermore, it was learned that several persons from time to time had taken out insurance on his life, the last policy being issued three weeks before his death, and I learned from his heirs that the physician made no careful examination, just asking questions, and the abdomen had not been looked at. The insurance certificates were properly filled out and sent in; immediately the agent of the company waited on me and asked me the presumptuous question if I thought the case was an insurable interest at the time the policy was issued, three weeks before his death. I refused to answer the question, whereupon he stated that it was a shame to deprive the payment of the claim to his heirs because I would not give him my opinion.

I did not think I had any right to answer his question. In the first place I followed out the requirements of the company in filling out a long and ambiguous certificate; second, I had not attended him at the time the policy was issued for I had only treated him a week prior to his death; third, I felt that he having been examined by the company physician I would be trespassing on my confrère's grounds if I expressed an opinion against his examination; and, lastly, if I expressed an opinion that he was not insurable then the agent would lay the blame entirely on my shoulders, whereas my opinion should be treated in confidence.

This as you see caused me much annoyance both from the company, who continually sent men to interview me, and also from the family of the insured, who were anxious at the delay. I do not know how the case was settled, neither do I care; but I relate this case more to show the importance of greater care in the examination of applicants, and the great annoyance that could be averted if examiners were more thorough.

It would be a long paper to cover the whole ground of abdominal troubles that might be discovered, such as fœcal impaction, aneurysms, and tumors, to say nothing of the different inflammatory processes that often occur.

In conclusion, we must not forget what palpation of the kidney might reveal where there is an obstructing calculus. In such a condition the kidney would be very much increased in size, due to the obstructed ureter, and a large mass should be felt in the side.

We see from what has been said that it would not always be possible to make an exact diagnosis, but by a careful exploration through the walls of the abdomen it is in most cases probable that we can learn if any disorder exists.

639 NORTH SIXTEENTH STREET.

IMPORTANCE OF THE CYSTOSCOPE IN DIAGNOSIS AND TREATMENT OF DISEASES OF THE URINARY ORGANS.*

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For urological purposes the importance of the cystoscope cannot be overestimated; it is more valuable than the ophthalmoscope to the oculist, for with it not only may the surgeon recognize pathological changes, but he is also enabled to treat disease. An absolute knowledge of bladder conditions cannot be reached except through the medium of the cystoscope. If the seat of trouble is in the ureters, renal pelves, or kidneys, more accurate conclusions may be drawn after ureteral catheterism than by any other means.

For a thorough cystoscopic examination one must employ both the direct and indirect view telescopes. If only one is to be used the indirect view is preferable, though a fairly correct observation may be made with either. In spite of the fact that a much clearer picture is given by the direct view telescope and that the size of any foreign body or ulcer can be more accurately measured with it, one is often better able to judge of pathological conditions, especially in the trigonum, by looking directly down on them through means of the indirect method.

With the observation cystoscope it becomes possible to detect the presence of inflammation by the appearance of the bladder; ulcers and foreign bodies are easily noted; trabeculations and saculations show plainly, and by means of searchers used through the cystoscope we may discover calculi in the saculations. The seat of hæmaturia is usually readily observed, and since we may distinguish cloudy jets of urine from the ureteral orifices diagnosis of renal pyuria is facilitated. Not infrequently the stone searcher will fail to ascertain the presence of a vesicle calculus which may be easily seen with a cystoscope, its composition being often determinable by its appearance. The cystoscope will also demonstrate whether litholapaxy or lithotomy should be performed or whether there is an encysted stone.

With the operating cystoscope we are enabled to remove fragments of calculi and other small bodies, such as a broken catheter or hairpin, which may be revealed in the bladder. It is often impossible to determine the quality of a tumor seen, but if a small piece be snared off for examination by the microscopist, prognosis in case operation is decided upon will be much more accurate, and diagnosis of malignancy or nonmalignancy having been established the character of the operation will be decidedly influenced. Small papillomata or polypi may be removed with the operating cystoscope but usually in these cases a suprapubic cystotomy is indicated.

Treatment by local application to the bladder in males for the cure of tuberculous or simple ulcerations is a therapeutical measure requiring further investigation before it can be recognized. For the same conditions in the female it has already taken its place and cannot be too highly spoken of in selected cases, the difference being due to the fact that in the female it is easy to passively dilate the bladder with air, whereas in the male it can rarely be done. There are two reasons for this: First, because the abdominal muscles are more rigid in the male; and second, because straightening the urethra is apt to cause a spasm of the bladder. It is, however, sometimes possible if the body be well flexed, the hips sufficiently raised, and the posterior urethra thoroughly cocainized, to dilate the bladder passively in the male. In some cases if the bladder is once filled with air it may not contract until the operation has been completed, and in still other cases when the bladder refuses to remain dilated after the cap has been removed, the ulcer may be treated by keeping it in view as the air is allowed to slowly pass out. When the air has all escaped the ulcer will be at the end of the endoscope, and application may be made to it directly. This method requires much more delicacy and is appreciably more difficult than the other.

One case to illustrate the importance of careful cystoscopic examination:

Patient, sixty-five years old, was referred to me by Dr. Held, of New York. He had been passing a moderate amount of blood in the urine for three weeks, was very cachexic and had noticeably lost weight in the last four months. A cystoscopic examination showed the origin of his hæmorrhage to be a tumor about the size of a mandarin orange projecting into the bladder. It was situated at the left extremity of the trigone and involved the orifice of the ureter. Rectal examination discovered a moderately enlarged prostate, and a mass above and to the left. Diagnosis: Cancer of the bladder. Considering the condition of the subject and the size and location of the tumor, I decided that an operation would put him to unnecessary suffering and in all probability shorten his life. I therefore counseled making him as comfortable as possible by the use of morphine, etc. Unconvinced by the advice, his family two weeks later called in another doctor, who said the exploratory incision should be made. One hour after the operation the patient was dead. I doubt if the last surgeon would have attempted to operate if he had used the cystoscope.

The ureteral catheter is of great aid in diagnosticating pathological conditions of the ureter, the renal pelves, and the kidney. An observation cystoscope will show if there is tumefaction of the ureteral orifice, but we are sometimes incapable of deciding whether pus is issuing from the ureteral meatus or not. If we conclude that there is an emission of pus we are unable to determine whether it is due to inflammation of the ureter only or to involvement of the entire tract. By the employment of the ureteral catheter if, upon introducing it a short distance, the urine secured is purulent we have established the fact that there is supuration somewhere beyond the ureteral meatus. If the catheter is passed to the renal pelvis and collect therefrom clear urine we must conclude that the pus proceeds from the ureter only. If pus is drawn from the renal pelvis as well as the ureter the entire tract is involved. It sometimes happens that urine obtained from the lower part of the ureter is comparatively clear, while that from the renal pelvis is quite cloudy. This is probably due to a slight displacement of the kidney which causes a sedimentation of pus in the lower pole of the renal pelvis, decanting thereby clear urine; when a catheter passes

* Read before the Morris County (N. J.) Medical Society.

well up, straightening the pelvis, the pus drains out. Sometimes we find no stream of urine from the lower part of the ureter, and upon inserting the catheter further encounter an obstruction after passing which there is a free urinary flow. This indicates either stricture or kink of or pressure on the ureter, or impacted calculus.

Ureteral or pelvic calculi may be detected by the wax tipped catheter. Kelly reports thirty-eight cases examined by this method of which number five were negative to the x ray, but positive to the wax tipped catheter. It is much more difficult to pass a wax tipped catheter in the male than in the female, but I have successfully used the method. The skiagraph will sometimes give the shadow of an object apparently in the ureter, when if a ureteral catheter containing a stylet is passed and a second picture taken, it may be seen that the supposed stone is far away from the shadow of the stylet and therefore far away from the ureter.

The ureteral catheter is used to exclude ureteral and renal disease as the following case will show, which I report by the kindness of Dr. C. E. Tetter, Newark:

Dr. C., age forty; family history good; never had had any serious illness until three years ago, when he was taken with fever and pains in the vicinity of the left kidney and ureter simultaneously with the appearance of a mass in the left iliac region. He was treated with ice bags and after four weeks recovered. Thereafter, however, he experienced occasional pains in the same spot, accompanied by a slight rise in temperature. About ten days before I saw him he had begun to have fever and a recurrence of the mass in the left iliac region, his temperature running up to 104° and his pulse to 120. At the beginning of his illness there had been some pain over the kidney, and a large amount of uric acid in the urine, together with a few pus cells. The patient's own diagnosis was renal calculus, with consequent formation of an abscess in the ureter which had ruptured into the rectum. He was convinced that he had passed urine by the bowel. Dr. Teeter could not agree with him in his diagnosis, and called me to catheterize the ureters. I found the bladder normal. The ureteral catheters glided smoothly to the renal pelves and the urine collected at each four inches as the catheters were withdrawn was perfectly clear. Upon operation Dr. Erdman found the abscess to be due to stricture of and inflammation about the sigmoid.

In this case examination of urine taken from the bladder would have been useless, for, if the doctor-patient's diagnosis had been correct, the bladder would have collected only the flow from the right side, that from the left kidney passing into the rectum. That the ureteral catheter slipped smoothly up the left ureter practically established the absence of any tumor connected with the ureter, but when additionally the urine from all points along the ureter was found to be perfectly clear there could be no hesitancy in deciding that the abscess did not communicate with the ureter. Having eliminated the possibility of ureteral trouble, operation was much simpler than it would have been had the exclusion not been made.

Not infrequently there is hindrance to the passage of the ureteral catheter due to stricture, kinking, a fold of mucous membrane, or impacted calculus. If stricture is suspected a filiform may be insinuated and after that a finely pointed bougie. In reversal, a blunt catheter will slip by a fold of mucous membrane more readily than an olive pointed one. If a kink of the ureter is suspected the catheter may be induced to pass by straightening the patient's body and having an assistant lift the kidney. Calculus being apprehended as the cause of impediment may be detected by a wax tipped catheter or Cabot's phonophore.

Before undertaking any operation on the kidney the condition of both kidneys and their functional capacity should be accurately determined. If one kidney is found to be practically destroyed or to be the seat of suppurative nephritis with perhaps the formation of multiple abscesses, or the seat of malignant growth, or to be tuberculous, it should be removed in case the other kidney is capable of withstanding the shock and performing the work of both. But if the other kidney is found inadequate no operation should be performed. Provided kidney secretions are studied there is no danger of being misled by the renorenal reflex. Occasionally a surgeon has lost a patient a few days after nephrectomy and necropsy has discovered the subject to have never had but one kidney. If a cystoscopic examination had been resorted to before operation it would have shown a single ureter, or if there had been two, the urine collected from each would have been identical. Diagnosis in such case could not have been made with the cystoscope, but the instrument would have demonstrated that the patient had no healthy kidney, and so operation would have been refused.

Urinary separators have been employed to quite an extent, but none is absolutely accurate. The contention made for them, that they are less hazardous than ureteral catheterism, is scarcely true. When properly performed, catheterism of the ureters is practically dangerless. Another assertion, to the effect that it is impossible to catheterize all patients, carries small weight because if a surgeon accustoms himself to both forms of cystoscope his failures will be estimably few. And it is a fact that if the bladder is so badly deformed as to make ureteral catheterism impossible, it is also so badly deformed as to render the separator wholly unreliable. In cases of irritable or much distorted bladder the cystoscopist may fail on the first and perhaps on the second trial, but as a rule he finally succeeds.

Following a microscopist's report of tubercle bacilli in the urine, it becomes imperative to ascertain if it is tuberculosis of the bladder or of one or both kidneys. In case there is tuberculosis of the bladder, and the physician wishes to determine if there is tuberculosis of the kidney also, separators will not avail in the least; the ureters must be catheterized. If with the observation cystoscope no tuberculous inflammation of the bladder can be seen, the surgeon is enabled by catheterism of the ureters to conclude definitely whether one or both kidneys are the seat of tuberculous inflammation. After such examination he is better empowered to decide if an operation is indicated, and to more accurately give his prognosis.

Treatment of inflammation of the ureter, the renal pelves, and kidneys must be either general or general and local. In a large number of subjects internal medication together with proper diet and regimen is sufficient to effect a cure. Especially is this so if the inflammation be descending; but there are also many cases which remain obdurate

under this line of treatment and require either local use of antiseptics or surgical interference.

It would be of doubtful benefit to pass a catheter through an acutely inflamed ureter. In so far as I know it has been done only once, and resulted in fatal uræmic fever. Still, if the surgeon is assured he is dealing with a hydronephrosis due to plugging of the ureter by inflammatory exudate or a mass of pus, and an operation for relief of the condition is contraindicated, the passage of the ureteral catheter might be employed as a last resort to evacuate the renal pelvis and establish drainage. Speaking in general, then, acute inflammation of the ureters or renal pelves is a contraindication to the passage of the ureteral catheter.

In purulent ureteritis or pyelitis, either subacute or chronic, lavage will sometimes save the kidney and save the patient an operation. Strong solutions of silver nitrate are recommended by some authors, but my preference is for the newer salts of silver which are nonirritating. If there is a large amount of pus thrown off by the inflamed area it is well before using silver solution to first flush with boric acid. Lavage should be performed as often as the urethra and bladder will tolerate the cystoscope. I have had several patients who suffered no inconvenience from catheterism three times a week.

Catarrhal pyelitis, even with a slight involvement of the kidney, may be comparatively quickly cured. This condition in all probability if not apprehended terminates in Bright's disease. It is therefore essential that it be recognized early and treated properly before there is much invasion of the renal substance. If internal medication, diet, etc., do not occasion diminution and disappearance of inflammation lavage of the renal pelves should be employed. I have obtained best results from mild solutions of silver nitrate in a boric acid medium, used once or twice a week. After two or three months treatment is discontinued, the patient being simply kept under observation. It is rarely found necessary to again have recourse to lavage, for though the inflammation may not have entirely subsided, improvement once begun continues so that after sixty or ninety days the urine becomes perfectly normal.

A certain number of advanced cases of nonmicrobic nephritis may be decidedly benefited by lavage of the renal pelves. I refer to those known as large white kidney, associated with considerable catarrhal pyelitis. It is not advisable, however, to employ lavage until the methods in ordinary use have proved unavailing. If a patient is sent to me with a diagnosis of nonmicrobic nephritis I first ascertain whether he has been treated in such manner as to victoriously combat the disease, and if I discover his treatment to have been problematical, lavage is postponed until trial has evinced the inefficiency of internal remedies alone. Too much time, however, should not be wasted before resorting to lavage if it is deemed essential, for the sooner such treatment is begun the better will be the results. It is hardly necessary for me to say that if causal agents of the nephritis are found in intestinal fermentation or toxines circulating in the blood such conditions should primarily be removed.

The question is frequently asked: "How can washing of the renal pelves influence in any way inflammation in the kidneys?" I am unable to reply conclusively, but think the results obtained due to: First, hot water applied directly to the inflamed organ for about half an hour at a time; second, curing the pyelitis which may have been acting as a source of irritation or as a nidus of inflammation; third, the solution which, being slightly exciting, probably acts as a counterirritant; fourth, cleansing the inflammatory products from the renal pelves; and fifth, passage of the ureteral catheter which stimulates the ureter, and thereby obtains better drainage. The direct result of lavage is a passive diuresis which lasts from thirty-six to forty-eight hours. Usually the patient feels appreciable improvement after the first treatment and it is to be noticed that a slow but steady decrease in the amount of albumin ensues, and also that casts become fewer. Upon discontinuance of lavage after about three months of its use the albumin continually lessens, and casts become harder to find, sometimes disappearing altogether. I have not had my patients under observation long enough to determine the absolute outcome, but in all probability advanced nephritis is never entirely cured. The most severe case I have so far treated has been reported in the *Medical News*. From a condition incapacitating him wholly for work and assuring death within three or four months at most, the man was restored to comfort and strength. In almost two years now, he has been absent from business a few days only when he was confined to the house by severe bronchitis. He says he feels perfectly well. While not cured, the improvement has been wonderful. I think we should be, if not satisfied, at least thankful to obtain results so generous.

A small sized calculus in the ureter may be facilitated in its passage to the bladder, as Kolisher demonstrated, by injecting sterilized petrolatum into the ureter above the stone.

Chronic urethritis has been the bane of many a man's existence. Tripperfaden may be eradicated and discharge checked while still the urine may refuse to become perfectly clear and sparkling. Numerous patients have been dismissed as cured only to reappear after a longer or shorter period with slight watery discharges. In a majority of these cases relapse was due to localized areas of inflammation along the urethra, or to prostatitis, but in some it was probably caused by an unrecognized catarrhal pyelitis.

One of my patients was dismissed three times and as often returned before I investigated the condition of his renal pelves. I found catarrhal pyelitis, after curing which I again gave him his congé. He came back in the course of three months with a new attack of specific urethritis, since the eradication of which he has not required treatment, though he has called several times in order to have his urine investigated. In over two years now he has been free of discharge, his urine showing no least indication of pelvic inflammation.

Another patient, a physician, had had urethritis for five years, during which period it had been impossible to rid him of discharge. He had been treated by massage of the prostate and vesicles, dilatation of the urethra, irrigations, and injectons. I found him to have catarrhal pyelonephritis, albumin, casts and epithelium from the uriniferous tubules being discovered in the urine. Shortly after the employment of lavage of the renal pelves his discharge ceased and in two months he was entirely cured.

One more case illustrates the importance of treat-

ment through the ureteral catheter from another standpoint. The patient had experienced severe pains in the loins for several years. At the menstrual period her pains were more pronounced and situated principally in the lower abdomen. Her urine was constantly cloudy, becoming at the time of menstruation muddy, and though internal urinary antiseptics cleared the urine somewhat, they did not relieve her pain. All symptoms disappeared after a few lavages of the renal pelves. In this subject the trouble resided in the urinary tract and not in the genital, in spite of the apparent testimony of symptoms.

IN CONCLUSION.

1. Accurate diagnosis of pathological conditions of the bladder can only be reached through employment of the cystoscope.
2. Treatment of the bladder through the cystoscope is decidedly limited.
3. Pathological conditions of the ureters, the renal pelves, and kidneys can only be thoroughly diagnosticated after catherism of the ureters.
4. Treatment through the ureteral catheter has a wide field, not yet sufficiently employed or fully developed, insomuch that an extraordinary amount of skill and experience are requisite in order to obtain satisfactory results.
5. An operation on the kidney performed in ignorance as to the working capacity of the other kidney is pure neglect on the part of the surgeon.
6. An investigation of the condition of the renal pelves should be made in all obstinate cases of urethritis.

616 MADISON AVENUE.

THE SUBSEQUENT HISTORY OF THIRTY-TWO CASES OF CHRONIC GASTRIC ULCER PREVIOUSLY REPORTED.*

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At a meeting of this association, held three years ago, it was my privilege to read a paper on The Treatment of Chronic Round Ulcer of the Stomach, based on thirty-two cases seen in private practice prior to December 31, 1902; and as a good deal has been written since that time regarding the incurability of chronic gastric ulcer by medical means, I thought it might be of some interest to you to know the subsequent history of these cases. Two of the patients referred to have since died; one from aneurysm of the aorta and one from hæmorrhage, the result of a recurrence of the ulcer. In February of this year I communicated directly with the survivors, either by personal interview, by letter, or through the family physician, and found that twenty were permanently cured, four greatly improved, three were not improved, and three could not be traced. All of the twenty patients who had been permanently cured were treated more than three years prior to February, 1906, and some of the worst cases four, five, six, and one seven years prior to that time. Of the four cases that were greatly improved, there had been, so far as I could ascertain, no return of the ulcer; but the patients did not consider themselves in good health. One of these patients, a year and a half after beginning to eat solid food, suffered from a mild degree of ischochymia, which was relieved by medical means. I saw her in February of this year, and she was able, at that time, to take three meals of solid food each day, and maintained her strength and weight.

The proportion of these cases would be as follows: 66.6 per cent. permanently cured, 13.4 per cent. greatly improved, ten per cent. not benefited, ten per cent. not heard from. Fatal hæmorrhage occurred in 3.1 per cent., and in 3.3 per cent. there was a mild degree of stenosis of the pyloris.

And just here I would like to refer to a misapprehension under which some American surgeons are laboring in respect to Leube's views regarding the proper time for surgical interference in chronic gastric ulcer. For example, one writer quotes him as follows: "Even Leube, the most optimistical of medical men, says that gastric ulcers which are not cured in four or five weeks by medical means will not be cured by a longer treatment" (1). And another remarks that "Leube says that from four to five weeks should cure gastric ulcers which can be cured medically" (2). Thinking that in some way these surgeons had misapprehended Leube's views on this subject, I wrote to him in February of this year, and he honored me by replying as follows: "There must be a misunderstanding in the quotations referred to. I enclose my last treatise on *Ulcer of the Stomach*, of 1897, in which you will find on page 6 (marked with pencil) my opinion of the curableness of ulcer of the stomach by the well known cataplasm diet cure in persistent cases." The paragraph referred to, translated by a competent authority, is as follows: "From my point of view and on the basis of the preceding statistics, I wish to emphasize that in by far the greatest majority, that is, in from seventy-five to ninety-six per cent. of the cases, surgical treatment is not even considered; in seventy-five per cent. of the cases surely not before a repetition of the treatment has proved the incurability of the ulcer by medical means. Usually those cases which have after the first treatment been only improved, or have even remained uncured, will completely heal up after a second or third application of the treatment. The principal thing for physician and patient is not to flag in patience and consistency. I have seen that such repetitions of the treatment, even in ulcers of ten years, and longer standing, worked at last a complete cure" (3)

Here then are Leube's views on this point at first hand, from which it appears that instead of recommending operation at the end of four or five weeks in case an ulcer of the stomach is not cured by medical means, he insists on a repetition of the same treatment, and shows that in from seventy-five to ninety-six per cent. of his cases this method of treatment results in a permanent cure.

References.

1. *Journal of the American Medical Association*, December 1, 1900, p. 1388.
2. *Medical News*, April 16, 1904, p. 724.
3. *Sonderabdruck aus dem Archiv für klinische Chirurgie*, lv, part 1.

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* Read at a meeting of the American Gastroenterological Association at Boston, June 4, 1906.

THE FUNCTIONS OF THE TESTICLES.

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It has been recognized from the earliest times that the testicles are connected with the normal development both mental and physical, and that their absence whether congenital, by operation, or by atrophy was followed by a definite perversion of development to the type known as feminism. They have been considered as the attribute and evidence of virility, and their absence a disgrace, in some cases debarring the unfortunate from religious rights. Their function was so evidently associated with reproduction that physiologists attributed the degenerative changes produced by their absence to the psychic effect of the loss of sexual power, and in a less degree of sexual desire. It was only in the latter part of the last century that any attention was given to their physiological function other than that of reproduction. Ambroise Paré and Gosselin, at an early date, recognized that the testicular secretion played an important part in development before puberty, but it was not until Brown Séquard in 1879 enunciated his theory that all glands with or without excretory ducts imparted to the blood substances which were necessary to perfect metabolism, that any serious attention was given to the subject. Brown Séquard stated that he obtained stimulative results by the exhibition of orchitic extracts from young animals, his claims were investigated by a committee of French physicians, whose verdict was not very definite, and the originator was the object of much ridicule. His high reputation as a scientist, however, prevented the subject from being forgotten, and stimulated others to experiment with the so called ductless glands, resulting in the discoveries of the therapeutical uses of the thyreoid and suprarenal glands. Loisel, de Regaud, and de Rabaud showed that the interstitial and also the cells discovered by Sertoli in 1872 produced a substance which was active in metabolism, and in 1904 Ancel and Bouin showed that the testicles possessed a glandular as well as a sexual function, confirming the results of Regaud and Loisel, and that this metabolic activity was not produced by the absorption of the sexual products, but by a separate secretion; therefore, insufficiency of the orchitic secretion was analogous to the failure of the thyreoid in myxœdema and the suprarenal in Addison's disease producing a distinct entity, feminism.

The effects of castration upon animals has been carefully studied, and produces in the male a tendency to feminism and the reverse in the female. When operated upon very young, before the animal has acquired its definite sex form, there is an arrest of development, the distinctive sex characteristics do not appear or only partially, the hips enlarge, the head lengthens and remains fine drawn, the limb bones lengthen, and there is a general softness of outline characteristic of the female sex. Poncet, of Lyons, and Brian and Dor have shown that there is a relation between the growth of the skeleton and testicular insufficiency. In all animals experimented upon, dogs, guinea pigs, and chickens, the skeleton increases in length (veterinarians say that this is not true for horses).

The changes produced by castration are confined principally to the genitalia and breasts, the bones, the skin and its appendages, the muscles, the glands, and internal organs, the larynx, the skull, the brain, and the mentality, differing according to the age at which the operation is performed and with the sex.

In the male young subject operated upon in childhood the prostate does not develop. Gruber describes the case of a twenty-five year old skopzen in whom the prostate was small, the vesicula prostatica rather large, the vesicula seminalis small and filled with mucoid substance, and the vasa differentia partially developed. Bilharz performed autopsies on four castrati, two full grown men and two boys. He found a hard lump in the symphysis through which passed a narrowed urethra, the prostate was of about the size of a child's, 1.6 cm., 2.2 cm., 0.5 cm. thick, the vesicula sminalis of the size of a ten year old boy's, 2 cm., 0.6 cm., the seminal ducts narrow with open ends, the bulboischiocavernosi and the corpora cavernosa were larger in the adults than in the boys, showing that they must have increased in size after the operation. The orifice of the urethra was only 2 mm., the prostate and seminal vesicles were of the size of a child's. According to Pelikan and Delbet, if the operation be performed before the twelfth year the external genitalia are very small and undeveloped, if after puberty the organs are larger but still smaller than normal, in kryptorchordia the organs are also usually very small. It has not been definitely settled as to whether the organs become smaller after castration of the adult, though there are several cases on record where this has occurred.

Concerning the atrophy of the prostate after castration much has been written. Delbet states that castration even at advanced age causes atrophy of the prostate, and that the removal of one testicle causes atrophy of the prostate on the same side; this may be due to disturbances of the circulation or nerve supply, but can hardly be attributed to the loss of a special secretion. One of the most remarkable changes produced by castration is the enlargement of the breasts which has been observed in several cases. At puberty, under normal conditions, there is some slight increase in the breasts in boys. Thomson describes the case of a forty year old soldier who was accidentally hurt in the back, and a few weeks later his breasts began to increase in size so that in ten weeks they were as large as an orange and painful, and at the same time the testicles atrophied. Lereboullet records the case of a well built, twenty-two year old man, who during an attack of mumps had double orchitis, while the parotid was still swollen the testicles began to atrophy, and in three weeks were no larger than beans, the breasts developed, and four months later the glands could be distinctly felt in the breasts, the nipples becoming erectile. Cloquet, Berther, Gaillet, and others have recorded similar cases, and Gubler a case in which there was secretion of colostrum. Le Dentu describes a case in which there was one sided development of the breast after loss of one testicle by accident. As a rule both the desire and the power of copulation are lost after the operation, and always when performed before puberty, but many of the

eunuchs in the harems of the East are capable of erection and coitus.

There are no records of post mortem examination of women operated upon before puberty. Dr. Roberts examined some girls about twenty-five years of age in Delhi, describing them as large and healthy with very slightly developed breasts and nipples, the pelvis very narrow with no fat deposit in the neighborhood of the genitalia, there was no menstruation, and no sexual desire. After ovariotomy of the adult menstruation ceases, the genital organs atrophy as in the aged, the external organs seldom change nor do the breasts, sexual desire as a rule is only partially impaired.

There is no record of changes in the external genitals of animals after castration; the prostate, seminal vesicles, etc., atrophy. The genitalia of female animals decrease in size, and they cease to come in heat, the animals laying on fat very rapidly after the operation.

Changes in the bones.—When the operation is performed early, the child grows at about the same rate as under normal conditions, but after puberty it commences to increase in height, very rapidly attaining a measure above the average of the general population. Launois states that this exaggerated growth is not due to the same cause as that observed after some infectious diseases, but to the prolongation of the bone forming period and the continuation of the cartilages of conjugation, especially in the long bones, although the whole osseous system is affected. Poncet, of Lyons, Brian, and Dor have shown that there is a relation between the growth of the skeleton and testicular insufficiency. In all animals experimented upon, dogs, guinea pigs, and chickens, the skeleton increased in length, and the unoperated control animals were smaller. The increase in size was principally due to the posterior bones, especially the tibia; in capons the increase was 0.8 cm. in the femur and 1.8 cm. in the tibia. The arrest of ossification of the cartilages of conjugation in castrated animals has long been known to veterinarians; in the bull complete ossification takes places at two years, in oxen at four years.

Every published account of eunuchs draws attention to the fact that their average height is above the normal of their race. Tournes describing the eunuchs of Cairo, says, "they are tall, thin, and lank, the arms and legs, especially the latter, being above the average in length, the hands are long, dry, and nervous, the fingers apelike in shape, the back bowed and the head carried on one side." Lortet described the skeleton of an Egyptian eunuch, of twenty-seven years of age, in which persistence of the conjugations of the head of the humerus of the radius, of the four metacarpal bones, the pelvis and of the lower limbs were found. If the increased height of the castrato be due to the retarded ossification of the cartilages of ossification, what is the nature of the chemical process in the testicular glands, which produces the condition? Ponset and Pirschet, Curabullo and Torcelli, and Chabbrie have found that the elimination of phosphates by the urine is much reduced after castration, and is increased by the injection of testicular extract. In osteomalacia removal of the ovaries arrests the disease, at least for some time, which shows that a relation exists between the testicular secretion and the osseous system.

The disposition of fat.—It is well known that eunuchs are often very fat, and that castrated animals fatten much more easily and more rapidly than the entire, but it is doubtful if the testicular secretion has anything to do with this condition. The eunuch of the harem leads a lazy, indolent life, without ambition, eating largely, and consequently becomes obese, while the Egyptian eunuch who works in the fields is usually thin, and the same causes operate to a certain extent upon animals, the nervous excitement produced by the rut being absent. Women after operation do not as a rule become obese, only gaining in flesh, as the result of the removal of diseased foci.

Changes in the skin and appendages.—The skin of the eunuch is usually pale and wrinkles at an early age. Tourne describing negro eunuchs says "their face is thin, dried up and elongated, the forehead narrow and retreating, the eyes glassy and expressionless, and often with deeply wrinkled foreheads and cheeks." In the white race the skin is pale with a yellowish tinge. The hair on the axillæ, breast, face, and pubes fails to grow absolutely or only very sparsely, at the same time being fine and soft; the head hair is usually normal, and it is very rare to see baldness in an eunuch. Cases are on record when the beard and body hair disappeared after castration in the adult, but this does not appear to be usual. In animals changes in the skin and hair have not been recorded, but capons when operated upon, develop but little comb or lappets, even less than the hens, the spurs are not affected, the sickle feathers of the tail are undeveloped, the whole appearance being decidedly more like a hen than a rooster.

Changes in the muscles, glands and internal organs.—It is generally accepted that the eunuch is muscularly weak, but this is probably due to the life they lead, the eunuch of the harem or the soprano of grand opera not taking the physical exercise necessary to develop the muscles, which are as a rule rounded and undeveloped, resembling those of a woman; on the contrary, the eunuchs who work in the fields are capable of the same amount of work as others. There are certain changes in the composition of the muscles; the flesh of most entire animals has a very strong pungent odor which is absent in the castrated. After the castration of adult animals the odor slowly disappears and the flesh becomes whiter, more tender, and better tasting. That there are changes in the development of certain muscles, the result of castration, there can be no doubt. Hoffman states that the neck muscles of the bull are about twice as strong and well developed as those of the ox. Möbius states that the heart of capons is about one tenth less in weight than in roosters of the same size. Further experiments and observations on the effect of testicular secretion upon the development of the heart, blood vessels, and other glands are much needed.

The thyreoid is usually small in eunuchs, and considering the close connection between the thyreoid and the sexual growth this is not to be wondered at.

Changes in the larynx.—Probably the best known effect of early castration is the arrest of the change of voice, which normally takes place at puberty,

castrated children retaining the child voice into adult life, a fact which has been utilized from very early times in order to obtain singers for the church choirs and stage. The depth of tone of the voice depends largely on the size of the larynx, and in castratos the growth is arrested by the operation. Dupuytren found in his two cases that the larynx was one third smaller compared with men of the same age and weight. Gruber describes the larynx of a sixty-five year old castrato, as "all the cartilages are still completely cartilaginous, nowhere is there a trace of ossification or calcification." Becker and Mojon have found the same conditions. Castration of the adult does not affect the voice. In animals there is a change in the voice, the difference between the bellow of the bull and low of the ox being very evident; capons as a rule crow but seldom, if at all, but having no sexual instinct they have no stimulus.

Changes in the skull and brain.—As ossification takes place later in the castrato than the entire, it would be reasonable to suppose that the skull of the former would be larger, but this is not found to be the case; the size of the head is greater in the male than in the female, and in castratos it is either normal or slightly smaller. Gall stated that castration effected the development of a certain portion of the skull, viz., the occipital portion, remembering that the neck muscles are less developed in the castrato than in the entire, measurements are not to be relied on. Gall, however, placed the position of that portion of the brain which controlled sexuality in the occiput, and showed by drawings of many skulls of men with and without sexual excitability and of castrated and entire animals that there was a decided difference; he argued that castration arrested the development of the cerebellum, and claimed that removal of one testicle arrested the development of the opposite half of the cerebellum.

Möbius describes the case of a young man of twenty-four years who had lost his left testicle by accident and whose right occipital arch was decidedly less developed than the left; he has collected several other cases from literature. That the shape and size of the skull is modified by castration there can be no doubt, as the difference between the bull and the ox, the stallion and the horse are very evident; the skulls of the operated animals are longer and wider, but not so deep as the entire. The horns of many animals do not develop at all, or are only rudimentary, after operation.

The effect upon the mental development.—History records the cases of many eunuchs who have been philosophers, artists, generals, and statesmen, but it is not always certain that this was their real condition. Popular opinion is that eunuchs and men without sexual appetite are below the normal mental standard, and that men of remarkable mental power and activity are often abnormally sexual. That the physical effect of absence of the power of reproduction, which is the direct or indirect stimulus to so many of our actions, should produce indifference, loss of ambition, and inertia is not to be wondered at. In animals the popularity of the operation is largely due to the increased docility of the castrated animal. Analysis of the mental capacity is impossible in animals and too inexact in man to be of much value. With the development of puberty great mental changes take place, the child mind giving place to that of the boy who gradually develops into the man; it has also been observed that the boy of precocious mental development is correspondingly advanced sexually, and that the boy whose genitalia at sixteen or seventeen years are still infantile is correspondingly backward in intellect. Much more observation and study of the feeble minded and backward boy must be made before any definite conclusions can be arrived at.

The effects of castration after puberty upon the mentality and morality of the patient are sometimes very marked, partly due to chagrin and disgust on being deprived of virility; at the same time the loss of the testicular secretion is no doubt an occasional factor in producing insanity, either delusional, melancholic, or maniacal; delusions of persecution are probably the most common, and it is well known that of all surgical operations ovariotomy is the cause of more insanity than any other. The sexual appetite may remain but without the power of satisfaction; in some cases eunuchs are capable of coitus, a circumstance well known in the Orient and in the days of Juvenal Roman ladies, fearing the complications of maternity, utilized eunuchs, *quod abortivo non opus est.* Richet, Mauri, and others have reported cases in which sexual desire and power of erection have been retained after operation. An explanation of these cases may be that the testicles furnish the essential elements of reproduction, but that the centres in the spinal cord are, to a certain extent, independent of them in producing the mechanical essentials, at the same time the testicular secretions act as a tonic upon the cord centres.

Ancel and Bouin, also Reinke and Regaud, have accorded an essential rôle to the substances absorbed into the blood stream from the testicles secreted by the interstitial cells, have named these cells the interstial gland of the testicle, and state that it is relatively independent of spermatogenesis, possessing an internal secretion which is of use to the organism. They established the independence of the two secretions by the following facts: By ontogenesis of the interstitial gland which is well developed and functionating when the seminal cuniculi are still embryonic. By the behavior of the glands in certain diseases, such as cancer, tuberculosis, malarial cachexia, which arrest spermatogenesis with atrophy, while the interstitial gland retains its integrity. By the persistency of its interstitial gland morphologically and functionally in cases of occlusion of the seminal excretory ducts. By the cases of cryptorchitic animals where the interstitial glands are normal, while the seminal glands are undeveloped. By the fact that cryptorchitic animals develop their male attributes, when in the large majority of cases the seminal gland is not developed. In man, Variot and Basancon have reported several cases of cryptorchitics possessing all the attributes of virility, but their semen contained no spermatozoa. Some cryptorchitics have the characteristics of castrati when young, so that it is necessary to admit of two classes; those who do not differ from the normal except in their inability to reproduce, and those who acquire the attributes of feminism.

The epithelium of the seminiferous tubules contains three varieties of cells from which arise the spermatozoa. Another group of cells lying outside the tubules in the intertubular spaces known as in-

terstitial cells resembling somewhat the cortical cells of the suprarenal body in that they contain yellowish granules; the stroma of the ovary contains similar cells. Shattock and Seligman suggested that these interstitial cells supplied an internal secretion; they showed that occlusion of the vasa deferentia in lambs and fowl does not inhibit the full acquisition of sexual characteristics. They removed portions of the testicle, dislocating the remainder from the proper anatomical site, severing their nervous connections, these remnants grew, had no external communicating channels, and were practically ductless glands. The birds thus operated upon developed complete male characteristics, showing that an internal secretion was elaborated, absorbed into the circulation, producing normal metabolic conditions.

There seems to be a relationship between the thyreoid, the petuitary body, and the testicles in their functions for the maintenance of the animal growth, and to preserve metabolic equilibrium. Castration arrests the development of the thyreoid, thyreoid insufficiency arrests the development of the testicle, a point to be remembered when treating infantilism and cretinism, orchitic extract added to the thyreoid often reinforcing the treatment remarkably. On the same grounds thyreoid in those cases of delayed puberty with abnormal length of bones materially assists in bringing on puberty. Apert reports cases in which thyreoid treatment greatly benefited certain cases of testicular atrophy. Upon the skeleton thyreoid insufficiency has the direct opposite effect to orchitic insufficiency. Acromegaly is always associated with atrophy of the testicles according to Freund, Vershoeten, Matignon, Brissaud, and Meige.

The causes of testicular insufficiency are usually congenital in anorchordia, cryptochordia, etc.; acquired insufficiency is due to traumatism, or orchitis produced by infection as in mumps, congenital syphilitics present a typical lesion, syphilitic carcocele. The therapeutical value of orchitic extracts is not great, the results obtained being probably due to the organic phosphorus and lecithin they contain and to the psychic effect upon the patients.

Burghart states that the use of certain testicular preparations in glycosuria may be followed by a reduction in the amount of sugar eliminated; it is also said to be of value in obesity.

Bouffe used orchitic extracts in eczema and psoriasis with good results. Friellander obtained favorable effects from testicular substance in prostatic hypertrophy; so does Lloyd Jones. Lingard has recently shown that subcutaneous injection of testicular extract into cattle induces a resistance to rinderpest, and that the serum of these animals injected into other animals made them immune.

Considering the agitation at present for compulsory emasculation of criminals, feeble minded, idiots, insane, epileptics, etc., it is as well to remember that serious constitutional effects follow castration of the young, and as, according to the last United States census, one in every three hundred and twenty of the population is either insane, criminal, or a pauper, the impractibility of the scheme is self evident. In any case resecting the vasa, leaving the testicles intact, is the maximum operation which should be permitted.

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819 PARK AVENUE.

Therapeutical Notes.

The Effects of Absinthe.—The *Société médicale des hôpitaux* of Paris, on motion of M. Jacquet, unanimously declared that absinthe is one of the gravest causes of national degeneration, and called upon the public authorities to forbid its manufacture and sale.—*Le Progrès médical*, June 16th.

Treatment of Purulent Rhinitis.—M. H. Roger (*Bulletin général de thérapeutique*, May 8, 1906) recommends irrigations of the nasal chambers with hydrogen dioxide solution, combined with an equal volume of solution of sodium bicarbonate (2 per cent.). After the douche, he makes a local application of petrolatum containing eight to ten per cent. of menthol.

Acute Dermatitis Due to Rhus Toxicodendron.—For the relief of rhus poisoning, J. V. Shoemaker advises prompt local treatment (*Medical Bulletin*, July, 1906). He has found the following very efficient in relieving suffering and removing the eruption:

℞ Sodii thiosulphatis.....3 drachms;
Aquæ, ...1 quart.
M. Sig.: Bathe the affected parts every half hour.

The fluid extract of grindelia, a teaspoonful in four ounces of water, is frequently employed and is a good lotion.

Fatal Effect of the Venom of a Toad on a Dog.—Bringard (*Archives médicales d'Angers, Bulletin général de thérapeutique*, May 8, 1906) tells of a hunter's dog that took a toad in its mouth. Although it rejected it immediately, there was an increased flow of saliva, the tongue, gums, and conjunctivæ became deeply congested, and shortly afterward the dog died of syncope with cardiac paralysis. Cadaveric rigidity set in very rapidly. This shows that children are exposed to danger when they play with these batrachians.

A Simple Test for Biliary Pigments in the Urine.—Krokiewicz states that the following test for bile pigments in the urine is the most sensitive, and that its application is not affected by other substances in the urine (*Bulletin général de thérapeutique*, May 23rd). It consists in having two aqueous solutions, one of sulphanilic acid (1 per cent.), and one of sodium nitrite (1 per cent.). In using the test, equal quantities of each solution (say, 0.5 c.c.) are placed in a test tube, to which an equivalent quantity (1 c.c.) of urine

is added. The test tube is shaken for ten or fifteen seconds. If the urine contain bile pigment the solution will become a ruby red, which becomes violet amethyst upon the addition of one or two drops of hydrochloric acid.

Immunization Against Tuberculosis Through the Digestive Tract.—Roux and Vallée, in a communication to the Académie des sciences (*Le Bulletin médical*, June 20th), report that experiments made by them, by feeding calves with small quantities of cultures of living tubercle bacilli, have shown that an immunity can be obtained in this way as proved by subsequent tuberculin test. These results accord with those of Calmette and Guérin, and demonstrate that it is possible to give to bovines immunity through the digestive tract.

The Dangers of Carbolic Acid.—In spite of the numerous warnings of the dangers of solutions of carbolic acid, this form of antiseptic dressing for wounds still claims new victims. Tillaux, Billroth, Poncet, Brun, and many other authorities, have reported cases of erythema and of gangrene, and even of general poisoning, caused in this way. It is especially as a popular wound dressing that carbolic acid has produced the greater number of accidents. Veyrassat and Rychner (*Revue médicale de la Suisse romande, La Tribune médicale*, May 22nd) report six cases in which such applications caused local gangrene, followed in some cases by cicatricial deformities, others requiring amputation. This subject was also recently discussed in the Société d'anatomie et de physiologie de Bordeaux (*Gazette hebdomadaire des sciences médicales de Bordeaux*, No. 17, 1906), and illustrations were given of the serious dangers of even weak solutions of phenol, when kept in contact with the skin.

Antidiphtheritic Serum in Postdiphtheritic Paralysis.—Before the Société de pédiatrie, M. Comby read a report of a case of a girl eight years of age who six weeks after an attack of unrecognized diphtheria, suffered with paralysis of the legs and arms, and which was extending to the respiratory muscles. By the injection of 70 to 80 c.c. of antitoxine in five days (20 c.c. for three days, then 10 c.c.), steady improvement was observed, with complete cure in one week. Comby said that this was not the first time that he had proved the efficiency of antidiphtheritic serum in the slowly developed or late diphtheritic paralysis. Notwithstanding the criticisms upon the treatment, he considered it a duty to use these injections in late diphtheritic palsies.—*La Clinique*, May 4.

Treatment of Melanotic Nævus.—Leredde and Martial, in a recent monograph (reviewed in *Le Progrès médical*, May 12th), call attention to the close relation existing between melanotic nævus and melanotic cancer. It takes the first rank among all growths for its facility to return after removal, and to increase in size from local irritation. There is great danger in these cases of melanotic infection of the lymph channels and even of the blood. On this account many authorities declare that a melanotic growth, no matter how small it may be, should not be interfered with. The authors of this monograph do not hold this view; on the contrary, they consider the ablation of melanotic growths as safe, on one condition, however, that is that the incisions shall be outside of the limits of the growth, both superficial and deep; and that there shall be no possible contact between the bistoury and the melanotic tissues. From the standpoint of daily practice they would consider it advisable to respect a simple melanotic spot, which shows no tendency to increase in size; but as soon as it commences to augment, it should be extirpated, but only in the manner indicated. If the operator is not prepared to do the operation in this thorough fashion, it is better to do nothing. All intervention otherwise is worse than useless. Radiotherapy presents a temporary appearance of amelioration, but seems to ultimately stimulate the growth into greater activity and to favor gland involvement.

Favorable Action of Arsenic in Diabetes Mellitus.—Verdalle (*Archives générales de médecine*, March, 1906), from a large number of observations, concludes that mineral waters containing arsenic with sodium chloride are of great benefit in diabetes. They are especially indicated in those cases in which arsenical medication has already been successfully employed, and are most serviceable in the hyperhepatic form of diabetes. (Characterized by increase of function of the liver, with glycosuria and increase of urinary nitrogen, etc.). The treatment with such arsenical waters acts both on the glycosuria, which it diminishes, and sometimes causes to disappear, and upon the azoturia, which it similarly reduces. The treatment tends to regulate the daily proportion of urea, and to bring it to the normal, reducing it when excessive and increasing it when it is below the average. It may be said, therefore, that this treatment regulates the nutrition. Accompanying the chemical changes, there is a marked improvement in the general health, which in some cases is astonishing. The formal indication for the use of arsenical waters is the state of excessive functional activity of the hepatic cells. On the other hand, the alkaline waters are indicated in functional hepatic insufficiency. In consequence, the arsenical waters succeed in many cases in which the alkaline waters are found to be ineffective or injurious. No bad results have been observed, however, from the arsenical waters when used judiciously. The author reports that while these waters are serviceable in all forms of diabetes, they are formally indicated in the hyperhepatic form. In addition, however, the reconstructive effect of the arsenic on the tissues is utilized in the course of treatment, as well as the effects of altitude of aeration and of hydrotherapy. All of these positively ameliorate the general state of nutrition of the patient, even where the chemical change, or results are not very marked. The best results are therefore obtained at the springs, but between the visits, the water may be used at home. Albuminuria, as a result of the diabetes and not due to a genuine nephritis, is no contraindication to the treatment. It generally passes away with the diabetes.

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MEDICAL SERVICE IN THE PHILADELPHIA SCHOOLS.

It is now nearly twenty years since the Philadelphia High School for Girls adopted the system of systematic medical service for its pupils, chiefly through the persistent and earnest efforts of the chairman of the committee in charge of the school, the late Dr. Thomas George Morton. Fortunately the board chose a very capable woman physician under whose faithful service the wisdom of the undertaking was at once abundantly demonstrated.

The system thus inaugurated and since maintained in Philadelphia has now been adopted in the higher institutions of learning all over the country. A few years ago Philadelphia extended the plan of systematic medical service to all the public schools by appointing a corps of visiting physicians who daily visit the schools to examine all cases of alleged illness and investigate suspected instances of contagious diseases, etc. This also has been justified by experience in the few years that it has been in operation. Recently it has been further suggested that one or two nurses should be officially attached to each school, in order to take charge of cases of accidental injury or of sudden illness. They could accompany sick children home, and incidentally see that they did not suffer from neglect. Among the ignorant and debased they not only protect the children, but also spread the knowledge of hygiene. Acting under the incentive of a committee composed of a few prominent neurologists, alienists, and sanitarians, among whom are such well known men as S. Weir Mitchell, A. C. Abbott, W. M. L. Coplin, Louis Starr, F. X. Dercum, Charles K. Mills, W. W. Hawke, and Alfred Gordon, the Pennsylvania Society for the Prevention of Cruelty to Children has decided to make an important sociological experiment. It had already been ascertained by the board of health, though a special medical commission, that fully fifty per cent. of the backward and truant children were suffering with defective eyesight. Children that were thought to be stupid are able to keep up with their classes when properly fitted with spectacles. Others have been found to be suffering with adenoid growths in the nasopharynx with beginning spinal curvature or with other conditions susceptible of easy correction. On the other hand, not a few have been found to be really feeble minded, if not imbeciles, and these have been sent to proper institutions.

In cooperation with the board of health, the board of education, and the court for juvenile delinquents, the Pennsylvania Society for the Prevention of Cruelty to Children has now taken charge of this great work, under the direction of the committee of physicians, and has accordingly appointed an hour for a daily clinical service at its office in Philadelphia. It is expected that the aggregate number of children to be studied and appropriately treated will not be less than ten thousand during the coming year. The statistics of this new charitable work will be eagerly studied by pædiatrists as well as by sanitarians. It is a philanthropic undertaking which is certainly full of promise for the defective and degenerate child.

The plan of the work is simple, but comprehensive. Blanks have been carefully prepared by the physicians above named, so as to elicit the desired data. Every child taken in charge of the society is obliged to have one of these papers filled out by the examining physician. The family history and questions of heredity are thoroughly investigated, as well as the child's own personal condition. The mental state is especially observed. Whenever an operation is necessary, the consent of the parents has to be obtained.

VENEREAL SUPERSTITIONS.

It is hard to kill the popular conception that disease is an entity that comes in through the window and by proper persuasion may be made to fly out again or may be got rid of by handing it to somebody else. Perhaps the thought of the latter possibility lies at the bottom of the devilish perversity with which consumptives occa-

sionally, though very rarely we believe, seek deliberately to infect others with their malady. Some curious aspects of the superstition as it is connected with venereal disease are set forth by Dr. Flora Pollack, of Baltimore, in an article entitled A Report of the Women's Venereal Department of the Johns Hopkins Hospital Dispensary, published in the August number of the *Maryland Medical Journal.*

Of 1,098 patients (473 white and 625 colored), 80 (27 white and 53 colored) were little girls under nine years of age and the majority of them between two and four years old. Dr. Pollack is convinced that all these children were the victims of "the superstition common among the laity, colored as well as white, that a person having any of the venereal diseases can, by transferring it to another, get rid of it himself." A refinement of the superstition is thus set forth: "The inoculation must preferably be on a virgin. If a virgin cannot be had, then any undiseased person will do." Dr. Pollack gives it as her conviction that this superstition is the reason why colored men commit rape on white women. Rape in itself is unspeakably horrible, but this added element of brutal criminality makes the occasional barbarities of vengeance seem tame. Plausible as Dr. Pollack's supposition appears, it would be well to take measures to ascertain the proportion of cases of rape in which disease is conveyed to the female.

The superstition crops out again in the implicit belief entertained by many women that if they give birth to a child, the child will take the disease and relieve them of it. The belief seems to be founded on the idea that in purity a baby is on a par with a virgin, and of course it is. The endeavor to get rid of venereal disease by transmitting it to a child may add to the number of illegitimate children, but, on the other hand, it may decrease the number of criminal abortions; possibly, then, some good comes from it, for a baby infected with venereal disease, even if it is a bastard into the bargain, is better than no baby at all.

Dr. Pollack points out clearly that efforts should be made to demolish these superstitions, for their results are lamentable almost beyond expression. It is not easy to see, however, what form those endeavors should take. Individuals so benighted as to entertain these beliefs are not likely to give them up because of arguments and assurances from the learned, and it is out of the question to delegate such missionary work to the prostitutes, who alone, as it seems to us, would be accepted as unimpeachable authorities.

TARDY ACCIDENTS FROM CHLOROFORM ANÆSTHESIA.

According to Tuffier, Mauté, and Auburtin (*Presse médicale*, May 16th), the tardy symptoms of chloroform poisoning are rarely manifested before the expiration of twenty-four hours. At this time the patient, without warning, passes suddenly into a grave state in which the nervous phenomena occupy an important place. At one time, they consist of a nearly continuous, quiet delirium; at other times, and more frequently, the delirium is active. Convulsions appear in the form of general trembling or of partial facial contractions, with grinding of the teeth. The arterial tension is low, as it was during the anæsthesia. The pulse is irregular, unequal, and frequent, in contrast with the temperature, which is only slightly elevated. The respiration is sighing, and finally becomes of the Cheyne-Stokes type. There are no symptoms indicating pulmonary lesion. Vomiting is an early symptom. It is at first bilious, presenting later a "coffee ground" appearance; it is violent and frequently repeated. In about half the cases jaundice has been observed. The urine is scanty and of a dark color, and contains a little albumin. The proportion of urea is diminished, notably toward the last. The urine contains bile pigments, urobilin, and acetone. Ultimately there is coma, which indeed in some cases may appear at the beginning. The fatal termination supervenes after a variable period of from three to seven days.

The pathology is very interesting. Tuffier, Mauté, and Auburtin have demonstrated in these cases lesions of the chief vital organs and notably of the liver, the kidneys, and the heart. The condition, in fact, is one of acute fatty degeneration of the liver, analogous to that occurring in phosphorus poisoning, except that the lesions in the liver differ slightly in their localization. In proportion to the intensity of the processes, the condition will vary from one of slight degree, which is principally vascular and is easily reparable, to one of necrobiosis by granular and fatty degeneration, which always follows a progressively fatal course. Icterus gravis is therefore one of the possible consequences. Indeed, this condition had already been shown to be among the toxic effects of this agent by Marfan.

Meillère directs the attention of surgeons to the great danger arising from supersaturation of the tissues with chloroform, which he suggests should be administered either intermittently or in a diluted state in some approved mixture. It should be remembered that certain subjects are

especially susceptible to the toxic effect of chloroform. This may be due to the imperfect action of certain organs which elaborate internal secretions or, on the other hand, to insufficiency of the emunctories. Especially to be noted among the conditions causing an idiosyncrasy with regard to chloroform is the persistence, in adults, of the thymus gland, as has been experimentally shown by Mme. Barbarossa (*Giornale internazionale delle scienze mediche*, 1906, No. 3).

THE SUPPOSED MICROORGANISM OF BERIBERI.

Dr. J. Tsuzuki, of the Japanese army, reports in the *Archiv für Schiffs- und Tropen-Hygiene* for July, that he has demonstrated the microorganism of beriberi. It is a diplococcus measuring from 0.4 to 0.5 by 0.7 to 0.8 of a micron, consisting usually of two small globules, which lie close to each other, but sometimes of an isolated corpuscle and again of a short chain of three or four bodies. It can be stained with all aniline dyes and by Gram's method. It does not possess the property of locomotion, but shows an active molecular motion, and it does not produce spores.

The author took as the basis of his experiments the theory that beriberi was an infection, and that its organism could be found in the urine of the patient, as in other infectious diseases, such as typhoid fever. After experimenting for many months he was able to demonstrate a specific diplococcus which always agglutinated with beriberi serum, but never with the serum of healthy persons. His diplococcus, injected into rabbits and guinea pigs, induced beriberi symptoms in these animals. He was able to observe the acute, or cardiac, form and the chronic, or paralytic, form of the disease, which correspond to the clinical picture in man. The post mortem examination of the animals showed lesions similar to those found in man in cases of beriberi. From these results the author was convinced that he had discovered the diplococcus of beriberi, and called it kakkecoccus (the Japanese word for beriberi is kakke), or beribericoccus. It was also possible to demonstrate the coccus in the fæces of beriberi sufferers, but the search for it in the blood was not successful.

Among the conclusions which the experimenter draws from his observation is one to the effect that the coccus is to be found in the intestinal tract, from whence it attacks with its specific poison the nerve cells and so produces the symptoms of the disease. Dr. Tsuzuki promises to give a further report of his experiments for producing immunization and an antitoxine.

THE REGISTRATION OF NURSES IN GREAT BRITAIN.

The question of the conditions under which professional nurses may, to the general welfare, be registered in the United Kingdom, and that of which authority should preside over the registration, seem to have given rise to a good deal of difference of opinion. Gathering our information from an editorial article printed in the *Lancet* for July 21st, we infer that some doubt is entertained as to the expediency of registration; indeed, our contemporary's article is headed Should Nurses be Registered?

Among the legitimate objects of a register of nurses, it seems to us, these two are prominent: That of assuring to properly educated nurses a class distinction to which they are fairly entitled, one that cannot fail to aid them powerfully in obtaining general recognition of their professional status and their consequent just claim to a comparatively high rate of remuneration for their services, and that of furnishing physicians and other persons with something approaching authoritative information concerning the qualifications of individual nurses.

As regards the first of these objects, there seems to be a feeling that, while it is conceded that duly trained nurses have the indisputable right to make the most of their special claims to rank and pay, a hardship would be imposed upon their humbler and perhaps altogether untrained sisters, who might be able to render valuable services at rates which would not burden the poor, by denying them the advantages of registration. There can be no doubt of the reality of the hardship mentioned, but we seriously question if its avoidance should be sought for by ignoring the superiority of the trained nurse's equipment for her work. Either we must concede the validity of this doubt or we must admit the injustice of debarring undereducated individuals from the privileges of registration as practitioners of medicine. What is sauce for the goose is sauce for the gander.

As concerns the second object, it is urged that graduation from a training school does not guarantee a nurse's character. That is quite true, but neither does graduation from a school of medicine serve as a warrant of the graduate's character. It is further pointed out that graduate nurses would be prone to throw up their profession in consequence of marriage and the resulting absorption in domestic duties after being registered, and then in many instances, by reason of widowhood or other adversity, seek years afterward to resume their former occupation and claim restoration to the register, having in the mean time neg-

lected to keep up with the march of progress and had plenty of time to forget what they once knew about nursing—so that the restoration would tend to give them a false status. All this is undeniable, but we think it would be practicable to indicate the break in the register, and surely such a register must not be expected to meet and smooth out all the troubles of one's life. The advantages of registration seem to us unquestionable and its disadvantages, real and fancied, largely avoidable. We do not see why a community should hesitate to resort to it.

EXTORTIONATE CHARGES.

Now and then it is intimated in the newspapers that medical men are prone to practise extortion upon the rich, and probably the majority of wealthy individuals are convinced that the intimation is true. The conviction is cherished resentfully. The matter was among the subjects touched upon by Dr. John L. Hildreth, of Cambridge, Mass., in an address delivered at the recent annual meeting of the Massachusetts Medical Society and published in the *Boston Medical and Surgical Journal* for July 26th. Dr. Hildreth is plainly of the opinion that extortionate fees are sometimes demanded, and we must say that we fear he is right. He cites instances, indeed, that it is difficult to interpret otherwise than as confirming his view.

"It is a serious misfortune," says Dr. Hildreth, "that such a profession as ours should ever become subject to the suspicion of commercialism. But, if it should yield to that influence, if it should be overwhelmed by it—that would be a calamity indeed." The calamity, then, has not yet arrived; in other words, medical men in general do not yield to cupidity. In that, too, we think Dr. Hildreth is right. Instances of extortion must be rare, or they would not occasion remark, and the most hopeful feature of the situation is the fact that deprecatory comment on such occurrences comes more freely from members of the profession than from others, though of course it is seldom expressed publicly and never noisily.

Moreover, it is not every case of what to the layman may appear extortion that really deserves that name. It sometimes happens that a man of great wealth, being stricken with disease in his own person or made unendurably anxious by sickness in his family, resolves that, cost what it may, he will have the services of a particular physician, even those services continued over a considerable period of time, notwithstanding the fact that the physician lives so far away that, to comply with the man's requirements, he must for the time being renounce all other practice. The public is too apt to forget that in such a case the physician's loss cannot be measured by the mere fees that might have been received by him had he remained at home. He is almost sure to have lost much more, to have lost patients, either permanently or for a long time, patients who would have remained with him, but who now, either resenting his absence or having given their allegiance to some other practitioner, are lost to him for good and all. Bearing these things in mind, one can rarely, we believe, accuse physicians of extortion.

AGAIN THE PHYSICIAN IN GENERAL LITERATURE.

We are glad to learn that Dr. G. Frank Lydston, of Chicago, already favorably known in light literature, has written a story which is announced to appear about the 1st of August. The name of the book is *Poker Jim, Gentleman*, and it is said to deal with the early days of the California mining camps; a theme fruitful in romance, humor, and pathos. We expect to find it a very interesting contribution.

TYPHUS FEVER IN PHILADELPHIA.

Apropos of the statement made in our last issue (on page 248) that the case in a Danish immigrant discovered on July 2nd was the first one in Philadelphia since 1888. Dr. L. Napoleon Boston informs us that the two cases were observed in the Philadelphia Hospital about eight years ago. Both patients, sailors, were transferred to the Municipal Hospital. One of them died, and a post mortem examination was made by Dr. David Riesman and Dr. Boston. Dr. Riesman's report of the case was published in the *Transactions of the Philadelphia Pathological Society.*

A NEW INDIAN JOURNAL.

We have received the first number of the *Calcutta Medical Journal*, dated July. It is the monthly journal of the Calcutta Medical Club, an octavo of thirty-two pages. We do not doubt that it will speedily be recognized as an important addition to our periodical literature.

THE UNAVAILING SHOWER.

Those who are well along in years think they remember that in their youth the summer thunder shower really did "clear the air," as it was expected to do. Nowadays it generally does nothing of the kind. Temporarily, indeed, it even adds to our distress. Torrents of rain blown in various directions compel us to close our windows, thereby almost stifling ourselves, and after all the pall of hot vapor hanging over us is not lifted.

News Items.

NEW YORK CITY AND STATE

Change of Address.—Dr. Edward Wadsworth Peterson, to 57 West Fifty-eighth Street.

Bequest to the Geneva, N. Y., City Hospital.—By the will of Theodore S. Hubbard the Geneva Hospital receives $500.

Charitable Bequests.—By the will of Amelia B. Lazarus the following bequests are made: To Mount Sinai Hospital, $5,000; the Montefiore Home, $10,000; the Montefiore Home for Chronic Invalids, $10,000; the Good Samaritan Dispensary, $5,000; and the Manhattan Eye and Ear Hospital, $10,000.

The Medical Society of the County of Albany held a special meeting on Monday, July 30th and adopted resolutions on the death of Dr. Harriet A. Woodward, the pioneer woman physician of Albany and the second that ever practised medicine there. In the resolutions were incorporated recognition of her faithful and conscientious work in attending to the duties of her profession. She had been a member of the society since 1876.

The Metropolitan Hospital and Dispensary.—Through the purchase of the adjoining building, No. 246 East Eighty-second Street, the board of trustees have been enabled to increase the hospital facilities from sixteen to thirty-four beds (including a babies' ward of ten beds). The present medical board consists of the following members: Visiting: Dr. F. H. Albee and Dr. E. W. Lee, in surgery; Dr. B. S. Talmey and Dr. J. A. Schmitt, in gynæcology; Dr. M. Jackson and Dr. O. P. Honegger, in internal medicine; Dr. H. B. Sheffield, in pædiatrics; Dr. M. Talmey and Dr. A. Schapringer, in eye, ear, nose, and throat. Adjunct visiting: Dr. G. A. Friedman, Dr. M. Cisin, Dr. R. Lewy, Dr. I. Grushlaw, Dr. J. E. Murphy, Dr. R. P. Muellenbach, Dr. M. Caspe, Dr. A. F. Dempewolff. House surgeon: Dr. J. Van W. Smith.

The Harvey Society Course of Lectures.—The second annual course of lectures given by the Harvey Society of New York, will be opened on October 20, 1906, by Professor A. E. Wright, of London. Ten lectures are to be given during the course, the lecturers and dates being as follows: October 20th, Professor A. E. Wright; November 3rd, Professor C. A. Herter; November 17th, Professor W. T. Porter; December 1st, Professor J. G. Adami; December 15th, Professor George Huntington; January 12, 1907, Professor F. G. Benedict; January 26, 1907, Professor E. B. Wilson; February 9, 1907, Professor S. J. Meltzer; February 23, 1907, Professor W. T. Councilman; March 9, 1907, Professor Friedrich Müller. The officers of the society for the coming year, are Graham Lusk, president; Simon Flexner, vice-president; F. S. Lee, treasurer; George B. Wallace, secretary; and C. A. Herter, S. J. Meltzer, and James Ewing, council.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending August 4, 1906:

	August 4.		July 28.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	133	17	98	10
Smallpox	..	..	..	..
Varicella	8	..	18	..
Measles	144	10	213	21
Scarlet fever	56	4	54	1
Whooping cough	57	12	43	16
Diphtheria	159	17	166	24
Tuberculosis pulmonalis	406	157	393	147
Cerebrospinal meningitis	12	12	12	12
Totals	977	223	997	231

A Proposed National Public Health Society.—It was announced on August 4th, by the Medical Society of the County of New York that a national society for the preservation of the public health is to be formed at a meeting to be held on November 15th in the Hudson Theatre for the purpose of fighting the quack doctors and adulterated food. The announcement says: Following up the recent exposures of the beef trust, the indiscriminate sale of alcohol and narcotics and dangerous poisons under the name of patent medicines, and the alarming conditions made known by the pure food bill, a great many philanthropists and religious associations have issued a call for a conference of public spirited men and women, to be held in New York city, November 15th, to discuss ways and means of organizing a society to obtain and disseminate accurate information concerning practices and conditions of every kind that are dangerous to the public health and morals, to prevent quackery, criminal practices in the healing art, adulteration of drugs, and the sale of narcotics and alcohol under the guise of proprietary remedies.

PHILADELPHIA AND THE MIDDLE STATES.

Personal.—Dr. W. W. Keen, of Philadelphia, was one of the two Americans upon whom were conferred honorary degrees by the University of Greifswald, Prussia, on the occasion of the celebration, on August 7th, of the 450th anniversary of the university.

Legion of Honor Cross for Dr. La Place.—The French government has decided to acknowledge the ability of Dr. Ernest La Place in the science of surgery by decorating him with the Cross of the Legion of Honor. Dr. La Place left for Paris recently.

Nurses in the Public Schools.—Dr. A. C. Abbott thinks it advisable to have trained nurses in the public schools, that minor conditions for which the children are often sent home, and even then do not receive the proper attention, may be satisfactorily treated at the school.

Relief for the Poor Insane.—In order to relieve the congested condition of the insane wards of the Philadelphia General Hospital, the Philadelphia museums will be utilized for quarters temporarily. There is great activity in the work for the erection of a new insane asylum.

Laboratories in Connection with the State Health Department.—The new laboratories of the State Department of Health will be opened in the laboratory building of the University of Pennsylvania and will be directly under the supervision of the Commissioner of Health, Dr. Samuel G. Dixon.

Large Bequest to the Philadelphia Presbyterian Hospital.—By the will of Charles Ferguson, this hospital will receive an annuity from the estate of the testator consisting of two thirds of the income of the said estate over and above $18,000. Upon the deaths of the heirs, who are the daughters, and of their children, the principal will be paid to the hospital. The New England Antivivisection Society receives the other third of the income and estate. The estate is valued at a million dollars.

The Pennsylvania State Board of Medical Examiners.—As a result of the recent examination conducted by the Pennsylvania State Board of Medical Examiners, 355 medical students will receive certificates admitting them to practice their profession in Pennsylvania. The board, which has spent the last week in Atlantic City, going over the examination papers, concluded its task on August 1st, and announced the successful candidates. Thirteen of the latter are women. For the examinations, which were conducted June 19 to 22, at Philadelphia, 414 students made application. Nine failed to qualify and one was expelled from the examination room for cheating. Fifty of the remaining candidates failed to pass. Twenty-five of the women applicants had failed to pass in previous examinations. Ten got through this year, and three of the successful ones passed their first attempt with honors.

Medical Missionary Work Among the Philadelphia School Children.—According to the Philadelphia *Ledger*, for August 3rd, a blow has been aimed at the very root of crime through the army of Philadelphia's afflicted children. Behind it is the weight of the many years' experiment and patient research of a coterie of criminological students and scientists who now have begun the practical test on a large scale of their plan of warfare against the causes of crime. In this the practical test of what has passed the stage of theory, 10,000 children will be used as subjects. The Society to Protect Children from Cruelty is the medium through which the test is being made. Alienists, physicians, eye and other specialists have been called into help. The plan is simple, in spite of its magnitude. Every child taken charge of by the Society to Protect Children from Cruelty is obliged to have filled out for him by his parents in consultation with the examining physician, a blank in which space is given for the identification and description of many ills. These blanks were prepared by a corps of physicians composed of Dr. S. Weir Mitchell, Dr. A. C. Abbott, Dr. W. M. L. Coplin, Dr. George W. Dougherty, Dr. W. W. Hawke, Dr. Louis Starr, Dr. Frederic Fraley, Dr. F. X. Dercum, Dr. Charles R. Mills, Dr. L. C. Wessells, Dr. A.

C. Butcher, and Dr. Alfred Gordon. The physical examination concerns questions of family history, physical measurements, expression of the eyes, memory, voice, speech, general appearance, and the history and condition of every part of the body. The mental diagnosis is made on the answers to questions of family and physical history, education, and hereditary ills. Whenever an operation is necessary the consent of parents has to be obtained. Sometimes the child can be treated at home. Frequently the tendency to evil in a youngster may be attributed to some minor affliction, such as weak eyes, say those who are interested in the experiment. Daily examinations are already being made at the offices of the society, 415 South Fifteenth Street.

The Health of Philadelphia.—During the week ending July 28th, the following cases of transmissible diseases were reported to the bureau of health:

	Cases.	Deaths.
Malarial fever	1	0
Typhoid fever	97	13
Scarlet fever	26	2
Chickenpox	5	0
Diphtheria	47	7
Cerebrospinal meningitis	1	0
Measles	20	4
Whooping cough	49	9
Tuberculosis of the lungs	129	56
Pneumonia	23	28
Puerperal fever	1	2
Tetanus	2	2
Mumps	4	0
Cancer	14	18

The following deaths were also reported from transmissible diseases: Erysipelas, 1; dysentery, 3; cholera morbus, 2; tuberculosis, other than tuberculosis of the lungs, 11; diarrhœa and enteritis, under two years of age, 110. The infant mortality amounted to 226; under one year of age, 189, and between one and two years of age, 37. The whole death list was 577, corresponding to an annual death rate of 19.62 in a thousand, in an estimated population of 1,469,126. There were 35 still births, 18 males and 17 females. No unusual meteorological phenomena were observed.

BOSTON AND NEW ENGLAND.

Bequest to the Massachusetts General Hospital.—The will of the late Mrs. Martin Brimmer bequeaths the sum of $20,000 to this hospital.

The State Sanatorium at Rutland, Mass.—As a result of the investigation of the Rutland sanatorium for consumptives, which occupied the executive council two weeks or more last spring, Governor Guild on August 1st accepted the resignation of Judge John C. Hammond of Northampton, chairman of the board of trustees, and appointed in his place Dr. J. F. A. Adams, of Pittsfield, an expert on tuberculosis.

The Mortality of Boston.—The number of deaths reported to the board of health for the week ending July 28th, was 211, as against 248 the corresponding week last year, showing a decrease of 37 deaths and making the death rate for the week 18.27. The number of cases and deaths from infectious diseases was as follows: Diphtheria, 30 cases, 2 deaths; scarlatina, 9 cases, 1 death; typhoid fever, 14 cases, 4 deaths; measles, 9 cases, no deaths; tuberculosis, 42 cases, 18 deaths; smallpox, 1 case, no deaths. The deaths from pneumonia were 11, whooping cough 3, heart disease 19, bronchitis none, marasmus 4. There were 14 deaths from violent causes. The number of children who died under one year of age was 67, under five years of age 80, persons over sixty years of age 38.

CHICAGO AND THE WEST

St. Luke's Hospital, Chicago, has acquired more frontage on Michigan Boulevard on which it will build an addition to the hospital to cost $500,000. It has just purchased the strip of land adjoining the present structure, with the residence at 1447 Michigan Boulevard, 25 x 161, for $40,500.

A Joint Summer Meeting of the physicians comprising the medical societies of the Aberdeen, Camp Release, and West Central, Minnesota, districts, was held at Ortonville, on July 30th. Dr. B. M. Randall, of Graceville, president of the West Central Society, presided. The programme was followed by a business meeting and an outing on Big Stone Lake. Over fifty members were in attendance.

The Northern Tri-State Medical Association.—At the annual meeting held at Put-in-Bay, Ohio, on July 31st and August 1st, the election of officers resulted as follows: President, Dr. Charles D. Aaron, of Detroit; vice-president, Dr. T. F. Wood, of Angola, Ind.; secretary, Dr. W. F. Shumaker, of Butler, Ind.; treasurer, Dr. J. A. Waltz, of Montpelier, Ohio. Dr. Wood and Dr. Shumaker were reelected respectively vice-president and secretary.

Surgical Sponge by the Yard.—A suit for damages to the amount of $40,000, has been started in the United States Circuit Court of Chicago, against a surgeon of that city, by an Ohio man who was operated on by the surgeon in 1904. The plaintiff's allegation is that in closing the operation wound in his abdomen the surgeon or his assistant left "three feet of sponge or gauze" in his abdomen. The plaintiff declares that he is entitled to the amount stated because of the further illness he suffered in consequence of the alleged "three feet of sponge."

Personal.—Dr. George M. Wells, formerly major and surgeon in the army, who was retired for physical disability some time ago, recently took the examination before the Indiana State Examining Board to show his qualifications to practise medicine in that State and passed with the highest honors near the head of a class of one hundred and eighty candidates. Doctor Wells made a general average in the examination, which is considered a most difficult one, of 94.25 per cent. He has been appointed associate professor of surgery at the Indiana State College of Physicians and Surgeons, in Indianapolis, Ind.

Statement of Mortality in Chicago for the Week Ending July 28, 1906, compared with the preceding week and with the corresponding week of 1905. Death rates computed on United States Census Bureau's midyear populations—2,049,185 for 1906, and 1,990,715 for 1905:

	July 28, 1906.	July 21, 1906.	July 29, 1905.
Total deaths, all causes	542	517	518
Annual death rate in 1,000	13.70	13.15	13.57
Sexes			
Males	319	291	302
Females	223	226	216
Ages—			
Under 1 year of age	146	148	140
Between 1 and 5 years of age	56	47	51
Between 5 and 20 years of age	54	39	40
Between 20 and 60 years of age	202	192	209
Over 60 years of age	84	91	78
Important causes of death—			
Apoplexy	10	5	11
Bright's disease	34	36	31
Bronchitis	3	8	8
Consumption	55	56	65
Cancer	20	23	22
Convulsions	9	6	8
Diphtheria	5	14	7
Heart diseases	39	33	48
Influenza	1	0	0
Intestinal diseases, acute	122	98	112
Measles	0	3	2
Nervous diseases	12	16	14
Pneumonia	37	31	25
Scarlet fever	11	11	2
Suicide	4	10	9
Sunstroke	3	1	2
Typhoid fever	4	4	5
Violence (other than suicide)	46	41	32
Whooping cough	3	5	12
All other causes	124	116	103

GENERAL.

The American Association of Obstetricians and Gynæcologists will hold its nineteenth annual meeting at Cincinnati, on Thursday, Friday, and Saturday, September 20, 21, and 22, 1906.

The Toronto Meeting of the British Medical Association.—At the meeting of this association, August 21st-25th, the address in medicine will be delivered by Sir James Barr; Sir Victor Horsley will deliver the address in surgery, and Dr. W. A. Griffith will deliver the address in obstetrics.

Examinations for Appointment of Assistant Surgeons in the Medical Corps of the Army.—The preliminary examinations of candidates for appointment to the Medical Corps of the Army as contract surgeons, with a view to their taking the course at the Army Medical School and a final examination for appointment as assistant surgeons in the army, were begun in various parts of the United States on July 31. Sixty-three candidates, says the *Army and Navy Journal*, have been approved by the War Department and appeared before the various examining boards. As a result of the first preliminary examination held in May seven approved candidates were obtained and it is hoped that an additional number will be obtained to make it reasonable to suppose that a sufficient number will take the course at the medical school and pass the final examination to fill the twenty-one vacancies now existing in the grade of assistant surgeon.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

July 16, 1906.

1. Gastromesenteric Ileus, By JOHN M. T. FINNEY.
2. Spontaneous Rupture of the Heart with Report of a Case, By W. H. PALMER.
3. Spontaneous Rupture of the Heart in a Case of Senile Dementia, By HARRY W. MILLER.
4. Medical Department of the Japanese Army (*Concluded*), By CHARLES LYNCH.

1. Gastromesenteric Ileus.—Finney reports a case of gastromesenteric ileus, with obstruction high up in the intestinal canal. He comes to the conclusion that acute dilatation of the stomach and gastromesenteric ileus cannot be differentiated clinically. Obstruction to the lumen of the duodenum by the root of the mesentery and the contained superior mesenteric vessels, has been demonstrated, and is probably of more frequent occurrence than has been supposed. Whether this is primary or secondary to the gastric dilatation, or whether this relationship is a constant one, has not been determined. The diagnosis would appear to be more easy than past failures seem to indicate. The use of the stomach tube and avoidance of dorsal decubitus offer better results probably than secondary operation, owing to the unsatisfactory conditions existing. With earlier diagnosis and the early institution of the measures just suggested, an improvement in the very high rate of mortality can be confidently expected.

2, 3. Rupture of the Heart.—Palmer describes a case of spontaneous rupture of the heart in a man, thirty-six years of age. He remarks that rupture into the pleural cavity rarely occurs and was in his patient probably determined by the obliteration of the pericardial cavity through the formation of adhesions. The patient was only thirty-six years old, and it is unusual for spontaneous rupture to occur in one of his years. The case presented the physical signs and symptoms of aortic aneurysm, and was accompanied by symptoms of pressure upon the left recurrent laryngeal nerve. The slight enlargement of the ascending portion of the aortic arch present could not have possibly caused this clinical picture. Lastly, the chronic arteritis was advanced in the coronary arteries while the systemic vessels were quite normal. Miller had a case of rupture of the heart in senile dementia; the patient being eighty-three years of age. The rupture was the result of myomalacia cordis, the accident being determined by mental and physical excitement. The infarction which had existed sufficiently long so as to show signs of repair resulting from a thrombus in the anterior coronary artery. The age of the patient, the condition of the arterial system, were favoring conditions almost invariably cited in cases of spontaneous heart rupture. The preexisting myocardial disease, anæmic necrosis, is regarded as a less frequent cause of heart rupture than other degenerative diseases of the myocardium.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

August 4, 1906.

1. The Scope and Aim of State Sanatoria for Tuberculosis, By VINCENT Y. BOWDITCH.
2. The Hospital Problem, By BAYARD HOLMES.
3. The Pathogenic Bacteria of the Conjunctiva, By EDWARD ADAMS SHUMWAY.
4. The Pathogenic Bacteria of the Eyeball, By JOHN E. WEEKS.
5. The Relation of Systemic Diseases to the Conditions of the Oral Cavity, By JAMES EDWARD POWER.
6. Surgical Treatment of Duodenal Ulcer, By WILLIAM D. HAGGARD.
7. The Hourglass Duodenum. A Plea for More Extended Use of Plastic Surgery to Preserve the Duodenal Route, By KENNETH A. J. MACKENZIE.
8. The Treatment of Bone Cavities. Report of a Case of Compound Comminuted Fracture of the Hip, Followed by Bony Union and a Movable Joint, By JAMES E. MOORE.
9. The Medical Treatment of Gallstone Disease, By REYNOLD WEBB WILCOX.
10. Chronic Nontuberculous Affections of the Lungs, By SHERMAN G. BONNEY.
11. Some Axioms Concerning Ocular Rotation, By G. C. SAVAGE.
12. The Transmission of Rocky Mountain Spotted Fever by the bite of the Woodtick (*Dermacentor occidentalis*), By H. T. RICKETTS.

3 and 4. The Pathogenic Bacteria of the Eye.—Shumway describes the method of conveyance of contagion to the conjunctiva: 1. Direct contact. 2. Dust infection—cholera, plague, typhoid organisms, influenza bacillus, and gonococcus; streptococci, pneumococci, and diphtheria bacilli; diplococcus intracellularis, staphylococcus pyogenes, tubercle bacillus; spore forming organism, such as anthrax and tetanus. 3. Droplet infection, this is a very important form, as in all forms of catarrhal conjunctivitis which are associated with well marked secretion, the organisms may be carried downward through the lachrymonasal duct into the nose and throat, and from there be expelled in the acts of talking, sneezing, and coughing. Pneumococcus rhinitis and bronchitis are often associated with pneumococcus conjunctivitis, and as the spread of pneumonia and influenza must be accounted for at times by the occurrence of drop infection, so the possibility of this drop infection in contagious diseases of the conjunctiva must always be thought of, particularly in schools. The spread by dust infection is of less importance, as the special bacteria of the eye are but slightly resistant to drying. The carrying of the secretion by flies must also be a factor of importance. The author then describes the most important bacteria found in the conjunctiva: The Koch-Weeks bacillus, the Morax-Axenfeld diplobacillus, pneumococcus, gonococcus, diphtheria bacillus, staphylococci, streptococci, bacterium coli communis, bacillus pyocyaneus, and the bacillus pneumoniæ. Weeks describes the microorganisms affecting the cornea: Bacterium coli communis, the bacilli of Koch-Weeks, Krüger, Klebs-Löffler, Petit, of leprosy, Morax-Axenfeld, perfringens, pyocyaneus, ulceris corneæ, tuberculosis, the gonococcus, pneumococcus, staphylococcus, streptococcus; then the fungi, penicillium glaucum, the aspergilli, such as fumigatus, flavesceus, glaucus, and nigricans, and the saccharomyces (the yeast plant). The resistance of the tissue is then described: The sclerotic possessing great resistance to the invasion by microorganisms; the infection of the globe may take place directly (traumatism), indirectly (metastasis), or by microorganisms; which are enumerated and described. The microorganisms of the iris, vitreous, lens, and retina are given, and finally the development in the nerve itself without known foci elsewhere. The author has purposely omitted syphilis.

5. The Relation of Systemic Diseases to the Conditions of the Oral Cavity.—Power states that the mouth is a favorable place of entry for bacilli, the antiseptic properties of the saliva are very slight. The reason that infection does not take place more frequently is that the mouth and its component parts have greater power of resistance than other portions of the body. Of the many specimens of bacteria found in the mouth, the most important are those of a pathogenic type, such as diphtheria, typhoid, cholera, septicæmia, and pneumonia. The author is of the opinion that the microorganisms entering by mouth are the principal cause in nearly every disease known to modern medicine, and he cites cases which support this statement.

6. The Surgical Treatment of Duodenal Ulcer.—Haggard, in speaking of the treatment for the duodenal ulcer, says that in the acute ulcer or erosion of young

anæmic females, manifested by slight bleeding usually, the well known dietetic treatment yields very satisfactory results. In the indurated or chronic ulcer which is prone to ulceration in middle life, and more frequently in men, medicinal treatment is very disappointing in the permanence of cure. It is to this class of persistent sufferers, where relapses have occurred, and the pain and discomfort interfere with the conduct of life that operation has been so brilliant. This is especially true in pyloric or duodenal obstruction, even though the ulcer is healed. But surgery should be kept strictly within the limits of a mechanical drainage; the indication is solely for better drainage of the stomach, and at a point where the food and acidity will not have to pass over and irritate the ulcer.

7. **The Hourglass Duodenum.**—MacKenzie gives five cases of hourglass duodenum, and comes to the conclusion that duodenal ulcers are marked by great chronicity, the result in deformities of the duodenum and stenosis after many years' duration of the ulcer. The most perfect results of operation are found in those cases in which the duodenal route has been preserved by duodenoplasty. Duodenal ulcers result sometimes in hourglass contraction of the duodenum and kindred deformities. Of operations the following are suggested: The operation proposed by Rodman, the plastic principles of Billroth, Wolfler, and Kocher; pyroplasty after Hernecke and von Mikulicz, and Finney; duodenoplasty; duodenoctomy; duodenoduodenostomy; pylorectomy, followed by duodenopylorectomy or duodenogastrostomy, and finally gastroenterostomy.

8. **The Treatment of Bone Cavities.**—Moore is of the opinion that our lack of success in the treatment of bone cavities is largely due to faulty technics. His experience leads him to believe that we will soon improve our methods. He describes his experience with Moorhof's bone wax, a material consisting of twenty parts of iodoform, forty parts of spermaceti, and forty parts of oil of sesame; for use it is heated to 50° C., when it can be poured into the cavity, where it immediately solidifies. It does not act as a foreign body, nor does it act as a culture medium. Its physical properties are such that it is gradually absorbed and replaced by granulations, and finally by new bone. Instead of this bone wax the author has during the two last years used the following combination: Spermaceti, 8 parts; olive oil, 2 parts; and iodine, 1 per cent. This mass is solid at the body temperature, melts at 108° F., and is antiseptic without irritating. Dr. Moore gives a description of the technics employed in the preparation of the cavity and the after treatment. The bloodless method is to be employed. The cavity must be thoroughly cleansed and washed with ninety-five per cent. carbolic acid, which is to be washed out with alcohol, and be thoroughly dried. When the wax is hardened the tissues are closed and a dry gauze dressing applied. If necessary, especially when soft parts come in contact with the wax, drainage is advisable.

9. **The Medical Treatment of Gallstone Disease.**—Wilcox remarks that gallstone disease is not purely a disease due to foreign body, but is primarily a hepatic disorder. The removal of the stones has but little to do with the cure of the patient, for when the stones have been removed by surgery the patient is but at the commencement of his treatment to remove the cause of the disease, which is entirely within the province of the physician. The congestions and inflammations in the domain of the portal system are the conditions which require treatment, and the infectious catarrhs of the bile ducts and gallbladder, and faulty bile formation in the liver are those that need correction, and these are purely medical problems. The Spa treatment is the one which appeals to many, but as good results can be obtained by diet, exercise, and cholagogues. The diet should be mixed, vegetable food produces a smaller amount of bile acids, saccharin, or fatty foods give rise to intestinal fermentation. The meals should be limited in amount, taken at frequent intervals with plenty of plain or feebly mineralized water before each repast; alcohol is prohibited. Salicylic acid is preferred as a cholagogue, while of the bile acid salts sodium glychocholate. The author also advises the use of phenolphthalein.

12. **The Transmission of Rocky Mountain Spotted Fever by the Bite of the Woodtick.**—Ricketts reports his experience with a woodtick on guinea pigs; the results bringing forward very forcibly the probable part which the tick may play in the infection of man. But he says we need more experiments before we come to a conclusion.

MEDICAL RECORD.

August 4, 1906.

1. Diagnostic Features of Surgical Diseases Attended with Acute Jaundice, By A. A. Berg.
2. The Therapeutical Action of Splenic Extract in Malarial Infections, By Charles Raymond Carpenter.
3. Tuberculin in the Treatment of Tuberculosis. With the Report of One Hundred and Sixty-seven Cases, By G. R. Pogue.
4. Pathology, Ætiology, and Treatment of Puerperal Eclampsia, with a Plea for the Kidneys, By John W. Winston.
5. The Galvanic and Other Treatment of the Prostate, By John V. Shoemaker.

1. **Diagnostic Features of Surgical Diseases Attended with Acute Jaundice.**—Berg remarks that the staining of the skin and mucous membranes with the coloring matter of the bile or its derivatives results either when the bile ducts are obstructed or when there is an excessive destruction of red blood cells in the liver. In the former instance the bile stagnates in the biliary capillaries of the liver, when it is reabsorbed into the blood, and so gives rise to obstructive jaundice, and in the latter case the liver elaborates the hæmoglobin that is set free by the excessive hæmolysis into bile pigments, which, being secreted into the biliary capillaries in greater amount than can be passed on by them into the larger bile ducts, is partly absorbed into the circulation, and thus occasions hæmohepatogenous jaundice. Simple as is this pathogenesis of icterus, so complex and varied are the diseases that provoke it. The more important surgical diseases of which one of the symptoms is an acute jaundice are: Liver abscesses; suppuration within the liver viscus as single tropical abscess, and the acute or multiple abscess. Enlargement of the liver. The enlarged liver, the distended, tender gallbladder, the thickened swollen ducts, and the infected dark viscid bile, together with acute onset of high fever, nausea, vomiting, pain in the epigastric and right hypochondriac regions, and jaundice, indicate an acute infectious cholangitis. Acute inflammations and distention of the gallbladder secondary to calculous disease is attended with jaundice when the distended enlarged viscus compresses the common bile duct, or when there is also present a complicating cholangitis. Syphiloma or gumma of the liver, when they break down, are sometimes attended with acutely developing jaundice. But probably the most frequent surgical causes are bacterial infections, and the administration of ether and chloroform.

2. **The Therapeutical Action of Splenic Extract in Malarial Infections.**—Carpenter says that since six years he has used splenic extract in typhoid fever with two results: The first of these is to prove that given internally in typhoid fever, while it seems to influence the temperature favorably, it more than offsets this by increasing the diarrhœa, and its final effect is therefore not favorable. This fact is the more notable when we take into consideration the other fact brought out by some of the cases cited, that the remedy fre-

quently controls diarrhœa from other causes. But its evident control over temperature led to its use in malarial infections, and, with the second of the two results already mentioned, the most surprising and complete success. In more than six years' continuous experience, and the treatment of hundreds of cases of malarial infections of all types, both simple and complicated by all sorts of conditions, not a single case has been met with in the author's practice which did not yield to this remedy. Quinine is an absolutely reliable remedy for malarial infections, and it has occupied a position in the history of medicine, the importance of which is perhaps not exceeded by any other single remedy in the pharmacopœia. But Carpenter affirms that the extract of the spleen is an equally reliable remedy in the treatment of malarial infections. And furthermore, that in all but excessive doses, it is devoid of all the unpleasant and injurious effects that have been attributed to quinine, whether rightly so or not.

3. **Tuberculin in the Treatment of Tuberculosis, with the Report of One Hundred and Sixty-seven Cases.**—Pogue gives his results which he had with small doses of Koch's tuberculin. They are: 1. An early diagnosis is the most important step to the successful treatment of tuberculosis. 2. Tuberculosis may be arrested by proper treatment, with a fair certainty of a permanent cure. 3. Tuberculin is a valuable adjuvant in the treatment of tuberculosis, as evidenced by the recovery of twenty-eight out of thirty cases that were treated with practically nothing but tuberculin, while they continued to follow their ordinary occupations during the treatment. 4. Cases of tuberculosis treated with the addition of tuberculin show a much less tendency to recur than similar cases treated without tuberculin. 5. Tuberculin in small doses (0.01 to 0.005) seems to have a more curative action than when given in large and increasing doses. 6. No ill effects follow the administration of small doses of tuberculin. 7. Purely incipient cases improve very rapidly under the use of small doses of tuberculin, both as to the arrest of the disease and the clearing up of the diseased area. 8. Tuberculin should never be given to a patient who has fever or who is suffering from mixed infection. 9. Third stage cases, especially advanced cases, receive little or no benefit from the use of tuberculin.

5. **The Galvanic and Other Treatment of the Prostate.**—Shoemaker states that he has used the galvanic current for several years in the treatment of prostatitis, together with constitutional means, such as laxative medicines, diluent drinks, buchu, belladonna, opium suppositories, and hot baths. But the galvanic current stands first in his estimation. The administration is of the simplest character. All that the patient has to do is to make sure that it is to the negative pole of his battery that he attaches the reophore belonging to the metallic bulb of the prostatic electrolyzer before inserting it in the rectum. Should he, through carelessness, attach the reophore of the positive pole to the bulb to be inserted in the rectum, he would, by the hardening of the prostate, receive an injurious instead of a beneficial effect from the flow of the electrical current. The prostatic electrolyzer, with a small wet battery, has given instantaneous and immense relief to many sufferers. The author emphasizes the wet battery; as the patient can keep his battery always at the same strength, and describes the pathology, diagnosis, and therapeutics of hypertrophy of the prostate, citing five cases as illustrations of his method of treatment.

BRITISH MEDICAL JOURNAL

July 21, 1906.

1. An Inquiry Into Some Points in Uterine and Ovarian Physiology and Pathology in Rabbits, By C. J. BOND.
2. On the Borderland of Epilepsy: Vertigo, By Sir W. R. GOWERS.
3. A Note on the Effect of Bodily Exertion on the Opsonic Index of Healthy Persons, By G. G. ELLETT.
4. Large Calculus of Ureter, Removed by Suprapubic Cystotomy, By R. PARKER.
5. Pulmonary Tuberculosis in Children, By J. E. SQUIRE
6. A Case of Actinomycosis of the Abdominal Wall Produced by an Infected Foreign Body Which Had Escaped from the Intestine, By A. CUFF.
7. The Value of Calcium Iodide in the Treatment of Ulcers, By G. A. STEPHENS.

1. **Menstruation and Pregnancy.**—Bond, as a result of his experiments on rabbits, has arrived at the following conclusions regarding menstruation and pregnancy: 1. The presence of functionally active ovarian tissue is necessary for the uterine function, or that portion of it which is concerned with the preparation by the endometrium of a suitable nidus for the imbedding of fertilized ova. 2. The presence of the uterine or endometrium tissue is not, on the other hand, necessary for the carrying on of ovarian function, either ovulation or the production of the internal secretion associated with œstrus. 3. One function of the endometrium in the anœstrous state is the secretion of a saline watery fluid of low specific gravity, containing a large amount of chloride of sodium in solution. 4. There is some antagonism between this endometric function or saline secretion and that portion of the internal secretion of the ovary which is specially concerned in producing proœstrous changes in the endometrium preparatory to the imbedding of fertilized ova. That portion of the internal secretion of the ova which is, in fact, associated with the growth of corpora lutea. The saline uterine secretion is associated with katabolic, the ovarian secretion with anabolic changes. 5. The mechanism by means of which the ovary obtains its stimulus from the stimulated endometrium consequent on the occurrence of pregnancy is a circulatory and not a nervous mechanism. In all probability some substance is manufactured by endometrium or trophoblast which reaches the ovary by way of the blood stream, and is also concerned with the increased activity of the mammary glands. 6. The bilateral ovaries may be regarded as one gland as far as the function of the endometrium is concerned. 7. The whole proœstrous process is of the nature of a preparation for the attachment of an embryo. 8. In addition to ovulation the mammalian ovary elaborates an internal secretion which at recurring periods is the cause of proœstrus and œstrus. 9. The corpora lutea form a ductless gland which is necessary for the nutrition of the trophoblast during the early stages of pregnancy and subsequently atrophiles. The established facts as regards the uterus are: (a) That the endometrium has a secretion peculiar to the anœstrous state; (b) that some substance is elaborated by the pregnant uterus which stimulates the growth of corpora lutea in transplanted ovaries.

5. **Tuberculosis in Children.**—Squire states that tuberculosis is the most common and most fatal disease in infancy and childhood. In infancy, whatever be the seat of primary infection, it tends to become quickly generalized; tuberculosis of the lung in infants is almost always associated with tuberculosis of other organs. Beginning with the first year of life, the bronchial lymph glands and lungs are most often affected. With the third year tuberculosis of bones, cervical glands, peritonæum, and intestines becomes more frequent. After the sixth or seventh year—second dentition—the pathological processes tend to resemble those of adults. Infection of the bronchial lymphatic glands is a usual halfway house between the passage of the tubercle bacilli through the mucous membrane of the respiratory passages and their invasion of the lung substance. The lung is infected be-

fore the bronchial glands more often than is usually supposed. Other points of entry of the bacilli are the tonsils, the adenoid tissue at the back of the nasopharynx, and the ear—especially when there is inflammation. Children are peculiarly susceptible to unhygienic conditions; the influence of overcrowding, dirt, neglect, and improper food, is very great. Pulmonary tuberculosis in children may be divided into the infantile and adult types. The former consists of a miliary tuberculosis of the lungs and pleura. Tuberculous bronchopneumonia is also common in infants. In the adult type tuberculosis takes a form in all respects similar to that in the adult. But the base of the lung is more often primarily attacked, and the signs are often first noted about the root of the lung in the mammary region—*i. e.*, the disease has spread from a caseating bronchial gland. Cough may be absent or slight. Children under seven years of age rarely expectorate. Hæmoptysis is uncommon in children, as is shortness of breath. The physical signs are often most indefinite and the diagnosis may be very difficult. The x rays may disclose some consolidation of the lung not made out on physical examination. The writer considers the use of tuberculin for diagnostic purposes risky, and has discontinued its use. The prognosis must always be guarded, yet there is good evidence that recovery from tuberculosis is not infrequent even in infancy. The younger the child the more grave is the outlook. As regards treatment the most important requirement is to put the child under proper hygienic conditions. Life in the open air, good and sufficient food, cleanliness, and a proper amount of rest and sleep, are the essentials. In all but acute cases children are better off for having lessons; they are much better not kept in bed unless the fever is high and the weakness extreme.

LANCET.

July 21, 1906.

1. Notification in Pulmonary Phthisis, By R. Sinclair.
2. On the X Ray Shadows of Cystic and Xanthic Oxide Calculi, By H. Morris.
3. Some Social Factors in the Causation of Infantile Mortality. By T. Divine.
4. The Influence of an Excessive Meat Diet on Growth and Nutrition, By D. C. Watson.
5. Outbreak of Pneumonia in a Reformatory School, By T. Oliver.
6. The Radical Cure of Femoral Hernia, By A. Baldwin.
7. Cessation of the Pulse During the Outset of Epileptic Fits, with Remarks on the Mechanism of Fits, By A. E. Russell.
8. Notes of Two Cases of Amputation of the Shoulder Girdle, By J. C. Renton.
9. The Operative Treatment of Laryngeal Papillomata in Children. By D. R. Paterson.
10. A Case of Congenital Abnormality of the Genitourinary Organs. By G. F. D. Smith and A. L. H. Smith.
11. Microscopical and Chemical Observations on a Case of Scleroma Neonatorum. By G. Carpenter and S. Neave.
12. A Case of Actinomycosis. Primary Abscess of the Left Lung Exhibiting Spontaneous Cure; Metastatic Manifestation in the Pelvis Declaring Itself After a Year's Latency, with Abscess Formation and Slow Spontaneous Cure, By E. Trevithick.

1. **Notification of Tuberculosis.**—Sinclair states that the whole case for notification of pulmonary tuberculosis lies in the preventive measures which ought to follow in its wake. The disciples of compulsory notification hold that compulsion and efficiency will surely go together. The disciples of voluntaryism on the other hand think it best to proceed cautiously, and they prefer to seek the cooperation of the patients and their friends in what will be a long drawn out business rather than to irritate them by coercive measures. They would give voluntary notification a fair chance and point out that it has worked well in several large English municipalities, and that it will give local authorities quite enough to do for the present. Sound measures to be advocated are (1) voluntary notification; (2) a central dispensary; and (3) provision for the isolation of advanced cases. The dispensary would be the centre from which patients could be guided as to their habits and mode of life, the depôt for the supply of medicines, sputum flasks, disinfectants, and Japanese napkins to the necessitous poor.

2. **Calculi and X Rays.**—Morris states that there seems to be a pretty general, though erroneous impression that cystin and xanthin calculi give no shadow by the Röntgen test and that the x rays are therefore no aid in diagnosis where a calculus of either of these substances is present in the urinary tract. Many cystin calculi contain phosphates of lime as well as traces of phosphates of magnesium and ammonium, and what is more to the point, sulphur is present in all of them to the extent of twenty-five per cent. The author has taken a number of radiographs of cystin and xanthin calculi, all of which gave very distinct shadows.

3. **Infantile Mortality.**—Divine states that the three principal factors in the causation of infantile mortality are: (1) The industrial employment of women. This conduces to the neglect of infants, as no woman can work hard and properly nourish her child. (2) Overcrowding only too frequently sums up the factors of poverty, intemperance, and crime. Moreover, it is in such overcrowded sections that the most dangerous occupations are carried on. 3. High birth rate. The higher the birth rate the higher the infantile mortality. The above factors are mutually related to the infantile mortality; where one factor is low another may be high, and according to the separate degree with which these operate so is the infantile mortality determined.

4. **Excessive Meat Diet.**—Watson has studied the effect of an excessive meat diet upon rats. His experiments prove that the use of such an excessive meat diet in rats is attended with the following results: (1) Growth is retarded; (2) sterility is induced if the diet is commenced in very early life; (3) the power of lactation is diminished; (4) a permanent weakening of the resisting power of the animals is induced by the use of an excessive meat diet in early life, the animals succumbing to disease at an unusually early age; and (5) there is a high death rate in the offspring of animals fed on an excessive meat diet. Clinical experience has led the author to think that there is also a close parallel in diseases of the human subject, and especially in that class of affections commonly included under the terms of gout and goutiness. Particular attention should be paid to the early dietetic history of patients as far as obtainable.

7. **Pulse in Epilepsy.**—Russell reports an interesting case of epilepsy occurring in a man, aged twenty-one years, in which during the onset of the spasm the pulse disappeared, remaining absent for three quarters of a minute. Sudden cerebral anæmia due to cardiac inhibition (or to cerebral vasomotor spasm) would account for most of the symptoms of an epileptic fit; the recovery from the fits may find adequate explanation in the vagus escape of the heart. Certain morbid changes have been described in the brains of epileptics, but it is possible that they may be secondary to the repeated attacks of transient cerebral anæmia which must follow cardiac arrest, and to the extreme congestion of the brain which the convulsive movements give rise to.

9. **Laryngeal Papillomata in Children.**—Paterson states that the constant recurrence of laryngeal papillomata in children, even after apparently complete removal, is a constant menace to the life of the child. Three methods of treatment are in vogue: Thyrotomy,

tracheotomy, and the endolaryngeal method, which last is to be preferred now that suitable instruments have been devised. These are a fish tail tube spatula, and a straight forceps. An electric head lamp should be used for illuminating purposes. Chloroform is the most suitable anæsthetic, and the patient should be kept fully under its influence. The tube spatula is introduced after brushing the pharynx with a cocaine solution; the forceps is introduced through the spatula and the paillomata grasped and removed. Hæmorrhage is never very prominent. When recurrence is soon and persistent a tracheotomy tube should be worn.

LYON MEDICAL

July 8, 1906.

Helminthological Notes. By Gabriel Roux.

Helminthological Notes.—Roux presents the results of a study of the intestinal parasites peculiar to apes. He speaks first of the frequency with which they are met with in those animals and of their general distribution, and then proceeds to the description of a species hitherto unrecognized, which he found in the macacus, and has named the *Tylenchus xylebori.*

July 15, 1906.

Two Cases of Hysterical Galeanthropy. By J. de Teyssier.

Two Cases of Hysterical Galeanthropy.—De Teyssier reports two cases of this nature. One was associated with aphonia, the other with aphasia, agraphia, and varices of certain veins in the neck.

LA PRESSE MEDICALE.

July 14, 1906.

1. Medical and Pathological Organization in Siam, By E. Jeanselme.
2. Removal of Foreign Bodies From the Bronchi with the Aid of Bronchoscopy, By Guisez.
3. Indican and Urinary Skatol, By G. Daremberg and Th. Perroy.

2. Removal of Foreign Bodies from the Bronchi with the Aid of Bronchoscopy.—Guisez reports a case in which a coin was made visible in the right bronchus by means of the bronchoscope, seized with forceps, and removed.

3. Indican and Urinary Skatol.—Daremberg and Perroy declare that certain changes in the kidney and liver are necessary, and sufficient to explain the presence in the urine of an excess of indican, or of red skatol.

July 18, 1906.

1. Motor Aphasia. Its Localization and Its Pathology, By J. Dejerrine.
2. The Bacteria of the Flesh of Fish, By R. Romme.

1. Motor Aphasia.—Dejerrine reviews the investigations which have been made on this subject, and considers that while it has not been demonstrated that the lesion in cortical motor aphasia is to be localized wholly in the posterior layer of the third frontal convolution, it is possible that such is the case, and that the lesions have always been found about this region.

SEMAINE MEDICALE.

July 18, 1906.

The Medical Service of the Japanese Army During the Russo-Japanese War of 1904-5, By Koike.

BERLINER KLINISCHE WOCHENSCHRIFT.

July 9, 1906.

1. The Signification of Jacksonian Epilepsy in Cerebral Localization, By K. Bonhäffer.
2. Röntgen Pictures After the Introduction of Oxygen Into the Knee Joint, By A. Hoffa.
3. The Behavior of the Autolytic Receptors of Organs, Particularly of the Tetanus Binding Substance of the Brain. By A. Wolff-Eisner and A. Rosenbaum.
4. Backward Current in the Œsophagus, an Explanation of the Coated Tongue, By L. Kast.
5. The Curability of Chronic Gastritis, By P. Rodari.
6. Modern Surgery of the Kidney. Diagnosis, and Results (*Continued*). By H. Kümmell.
7. Small Caliber Shot Wounds, By Kettner.

1. Signification of Jacksonian Epilepsy in Cerebral Localization.—Bonhäffer says that Jacksonian epilepsy is a frequent symptom of organic disease of the central convolutions, and also appears as a symptom of lesions at a distance from the motor cortex. It also occurs with no demonstrable anatomical foundation.

2. Roentgen Pictures After Introduction of Oxygen Into the Knee Joint.—Hoffa exhibits radiographs which show how clearly the picture of the knee joint may be brought out after oxygen has been introduced. The soft parts can then be differentiated on the plate, a differentiation which is otherwise impossible.

4. Explanation of Coated Tongue.—Kast claims that the movements of particles dissolved or suspended in the capillary fluid columns on the walls of the œsophagus downward or upward are determined by the rhythmic action of the chest in respiration, the pulsation of the heart and of the aorta, the movements of the diaphragm and of the body in general, and that a slow current rises along the walls of the œsophagus which may carry light bodies, such as lycopodium and other dissolved or suspended substances, and forms a direct connection between the contents of the stomach and the mouth. He believes that the coating of the tongue, in the absence of local disease of the mouth, or œsophagus, and of an unusual condition of the tongue, is due to an increased transportation of abnormal substances from the stomach to the mouth, and that this explains how the surface of the tongue may be said to mirror forth the condition of the interior of the stomach.

5. Chronic Gastritis.—Rodari does not consider chronic gastritis to be as common a disease as it is usually supposed to be. The diagnosis is usually based on the subjective symptoms, while an objective examination is apt to reveal a different condition. He says that chronic gastritis ordinarily occurs as an accompaniment of or sequela to other diseases of the stomach, such as ulcer, carcinoma, atony and ectasia, hyperacidity and hypersecretion, or as a consecutive stasis catarrh in diseases of the heart, lungs, or liver, or as a symptom of constitutional disease, such as diseases of the blood, inflammation of the kidney, tuberculosis, and carcinoma of other organs. The only rational or successful treatment is the combination of diet with medical treatment based on scientific pharmacological principles.

MUENCHENER MEDIZINISCHE WOCHENSCHRIFT.

July 10, 1906.

1. Experimental Researches Regarding Framboesia Tropica in Apes, By Neisser, Bärmann, and Halberstädter.
2. How May Bad Results be Avoided in Lumbar Anæsthesia? By Dönitz.
3. Three Hundred and Sixty Cases of Lumbar Anæsthesia with Stovaine-Adrenalin, By Deetz.
4. Operations Under Spinal Anæsthesia, By Becker.
5. A New Method of Staining Blood and Tissue with Eosin-Methyl Blue, By Assmann.
6. Technics of Agglutination. By Gähtgens.
7. The Activity of the Kidneys. By Magnus.
8. The Recognition of Mental Diseases, By Dreyfus.
9. The Origin and Prevention of Chronic Diphtheria, By Grünwald.
10. Eczema of the Lips, By Galewsky.
11. The Behavior of the Typhus Bacilli Demonstrable in the Blood of Patients With Typhus, in Opposition to the Bactericide Action of the Blood. By Conradi.
12. The Seventieth Birthday of J. Rosenthal, of Erlangen, By C. Rosenthal.

2. To Avoid Bad Results in Lumbar Anæsthesia.—Dönitz describes with great particularity the technics of the injection, and is inclined to ascribe the bad results obtained to faulty technics.

3. Lumbar Anæsthesia.—Deetz reports one hundred and twenty-six operations on the lower extremities, in-

cluding resections, amputations, exarticulations, necrotomies, osteotomies, fractures, lengthening and transplanting tendons, incisions of abscesses, and extirpation of tumors, two hundred and twenty-eight operations in the abdomen and pelvis, including appendectomies, cholecystotomies, gastroenterostomies, resection of and other operations on the intestines, extirpation of the uterus and of ovarian cysts, double pyosalpinx, hernia, and various other operations on the male and female genitourinary apparatus, and nine operations on the chest, eight resections of ribs, and one thoracoplasty, performed under spinal anæsthesia with stovaine and adrenalin. The ages of the patients varied from seven and a half to over seventy. A man, seventy-two years old, with acute peritonitis, died immediately after the injection. Another, operated on for tuberculous coxitis, died five weeks after the injection apparently of tuberculous meningitis, but no autopsy was allowed. Thirty-one vomited, or were nauseated during the operation. Several became pale and had weak pulses, but they quickly recovered. Fifty suffered from headache, eight very severely, lasting from three to five days. Paralysis of the abducens appeared in one patient thirteen days after the injection.

4. **Operations Under Spinal Anæsthesia.**—Becker gives the history of spinal anæsthesia, and reports one hundred and thirty-five operations performed under its influence in the abdomen, rectum, and lower extremities, with two deaths. The histories of these two cases are given in detail. He states that old and debilitated patients bear this form of anæsthesia better than general narcosis. A great advantage is that during an operation the consent of the patient can be obtained if more serious intervention than was expected is found to be necessary. General narcosis can also be induced without detriment. The technics is not simple, and the method has its limitations. The chief danger depends on the fact that there is no certain antidote to the action of the stovaine. Another disadvantage is the shock produced by a major operation performed on a patient while conscious.

ZENTRALBLATT FUER GYNAEKOLOGIE.

July 8, 1906.

1. Intrauterine Use of Bier's Hyperæmia, By F. Turan.
2. Vaginal Cæsarean Section in a Moribund Woman; Living Child, By Westphal.
3. Paragenital Injections of Spermatic Fluid of the Same Species, By W. Gessner.

1. **Intrauterine Use of Bier's Method.**—Turan concludes that Bier's hyperæmic method used in the uterus is painless, and safe if rigid asepsis is used. It diminishes the pain of dysmenorrhœa and of other disturbances arising from a chronically inflamed uterus. It has a tendency to heal erosions, and causes a decided diminution of the secretion, due to a chronic catarrh of the endometrium. It has, apparently, a deep action, and can be used on patients in the office or the clinic without disturbing their usual occupations.

2. **Vaginal Cæsarean Section in the Moribund.**—Westphal reports the case of a multipara who was dying of a severe eclampsia. A vaginal Cæsarean section was rapidly performed, a version done, and a living child secured. The entire delivery took three and a half minutes from the time of the first cervical incision. The mother died two and a half hours after the operation.

July 21, 1906.

1. Plastic Use of the Uterus in Cases of Defect of Sphincter Vesicæ. By M. Hofmeier.
2. Births After Vaginal Cæsarean Section and Vaginal Fixation of the Uterus, By Westphal.

1. **Uterus as Plastic Material.**—Hofmeier reports the case of a forty year old woman from whom a vesical calculus had been removed twenty years previously by a colpocystotomy. Several reparative operations had been undertaken to secure a healing of the vaginal wound, but these were only partially successful. Hofmeier made an incision into the anterior vaginal wall, drew the uterus forward, and sutured it below the bladder. The result has been perfect. He calls attention to the fact that if this operation is done on women who might bear children subsequently, a resection of the tubes should be simultaneously done.

2. **Vaginal Fixation and Cæsarean Section.**—Westphal has observed a number of births after the performance of these operations, and concludes that the scar left after a vaginal Cæsarean section, even if it does not heal primarily, does not necessarily become pathological. He regards the prognosis, therefore, after this operation as good as far as it affects future deliveries. The scar does not seem to be a cause of dystocia in later births. He holds the same views as to vaginal fixation of the uterus, noting only that well tried methods should be employed, and advocates, seemingly, vaginal shortening of the round ligaments and vesicouterine fixation.

ZENTRALBLATT FUER CHIRURGIE.

July 14, 1906.

1. The Treatment of Tuberculous Fistulæ by Bier's Hyperæmic Method, By K. Gaugele.

1. **Bier's Method in Tuberculous Fistulæ.**—Gaugele reports a case of tuberculous fistulæ of the left hip joint which was brought to a complete cure in the course of from three to four weeks by means of Bier's method of hyperæmia. Dense scars occupied the sites of the former diseased tracts.

GAZZETTA DEGLI OSPEDALI E DELLE CLINICHE.

July 8, 1906.

1. The Origin of the Opalescence in Chylous Effusions, By G. Ghedini.
2. Punctured Wound of the Cerebellum and the Medulla, By G. Cavazzani.
3. Treatment of the Perforating Ulcer of the Foot by Means of Traction on the Plantar Nerves, By Giulio Baroni.
4. A Case of Lipoma of the Tongue, By Cesare Provera.
5. Changes in the Kidneys as the Result of Injuries of the Spinal Cord. An Experimental Study, By Salvatore Diez.

1. **The Cause of Opalescence in Some Effusions.**—Ghedini studied the causes of milkiness and of opalescence in effusions in the pleura, etc. In the cases which he examined he found that the milkiness of the chylous exudate was due to the presence of leucocytes, of endothelia in a state of fatty degeneration, of cholesterin crystals, and of crystals of the fatty acids. When these were removed with the aid of sedimentation or with the centrifuge, the milky appearance of the exudate disappeared also. On the other hand, in all cases the opalescence remained. This opalescence is due to the pseudoglobins and the euglobins, which are associated with the lecithin. The opalescence was also partly due to free fat droplets which float in the liquid.

3. **Traction on the Plantar Nerves for Perforating Ulcer of the Foot.**—Baroni reports a case of perforating ulcer of the foot which was cured by the method of Chipault, namely, traction of the plantar nerve corresponding to the side where the ulcer is located. The present author thinks that this is the only rational treatment of this trophic ulcer, and that previous methods failed simply because they did not get at the cause of the trouble. The ulcer itself must, of course, be carefully curetted and freshened, and any pieces of necrotic material must be removed, so as to facilitate primary union. The operation of traction was performed in this case in the following manner: A curved incision was made, about seven cm. in length, from the internal border of the tendo Achillis to the extremity of the malleolus of the tibia. The neurovascular sheath was exposed, and the bifurcation of the tibial nerve was

reached. The external plantar nerve was then seized and was stretched with forceps.

RIFORMA MEDICA

July 14, 1906.

1. My New Method of Amputating the Breast, By IGINIO TANSINI.
2. The Action of the Soluble Products of the Blastomycetes in the Ætiology of Malignant Tumors. By FRANCESCO SANFELICE.
3. Experiments with Plastic Restoration of the Bladder, By LUIGI BALDASSARI.
4. Clinical Notes on the Intoxications. By FRANCESCO SARCINELLI.
5. The Action of Radium on the Electric Excitability of the Muscles, By G. MUGGIA and B. OHANNESSIAN.
6. Two Cases of Pott's Disease in Which Kernig's Sign Was Present, By CARLO PAGANI.

1. Method of Amputating Breast.—Tansini's new method aims at the most radical removal of the offending breast, followed by a plastic operation for the closure of the loss of substance thus effected. The first part of the operation consists of the removal of the breast without any dissection, the incision passing through skin and through the pectoralis major. The oval mass whose point is in the apex of the axilla is removed, and then a flap is cut posteriorly, including skin and a considerable portion of the latissimus dorsi on the same side as the cancer. This flap has a broad pedicle, is tongue shaped, and includes the region supplied with the circumflex artery. The nutrition of this flap is for this reason excellent. It is turned in such a manner as to place the portion of the latissimus dorsi where the pectoralis major had been removed. Thus the removed breast and its underlying muscle are filled in with the artificial flap. Excellent cosmetic and functional results are obtained with this method, as attested by several photographs accompanying the article.

6. Kernig's Sign in Pott's Disease.—Pagani reports two cases of Pott's disease in which he found Kernig's sign present, although this sign has been assumed to be characteristic of meningitis. Pagani reminds us that it has been seen in a variety of other affections besides meningitis, hæmatoma of the dura, gonorrhœal arthritic, fever, sciatica, etc. The first patient whose history he reports was a lad of fifteen with a well marked kyphosis and other signs of Pott's disease, for which he had been treated by Pagani for five years. During the development of a psoas abscess the boy began to show Kernig's sign. This phenomenon persisted for about a month and gradually disappeared as the abscess burrowed lower, until it was found missing when the abscess had reached Poupart's ligament, and had been evacuated surgically. In the second case the patient was a woman of forty-seven with an old dorsal Pott's disease. At the age of forty-six she complained of pains in her legs, and could not stand for any length of time. Kernig's sign was very marked, and was discovered accidentally. While the patient was sitting up in bed for the purpose of having her lungs examined she asked to put her feet down on the floor as she could not extend her lower limbs on the bed in a sitting position. The patient afterwards became hemiplegic, the tuberculous process in the lungs grew worse, and she died. At the autopsy no meningeal lesions were found, but the lesions of Pott's disease and of pulmonary tuberculosis were present.

ROUSSKY VRATCH.

June 10, 1906.

1. Hepatic Ophthalmia, By V. I. SPASSKY.
2. Respiratory and Pulsating Movements of the Tympanic Membrane, By M. TH. ZYTOVITCH.
3. On the Casuistics of Appendical Inflammation, By N. I. POKROVSKI.
4. A Case of Penetrating Wound of the Abdomen, with Prolapse of and Rupture of the Intestines. By S. KLIUTCHEFF.
5. The Functional Rest of the Lungs and the Coordination of Respiratory Movements in Pulmonary Tuberculosis (*Concluded*), By A. N. RUBEL.
6. A Case of Superior Tracheotomy with a Kitchen Knife, By V. TH. GORTALOFF.

1. Hepatic Ophthalmia.—Spassky defines hepatic ophthalmia as a peculiar disease of the eyes which occurs in affections of the liver accompanied by jaundice, as for example, cirrhosis, gallstones, catarrhal jaundice, etc. There may be impaired vision, impaired sensation of light, or of color, or narrowing of the visual field. Among the objective symptoms are noted, in addition to the jaundiced appearance of the conjunctivæ, xerosis, clouded optic disk and retinal image, and hæmorrhages into the retina. Pathologically, these changes are based upon an œdema of the region of optic entrance, together with inflammatory and degenerative changes in the chorioid and the retina. The peculiar feature of these cases is that the ocular symptoms disappear when the hepatic disorder is removed. Spassky adds the history of one case. The man was a tailor, aged forty-two, who complained of defective vision, particularly after sundown. He also complained of general debility and of a pain in the right hypochondrium. He gave a history of biliary colic in several attacks, accompanied sometimes with jaundice, with visual difficulty, coming on four months before. The liver extended four finger breadths below the line of the ribs, and was tender to the touch. The urine gave the typical findings of biliary constituents. The field of vision for green was markedly narrowed, while those for blue and for red were also diminished. The field for white, on the other hand, was almost normal. Perception of light was noted at thirty-three metres, and was the same for both eyes. The conjunctivæ were markedly yellow, and both eyes showed xerosis. The ophthalmoscope showed clouded discs in both eyes. The ocular phenomena diminished in severity as the patient improved, but they did not disappear entirely. Another attack of biliary colic, short in duration, came on, with a return of the ocular signs, which again subsided when the attack was over, as the result of appropriate diet and treatment. The name ophthalmia icterica is suggested by the author as more appropriate for these cases than ophthalmia hepatica.

2. Movements of the Drum Membrane.—Zytovitch examined one hundred and sixteen persons as to the movements of the tympanic membrane. Among these were persons with normal hearing, others with catarrh of the Eustachian tubes, with middle ear catarrh, and with secondary sclerosis. Each patient was tested as to the acuteness of his hearing, the ear drum was examined, and then the manometer was applied for the purpose of determining the movements of the membrane, rubber cement being painted around the opening until a hermetic closure war effected. The indicator of the manometer was a drop of colored ink, which was fixed against a scale of millimetres. The author found that the ratio of the outward to the inward movements of the drum were as three to one, a greater ratio than that found by Lucae (two to one). The drum moves with respiration in both inward and outward directions. The inward motion depends upon the difference in pressure in the rhinopharyngeal space and in the middle ear, and also upon the suction of the stream of air. The outward movement of the drum depends upon the compression of the Eustachian tube by the levator palati, and also on the forcing of air from the tube into the tympanic cavity. The respiratory movements of the ear drum amount to from 0.25 to 1 millimetre by the manometer described. The pulsating movements of the drum amount to 0.5 millimetre. An increased pulsation sometimes indicates a

hyperæmia of the drum. Immobility of the tympanic membrane can also be detected with this manometer. If the patient is politzerized and the entrance of air be made certain through the otoscope, there may be no motion whatever of the drop of fluid in the manometer when the latter is applied. This shows that the drum is immobile, as was found to be the case in fifteen patients with positive or probable sclerosis of the membrane. The author was convinced that the otoscope is useless in determining whether or not the membrane moves with politzerization. He prefers the use of the manometer as a routine method in the clinic, and for this purpose has constructed a manometer ear piece which is easily adjusted and which closes the external meatus hermetically. This ear piece bears a rubber cap which can be distended by moving a lever on the instrument, and thus the cap is made to fit closely into the external canal.

4. Enormous Penetrating Wound of Abdomen.—Kliutcheff's case is interesting because of the circumstances under which it was observed. The author is a country physician in charge of a Zemstvo (or district) hospital. A woman, seventy-five years old, was brought to him after a ten mile drive on a sleigh. She had been gored by a bull and had a wound on the lower part of the abdomen, extending from one anterior superior spine to the other, in the shape of the lower edge of an apron. The intestines were prolapsed through this wound and the woman was covered only with an ordinary peasant's fur coat. Operation was immediately resorted to, the intestines returned, and the wound closed with sutures, save at the place where the peritonæum had been entered, where a drain of iodoform gauze was left. Nine days after the operation the patient was so well that she got up from bed without permission, with the result that a second prolapse of the intestines resulted. This happened during the night, and the patient remained with the intestines jammed in the partly closed wound till morning. The loops of gut were found intensely hyperæmic, and in trying to reduce them a place which was weaker than others ruptured, allowing fæcal masses to escape. Physiological salt solution and iodine were used as before, and the rent was closed. The drain was allowed to remain and the patient made an excellent recovery.

THE ARCHIVES OF PHYSIOLOGICAL THERAPY.

July, 1906.

1. A Case of Leucoplakia Treated by Radium, By WOLFF FREUDENTHAL.
2. Dry Hot Air in the Management of Some Common Pathological Conditions (*Concluded*), By CLARENCE EDWARD SKINNER.
3. Temperature and Sunshine in Lakewood, New Jersey, 1900-1905, By WILLIAM GRAY SCHAUFFLER.

1. A Case of Leucoplakia Treated by Radium.—Freudenthal reports a case of a man, thirty-eight years of age, who had been accustomed to indulge moderately in alcohol and tobacco, but had given up both entirely, since coming under the author's care. He had sustained a fall upon his head when twenty years of age, for the sequelæ of which he had been treated. When Freudenthal first saw him he presented a diseased area spread all over the left cheek and the superior maxilla, extending in front almost to the middle line, with a great deal of ulceration, causing much pain. A piece removed from the ulceration proved to be nonmalignant. The patient received radium treatment, which together with the use of orthoform relieved him very much.

ARCHIVES OF PÆDIATRICS.

July, 1906.

1. The Tonsil as a Portal of Microbic and Toxic Invasion, By A. JACOBI.
2. A Study of the Stools of Breast Fed Infants, By C. G. KERLEY, H. N. MASON, and H. A. CRAIG.
3. The Variation in the Fat Percentage of Mother's Milk, By L. TAYLER-JONES.
4. The Value of Whey Proteids, By C. F. JUDSON.
5. The Relative Frequency of Heart Disease in Children, By G. W. NORRIS.
6. The Incidence of Disease in One Thousand Cases Among Children, By F. P. VAN WART and F. S. MEARA.
7. Chronic Lymphatic Leucæmia in a Child, By T. LE BOUTILLIER.
8. What Has Been Accomplished in Summer Diarrhœa, By W. L. HARRIS.
9. A Case of Generalized Subcutaneous Emphysema, the Result of Miliary Tuberculosis in a Syphilitic Child, By W. MACKENZIE.
10. Report of a Case of Recurrent Vomiting with Acetonuria, By A. W. MYERS.

2. A Study of the Stools of Breast Fed Infants in Relation to the Presence of Starch Enzyme.—Kerley, Mason, and Craig have been using cereal gruels in infant feeding many years, both as an adjunct to the milk diet and as a substitute for milk during sickness, especially summer diarrhœa. The statement that gruels are harmful or useless for the very young because indigestible was not sustained by the authors' experience, and led them to make the investigation which is here referred to. This consisted in a series of examinations of the stools of starch fed infants under one year of age, and also of those fed exclusively at the breast. Of sixty infants of the first class forty-one showed good ability to digest the starch (boiled barley flour), and nineteen an indifferent or poor ability. In the second class the stools of twenty-six infants were studied to determine whether starch enzymes were in the fæces. It was found that one grain of fæces from this source would convert one twentieth of a grain of starch into sugar. Fæcal bacteria and ptyalin of saliva being excluded it was thus proved that intestinal secretion and pancreatic juice were responsible for a very active diastasic ferment. The assertion that the diastase in these cases was furnished by the mother's milk was negatived by the fact that the fæces extract from meconium stools was as active before breast feeding as afterward.

3. Variations in Fat Percentage of Milk.—Tayler-Jones gives the following summary: 1. The importance of mother's milk cannot be overestimated. To change from this to artificial feeding is risking an infant's life. It also lessens the child's stamina for later years. Nothing is more important than a good start in life. 2. If there is trouble with a nursing infant the breast milk should be examined, unless a cause like tuberculosis is at once apparent. To pronounce a patient anæmic one must now estimate the hæmoglobin. The same care is necessary in determining the condition of the breast milk. 3. Fat is an important factor if only on account of its variability. 4. The importance of fats is more than ever realized, since their rôle in infantile atrophy has been recognized. 5. Fat usually increases from the beginning to the end of a feeding, there is no proof that the increase is arithmetical. If a baby needs more than the usual supply of fat it can be put to the breast after some of the milk has been drawn off. 6. A fat proportion within a few tenths per cent. of the average may be obtained by taking equal specimens from the beginning and end of the feeding and examining the mixture.

4. The Food Value of Whey Proteids.—Judson made a series of examinations which led to the conclusion that one per cent. was the average total nitrogen content of whey as ordinarily prepared. The food value of whey prepared in the ordinary manner is represented by a proteid content of 0.85 to 0.90 per cent., and consists of soluble whey casein and whey albumin. Lactalbumin represents more than half the porteid content of whey. The higher percentages of whey pro-

teid are obtained from skimmed milk. The kind of milk matters little, certified milk proving no better than that obtained from the small milk store. Solid rennin tablets containing one grain each were used for the preparation of each pint of milk.

8. **Summer Diarrhœa of Children.**—Harris observes that the term summer diarrhœa is quite generally used, but is a misnomer. This class of diseases is now regarded as of bacterial origin, and several investigators attribute them to the action of the bacillus of dysentery. If this were the sole cause we should expect good results from the use of a serum. The author believes there should be definite clinical classification of these diseases in order to obtain statistics of any value. Present methods of treatment of the severe cases is believed to be very ineffective. The only drug of the astringent type in general use which seems to be of much value is bismuth. The best substitute food now in general use is dextrinized gruel of rice, barley, or wheat. The best results in reducing infant mortality from summer diarrhœa have come through prophylactic measures. Breast feeding should be continued if possible, otherwise a food should be selected which can be digested and assimilated. If an infant does not gain in weight steadily the cause should be determined and remedied. When diarrhœa appears the milk diet should be abandoned, a purgative given, and barley or rice water used for food.

ANNALS OF SURGERY.

July, 1906.

1. Hypertrophic Stenosis of the Pylorus in Infants, By A. L. FISK.
2. Primary Sarcoma of the Omentum, By F. COBB.
3. The Surgical Aspects of Anuria, By C. G. CUMSTON.
4. Retroperitoneal Perirenal Lipomata, By E. REYNOLDS and K. G. WADSWORTH.
5. False Diverticula of the Vermiform Appendix, By M. G. SEELIG.
6. Clinical Experiences with Meckel's Diverticulum and Other Vestiges of the Ompalomesenteric Duct, By J. B. ROBERTS.
7. A Method of Anastomosis of the Vasa Deferentia, By G. F. LYDSTON.
8. Extraperitoneal Ligature of External Iliac Artery for Aneurysm, By J. A. NYDEGGER.
9. Wyeth's Method of Hæmosthasis in Amputation of the Hip and Shoulder, By T. H. HANCOCK.
10. Wrist Resection by the Lateral Incision, By S. L. MCCURDY.
11. The Use of a Steel Comb for Dissection in the Axilla, By H. A. KELLEY.
12. Postoperative Comfort, By W. G. LE BOUTILLIER.

1. **Pyloric Stenosis in Infants.**—Fisk notes that the first symptom is vomiting and usually comes in the second or third week. It is projectile, painful, without bile, and gradually increases in frequency of occurrence. Constipation alternates with diarrhœa. The stomach is usually dilated, and peristalsis may often be seen. The pylorus can usually be felt. The body weight decreases rapidly. Medical treatment is valueless. After two weeks of careful feeding, if there is no improvement, surgical measures should be adopted before there is too great debility. If the relative percentage for the several operations is to influence the choice of the operation to be performed, either gastroenterostomy, pyloroplasty, or divulsion might be selected. Gastroenterostomy, however, has been chosen by the greater number of those who have reported their operations. Either the anterior or the posterior operation may be performed, the parts being always joined by suturing.

4. **Retroperitoneal Perirenal Lipomata.**—Reynolds and Wadsworth describe at length the anatomy of this rare condition, and also an operation in which such a tumor was removed. The essential points seem to be that there is a fascia associated with the kidneys which divides into a retrorenal and a prerenal layer; that a compartment is thus formed within which the normal circumrenal fat may be developed into a tumor or lipoma; that is, an exaggerated hypertrophy of the normal condition. The anatomical conditions make the retrorenal fascia surgically unimportant, the prerenal fascia exceedingly important. In removing such a lipoma there is relative safety if it is removed from within the capsule; that is, within the prerenal layer of fascia. Such a tumor weighing nearly fifteen pounds was removed successfully by Dr. Reynolds.

5. **False Diverticula of the Vermiform Appendix.**—Seelig states that diverticula of the intestinal tract may be true or false, the latter occurring when the muscular coat is wholly or partly absent. Diverticula of the appendix are of the latter variety. A diagnosis of this condition prior to operation for appendicular disease has, thus far, not been possible. A diverticulum of this character takes the muscular coat. In its mucous membrane the lymphoid tissue is more sparse than normal, the crypts less numerous and more irregular, and the living epithelium cuboidal instead of cylindrical. Fifteen or twenty cases have been reported, and in most of them the diverticulum was at the mesenteric attachment of the organ. The causes for this condition are weakness in the wall of the appendix and pressure from within forcing the mucosa outward. Another important factor is inflammation, which weakens the appendical wall and determines the location of the diverticulum, the most probable site being where the inflammation was most intense. The diverticulum furnishes conditions which are most favorable for perforation, it is also a most favorable avenue for the passage of infection.

6. **Meckel's Diverticulum.**—Roberts calls attention to the surgical lesions which may result from congenital persistence of the omphalomesenteric duct which leads from the primitive intestine to the vitelline sac, and is usually obliterated in the second month of embryonic life. If it remains patulous it causes congenital intestinal fistula at the navel, like an unobliterated urachus. If the umbilical portion alone is unobliterated there will remain a pouch lined with mucous membrane inside the navel. If the intestinal end remains open it will give rise to a Meckel's diverticulum of the intestine. The two ends of the duct may be obliterated, the intervening portion remaining patulous and developing into a cyst, or there may be obliteration of the entire duct, a fibrous cord representing the omphalomesenteric vessels remaining. Many cases of strangulation of the bowel are due to vestiges of the omphalomesenteric duct resembling inflammatory bands. A diverticulum may be the seat of ulceration and perforation from pyogenic or typhoid infection. It may be the cause of intussusception, and may be the whole or a portion of the contents of a hernial sac.

7. **Vasa Deferentia Anastomosis.**—Lydston lays down the following indications for this operation: 1. Accidental severing of the duct from traumatism or during a surgical operation. 2. Resection of the vas for the relief of stricture or the removal of new growths. 3. Cases in which there has been resection for therapeutic purposes and a restoration of continuity is desired. The operation may be done for the following conditions: 1. Stricture. 2. Benign neoplasms. 3. Incipient prostatic enlargement. 4. Obdurate irritability of the vesical neck. 5. Intractable chronic prostatitis. 6. Intractable seminal vesiculitis. 7. Tumors of the testis in which the urinary tract must be protected from infection. 8. Suspected tuberculosis of the testis in which operation is declined. 9. Cases of true spermatorrhœa. 10. Cases of spermatophobia with actual psychopathy. 11. Rare cases of frequent and

intractable seminal emission of an involuntary nature. 12. Obstinate cases of prostatorrhœa. 13. Masturbatory insanity.

EDINBURGH MEDICAL JOURNAL.

July, 1906.

1. The Times of Harvey, By H. Croom.
2. On the Prognosis of Chronic Nephritis in the Lung, By W. C. Herringham.
3. Antisepsis and Asepsis in the Treatment of Enteric Fever, By C. B. Ker.
4. An Introductory Lecture Delivered at the Inauguration of the Chair of Clinical Therapeutics, Faculty of Medicine, Paris. By A. Robin.
5. The Treatment of Scoliosis by Dr. Klapp's System of Exercises, By C. Woodward.

1. The Times of Harvey.—Croom delivered a most interesting oration as the 124th Edinburgh Harverian Oration. He referred to the seventy-nine years of Harvey's life, from 1578 to 1657, as pregnant with great events, performed by some of the greatest men in the world's history. Harvey, uninfluenced by the spirit of adventure of his times, was a graduate of Cambridge and Padua, came to London about 1603, the time of accession of James I, and had much experience with the plague which prevailed from 1603 to 1607. He was made physician to St. Bartholomew's Hospital in 1609 and Lumleian lecturer on anatomy and surgery in 1615. In 1619 he propounded his great discovery. He was physician extraordinary to James I. When Charles I ascended the throne in 1625 the plague again became rife in London. He was made physician in ordinary to the king and was favored with his intimacy and friendship to the last. His book, in Latin, describing the motion of the heart and the circulation of the blood, was published in 1628. From 1630 to 1632 he traveled on the continent with the Duke of Lennox, and remarked the desolation of the country in connection with the Thirty Years' War. In 1633 he accompanied Charles to the coronation in Scotland, and while there he made a study of bird life, especially the gaunets concerning which he wrote a book. In 1633 he addressed the governors of St. Bartholomew's Hospital concerning the good of the poor in that hospital. In 1634 he was the means of acquitting four Lancashire women of witchcraft. In 1636 at Nuremberg he tried in vain to convince Hoffmann of the truth of his anatomical views. During the civil war he adhered faithfully to the king, and was with the princes Charles and James at battle of Edgehill. In 1646, after the surrender of the king at Oxford, he retired to London to live with his brothers. In 1651 he published his treatise on the development of the embryo chick. He died of gout in 1657.

2. On the Prognosis of Chronic Nephritis in the Young.—Herringham speaks of the alarm which is usually caused by this disease in young persons, for with them the convoluted tubes, glomeculi, and interstitial tissue are all affected. Dilute urine in these cases is glomecular urine; and this usually means rise of blood pressure and fibrosis of the kidney. Death in these cases may be from exhaustion with dropsy and convulsions, or there may be convulsions and no œdema. The kidneys in the one case are large and pale, in the other contracted and granular. Nephritis is a disease of temperate climates, especially of those in which the variations are sudden and great. A dry, sunny, and warm climate is most suitable for patients with this disease. Diet is of great importance. Meat is not believed by the author to be harmful, alcohol and condiments need not be forsworn altogether. Appetite is the chief thing to be encouraged, but it is always advisable that no more should be eaten than can be assimilated. As to the mode of life, one must not get fatigued, chilled, nor wet. Pleasures may be taken in moderation, and there should be abundance of fresh air and exercise.

3. Antisepsis and Asepsis in the Treatment of Enteric Fever.—Ker refers to the serum treatment of Chantemesse as lowering the death rate from this disease in Paris, but this serum is not yet available. Of other methods there is the expectant which supports strength and deals with dangerous symptoms as they arise. The antipyretic treatment by drugs is inadvisable as it retards elimination of toxines. Antipyresis by the cold bath is efficient, but as a method it is losing ground. Antisepsis and asepsis may be secured by drugs, by diet, and by the combination of aperient drugs and enemata. The author believes that betanaphthol is the best of the intestinal antiseptics. Hydronaphthol and benzonaphthol are also efficient. In general the author thinks the naphthols do no harm, they do not affect the duration of the fever, they diminish the offensiveness of the stools, and control meteorism, though less than sublimate and turpentine. They do not affect the ulcerative process. Thymol, calomel, carbolic acid, acetozone, and sodium sulphate have given less positive results. Calomel, castor oil, and abundance of water is advocated by some writers, and liquid diet by others. Large rectal enemata are also desirable.

Proceedings of Societies.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of February 28, 1906.

The President, Dr. Charles K. Mills, in the chair.

Chancre of the Lip.—Dr. Jay F. Schamberg showed a man with a chancre of the lip of unusual size. The case was of special interest because of the possibility of confounding the condition with epithelioma. The lesion was of four or five weeks' duration, and there was present a beginning roseola upon the trunk.

Tumor of the Uterus. Hysterectomy After Failure of Electricity.—Dr. George Erety Shoemaker showed specimens from nine cases illustrating various forms of uterine new growth. One was a multinodular fibromyoma that had caused distressing pressure in the upper part of the abdomen. The patient, aged forty-five, reported that she had received treatment for a year at the hands of a physician well known for his advocacy of the electrical treatment for all growths, and for his opposition to the use of the knife. She had discontinued treatment because the tumor continued to grow. She suffered severely from bladder disturbance, pain in the umbilical and inguinal regions, and distress from pressure in the epigastrium. Hysterectomy had been followed by recovery.

A soft fibromyoma weighing fourteen pounds had been successfully removed by hysterectomy from a woman, aged forty-two, who had never been pregnant. The history was remarkable for the recurrence of periods of enormous hæmorrhage, preceded by faintness and slight enlargement of the tumor. She lost from a pint to a quart of blood in one gush.

A patient, aged thirty-seven, had a very large, irregular, hard fibroma, intraligamentary on both sides, thoroughly distorting the uterus. The mass was removed by enucleation of one of the tumors, cutting the cervix across from left to right, and peeling out the remainder of the irregular growth. Death occurred in thirty hours, from exhaustion.

A fibroma of the uterus associated with epithelioma of the cervix had been taken from a patient, aged forty-four, who had had two children. The fibroma was seven inches in diameter, irregular in shape. Bleeding occurred nearly every day for a year. She had worn a

pessary, which, owing to the weight of the fibroma, reaching well above the umbilicus, must have decidedly irritated the epithelioma of the cervix. There was decided cancerous infiltration of the cellular tissue about the cervix. The fibroma did not appear to have been directly invaded, however. Hysterectomy through the abdomen and vagina, after cauterization, was followed by recovery.

A fibroid tumor weighing about five pounds had been removed for rapid increase in size during last three months. It had received electrical treatment for five years in other hands. Hysterectomy was followed by recovery.

A fibroma weighing about seven pounds had been removed for hæmorrhage from a woman, aged thirty-nine, who had been married thirteen years and was sterile. Recovery followed.

A uterus was shown containing a small adenocarcinoma of the endometrium near the fundus. Vaginal hysterectomy was followed by recovery.

A fibromyoma about eight inches in length, irregular, interligamentary, showing an area three inches in diameter in the upper portion, which was the seat of secondary round celled sarcoma. Hysterectomy was followed by recovery.

A specimen of fibromyoma of the uterus which had caused injurious pressure. Myomectomy was performed, the uterus and both ovaries being preserved. The appendix was removed at the same sitting. Recovery took place.

Specimens were exhibited of a large degenerating ovarian cyst, reaching to the ensiform cartilage, removed from a single woman, aged forty-five, in the late stages of the disease, with very formidable bowel attachments and inflammatory degeneration of the adherent intestine. Removal had been followed by recovery.

Another specimen was also shown of a multilocular ovarian cyst in a single woman, aged thirty. Removal resulted in recovery.

Extragenital and Urethral Chancre; Report of Five Cases, Including One with Multiple Lesions of the Breast.—Dr. FRANK CROZER KNOWLES read this paper. Two of the cases occurred in the cutaneous clinic of Dr. C. N. Davis, at the Pennsylvania Hospital; one in the genitourinary clinic of Dr. H. M. Christian, at the Philadelphia Polyclinic Hospital; one in the cutaneous clinic of Dr. M. B. Hartzell, at the University of Pennsylvania Hospital, and one in his own practice. In two of the cases the lesions were on the lower lip, both to the left of the median line, one as large as a dime and the other of the size of a quarter of a dollar. In one of the cases the lesion was on the posterior surface of the right index finger, at the base. In the fourth case the lesion was in the urethra, an inch and a half behind the meatus, on the roof of the canal. In the case showing the multiple extragenital lesions, two of the chancres were on the left breast, below the nipple, and the third lesion on the right breast in the same position. In all these cases the eruption was seen, and therefore the diagnosis was confirmed.

Dr. JAY F. SCHAMBERG remarked that extragenital chancre might occur in the practice of any physician, and that in the beginning and for a considerable time the diagnosis might be in doubt. He had seen several in the past year; in one case upon the chin. This was in the case of a girl working in a laundry in a disreputable neighborhood, who had been put to sorting the clothes. She had at the time an acne lesion upon the chin. From the history and the character of the girl he believed the lesion was innocently acquired.

Dr. H. M. CHRISTIAN spoke of the increased frequency of extragenital chancre and of the necessity of urging care upon syphilitic patients. He had seen more cases in the last six or eight years than in the preceding ten or twelve. He recalled one case brought about by the use of the barber's alum stick. He cited other cases and emphasized the importance of letting the prevalence of the disease be known and of warning the community of the various ways of its communicability.

Dr. A. E. ROUSEL spoke of the increase in frequency of extragenital chancre to-day over that of some years ago. He said it was well known that in the houses of ill fame the inmates to-day made use of certain procedures, which were comparatively unknown in this country ten or twelve years ago. This explained to his mind the increased frequency of chancres in the neighborhood of the lip. He felt that if it were proper to register cases of tuberculosis, there should be some power placed in the hands of physicians, so that when dealing with cases in the second stage of syphilis they should have authority to prevent the carrying on of the occupation of these particular unfortunates. He thought cases should be reported and laws enacted preventing the continuation of this sort of work. Reference was made to the teaching that extragenital chancre was apt to be followed by more severe syphilis than usual, and he inquired whether this was true in the experience of those present.

Dr. A. B. HIRSH spoke of the necessity of an educational campaign along the line of moral prophylaxis, and expressed the hope that the society might have a meeting of professional men and laymen upon this subject. Such work had been done in New York and in some of the smaller cities of the West. In Europe the subject was such a live one that there were organizations which influenced all the large cities.

Dr. SCHAMBERG stated that the board of managers had at present under advisement the holding of such a meeting as had been indicated by Dr. Hirsh.

Dr. KNOWLES said that many of the inhabitants of Russia had chancre of the tonsil, brought about by the manner of life of the lower classes. In many instances it was common in the household to have what was called a family spoon, and this was never washed.

A Modification of the Incision for Exposing the Mastoid Bone.—Dr. L. J. HAMMOND read this paper, accompanying it with diagrams. In the modification the incision was triangular instead of straight or slightly semicircular, beginning about half an inch back of the superior postauricular attachment, extending through all the tissues obliquely backward and downward along the hairy margin to a point just below the middle of the posterior border. From this point the incision was again carried through all the soft tissues forward and downward to the posterior border of the digastric fossa. By this incision, it was explained, all the postauricular vessels and nerves were avoided, except possibly some of the minute auricular branches of the occipital, and even they might be avoided if the lower incision of the triangle did not have to be extended too obliquely downward. Besides the avoidance of division of vessels and nerves, this incision furnished a roomy field for dealing directly with the bone, and it was usually possible to include within the single flap all the infected tissue over the mastoid. In addition, packing could be so placed within the bony cavity as to completely separate the flap from the outer incised margin until the perfect drainage had removed infection, when suturing could be employed or the parts left to heal by granulation. Drainage from the bony cavity would be perfect, as the lower incision of the triangle, extending from above downward, would insure drainage from the entire mastoid surface. The flap conformed very closely to the outline of the mastoid bone, and when it was considered safe to replace the flap immediately after the operation it would come directly in contact with the exenterated bone cavity and thus favor prompt dermatization.

Ocular Eczema in Children.—Dr. FREDERICK KRAUSS said that this disease was a distinct affection, mani-

festing itself as an acute or chronic catarrhal inflammatory disease of the skin of the eyelids or of the conjunctiva, and often of the cornea, characterized in the beginning by erythema, papules, vesicles, or pustules, or a combination of these, with a variable amount of infiltration and thickening. In an analysis of the records of a large number of patients presenting themselves consecutively at the eye clinic of St. Christopher's Hospital for Children, 831, or twenty-one per cent., had been found to suffer from some form of ocular eczema. They were most frequently attacked in the second year of life, from which the frequency gradually diminished up to the sixteenth year, which was the age of the oldest patient treated in the dispensary. The disease was found to be more prevalent during the months of May, June and April, in the order named. The staphylococcus was most frequently found present.

The symptoms were said to be those of eczema of the nares, ears, face, cheeks, eyelids, and canthi, with catarrhal conjunctivitis, phlyctænular conjunctivitis, and keratitis. Often eczema was found in other parts of the body.

The prognosis was good if the patient was carefully treated, but relapse was frequent. The treatment was very important and must be: (1) Hygienic and dietetic; (2) medicinal; (3) local. The hygienic included baths, outdoor life, cleanliness, etc. The dietetic comprised fresh foods, the most nourishing and *easily* digested, and abstinence from candies, cakes, sugars, fried foods, etc. The medicinal treatment called for tonics, such as ferrous iodide, hypophosphites, and syrup of hydriodic acid, also small doses of arsenic or calomel, as needed. The local treatment consisted in the use of an antiseptic wash, atropine, and dionine, with protection to the eye.

Dr. Wendell Reber believed that in the vast majority of cases nasal conditions were back of this disease. The prognosis, he agreed, was good if the cases were treated early; the average parent, however, failed to give it the proper attention. Like trachoma, it was a filth disease.

Dr. Schamberg had seen many cases of eczema of the face associated with inflammatory ocular infections, and in the greater number of cases he believed the skin trouble was secondary to the ocular condition.

Dr. Charles Lester Leonard believed that the ætiology of some of the skin infections was becoming better known, on account of their reaction to treatment, which was purely local. In the treatment of these conditions with the x ray he had found healing without reference to the general condition of the patient.

Meeting of March 14, 1906.

The President, Dr. Charles K. Mills, in the chair.

Alcoholic Multiple Neuritis.—Dr. Charles W. Burr presented this paper, referring to the occasional association of disease of the spinal cord with neuritis, and pointing out the symptoms distinguishing the two. He divided alcoholic multiple neuritis into the chronic and acute types. Chronic neuritis was said to be common in middle aged drunkards and sometimes showed itself only by muscular pain. In other cases there was more or less paralysis, especially of the anterior tibial muscles. The knee jerks were always absent. Occasionally there was pseudoataxia; never trophic joint changes. Reference was made to the occasional difficulty of distinguishing this condition from locomotor ataxia. He reported ten cases of acute alcoholic multiple neuritis, in several of which the causative factors were syphilis, childbirth, and lead. In one case an intercurrent pneumonia had caused recrudescence of the pain and palsy. In speaking of the mental state in acute multiple neuritis, he said that as early as 1791 Lettsom had accurately described the condition now usually called Korsakoff's psychosis. In almost every acute case there was some mental disturbance. Sometimes there was only emotionalism, or a marked hysterical state. In others there was the well known syndrome of loss of memory, the relating of things that never happened, and the lack of appreciation of one's whereabouts.

The Treatment of Arthritis Deformans with the Roentgen Rays; a Preliminary Report.—Dr. J. M. Anders, Dr. Judson Daland, and Dr. George E. Pfahler presented this report, based upon the treatment of two cases of fairly well advanced arthritis deformans. The cases had been carefully studied clinically and radiographically. Distinct and positive changes were noted in the joints. In each case, at first, only part of the involved joint was treated with the rays. The other joints were kept for comparison, and in other respects were subjected to the same treatment, but did not improve. The authors advised massage and passive motion, in conjunction with the exposure to the rays, believing that the rays increased the metabolism of the joints, and they advised massage to assist in the absorption of the exudate. The pain, rigidity, and swelling of the joints disappeared, and the radiograph showed a positive improvement in the joint structures.

Dr. Judson Daland spoke of the ability of the patient to walk about in a short period of time without artificial support and of the great relief of pain. He regarded the report as peculiarly instructive, because it showed the possibility afforded by the x rays of studying the pathology of the living joint. He thought the method promised a better classification of chronic joint affections, which had hitherto been classed under the head of rheumatism.

The Tuberculides, with a Report of Cases Illustrating the Papulonecrotic Variety.—Dr. M. B. Hartzell, in this paper, stated that recent advances in the knowledge of tuberculous affections of the skin had brought about an abandonment of some of the old and meaningless names for new ones more in accord with modern ideas of the ætiology and pathology of this group of diseases. In 1896 Darier had proposed the name tuberculide for a series of dermatoses associated with tuberculosis, and later Hallopeau had proposed to call all tuberculous affections of the skin by this name, dividing them into two groups, bacillary tuberculides, and toxituberculides.

The affection to which Darier first applied the term tuberculide was now known by the name of papulonecrotic tuberculide, and was characterized by an eruption of livid nodules situated upon the ears, backs of the hands, elbows, knees, and feet. These nodules underwent central necrosis, leaving pitlike scars resembling those of smallpox. The cases reported illustrated some of the clinical varieties of this form of cutaneous tuberculosis.

Erysipelas Treated with Peroxide of Hydrogen.—Dr. Warren C. Goodwin, in reporting this case, said that he had used the regular preparation and made but a single application. It was done very thoroughly, knife and scissors being used to open every bleb, and every focus of infection was swabbed. The cure was complete. In general practice it was recommended to keep the part wet with peroxide until the inflammation subsided.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Meeting of May 14, 1906.

The President, Dr. T. E. Satterthwaite, in the Chair.

Rabies and Its Ætiology.—Dr. Ira Van Giesen read this paper. He spoke first of the results achieved by Jenner and Pasteur, without any reference to bacteriological data. He though that at the present time bac-

teriology was rather overdone, and expressed his belief that during the next four or five years there would be a decided reaction in this regard. Taking up the subject of rabies, he said that one reason which made it very difficult to investigate was that there was no other disease which had any close relation to it. There was some ground for the hypothesis that rabies might originate *de novo* in certain animals, such as the skunk, and he believed it was possible that some of the other infectious diseases might also develop in subjects not previously exposed to the risk of contagion. He then described a new, rapid, and certain procedure for the detection and study of the Negri bodies in rabies, stating that it was particularly valuable in making the diagnosis of street rabies in dogs, as the whole process could be carried out in a few minutes. This method consisted of two steps: First, the preparation of a smear from the gray matter of the central nervous system, and, second, the application of a new staining solution. The important part of the method, he said, was the smear technique, which was valuable also for the normal and pathological histology of the nervous system in general. If smears were made by the ordinary mode of preparing blood smears, they were of little or no value. If, however, a portion of the gray matter, say of the size of a bird shot, was placed on one end of the slide, covered with a cover glass, and gently squeezed out, and the cover glass then shifted across the slide, very admirable preparations of the neurone bodies, with their dendritic and axonal prolongations, might be secured. In looking for the Negri bodies, which were absolutely diagnostic of rabies, these squeeze smears, enabling the examiner to avoid the time and trouble required for preparing sections, might be fixed, while moist, for a few seconds in methyl alcohol, or might be dried in the air. The smears were then stained and held over a flame until the staining solution steamed, and finally rinsed and dried in the air. The stain used was prepared as follows: Add to 10 c.c. of distilled water two drops of a saturated alcoholic solution of rosaniline violet and two drops of a saturated aqueous solution of methylene blue diluted one half with water. When this was used the Negri bodies took on a distinctive deep crimson color, while their chromatin particles became blue. Having shown the structure and characteristic appearance of these bodies by means of colored drawings, Dr. Van Giesen said that, while the bodies were certainly diagnostic of rabies, it was very doubtful whether they were the causative agent of the disease. He mentioned some objections to their being regarded as protozoa, and then referred to a series of experiments made by him, in conjunction with Dr. Poor, to determine the significance of the Negri bodies. These experiments consisted in subjecting portions of the nervous system of rabid animals to various chemical agents, with a view to destroying either the bodies or the rabietic virus, and confirming the result by animal inoculation.

A Study of Seventy Cases of Brain Tumor.—Dr. ARTHUR C. BRUSH read this paper. He said it was only by collecting the facts furnished by a large number of cases of brain tumor that a substantial basis could be formed for a study of the problems arising in the various questions at issue in this class of cases. The seventy cases which he presented had come under his care at the Kings County and Brooklyn Eye and Ear Hospitals. Tumors of the brain were unquestionably one of the common diseases with which both the neurologist and the general practitioner had to deal, and for the increasing frequency with which the diagnosis of this condition was made it was fair to assume that these tumors, like similar growths in other parts of the body, were becoming more frequent. On the other hand, however, it must be admitted that this increase was more apparent than real, from the fact that medical science had rendered us more competent to diagnosticate the condition. That tumors of the brain occurred at all ages was manifested by the extreme variation in his cases, from six months to seventy-two years. The ages in his cases supported the general fact that these growths were most common between twenty and fifty, less common between birth and twenty, and least common after fifty. This greater frequency during middle life was in part due to the greater frequency of the occurrence of syphilitic tumors during that period. According to Starr, syphilitic cerebral tumors were never hereditary. The fact, stated by all writers, that brain tumors were more common in males than in females, was well supported by his cases, 41 occurring in males and 29 in females. As to the real cause of the occurrence of most of these growths, medical science was to-day as ignorant as it was as to the occurrence of such growths in other parts of the body. Fifty-three of his cases were without known cause. Five were shown to be tuberculous, while six occurred during active syphilis, and ended in recovery under specific treatment. It was not to be assumed, however, that because a brain tumor improved under such treatment it was necessarily syphilitic, since it was an established fact that other forms of brain tumor, especially sarcoma, might at times be favorably influenced by the administration of potassium iodide. Two others of his cases were shown to be syphilitic at the autopsy or operation. As to heredity as a producing cause, Dr. Brush was inclined to believe that, in view of the small number of cases in which this appeared to play a part, a history apparently supporting such an hypothesis was simply a coincidence or merely an evidence of physical predisposition which rendered the patient susceptible to the action of some other cause. He was also of the opinion that injuries to the head, which were assigned by medical writers as among the causes, were practically not to be regarded in this light. Among three thousand cases of head injury in his experience, in only one instance was had such injury apparently been followed by a brain tumor, and he thought that all that could at the present time be said in support of this theory was that the injury called attention to or aggravated the course of a preexisting growth. In three of his cases in which trauma had been alleged as a cause, this was shown not to be the case. The situation was further complicated by the well established fact that a localized meningitis might at times present a clincal picture indistinguishable from that of cerebral tumor. As the possibility of relief depended largely upon an early diagnosis, it was evident that the nature of the disease should be recognized as soon as possible and before irreparable damage was done, but, unfortunately, this was often an extremely difficult matter. The early diagnosis was often not made from the fact that the patient paid but little attention to the early symptoms, and did not apply for relief until the appearance of some disabling condition. In many instances the absence of definite symptoms was explained by the facts that the brain could accommodate itself to pressure, which was produced gradually, and that tumors which grew slowly, and did not infiltrate, might thus make a considerable size before such symptoms occurred. The slow and regular development of the characteristic symptoms occurred in only eighteen of his cases. In these cases the interval of time for the symptoms to attain such a degree of development as to lead the patients to such medical aid varied from two months to ten years; but only three of them were of over three years' duration. That brain tumors were as a rule slow in their development was supported by the histories of his cases. In 62 this was the fact, while in the remaining 8 the duration was from two to eight weeks. Four of the latter were undoubtedly syphilitic; going to support the

common observation that syphilitic cerebral neoplasms developed rapidly.

The fact that the mode of invasion differed in different instances was well shown in his cases. In 20 convulsion seizures constituted the most prominent early symptome. These seizures were of three types: 1. The general epileptic, or grand mal. 2. The petit mal. 3. That in which the attacks consisted of localized spasms, without loss of consciousness. Next to convulsive disorders, defective vision was the most common early symptom for which the patient sought relief. From the fact that neuroretinitis occurred in 80 per cent. of all brain tumors it might be supposed that this would be even a more common early symptom; but it was also a well established fact, that a high degree of such neuroretinitis might occur before the patient noticed the visual defect. Severe headache, associated with nausea, vomiting, and vertigo, was the early clinical picture in four cases for a period ranging from three months to one year, and during this period the real nature of the disease present was a matter of doubt. In these cases an ataxic gait, with increased knee jerk and vertigo, existed for three years before the development of other symptoms, in three the first symptom was the slow development of hemiplegia, and in two a subjective vertigo existed alone for a period of three years and eight months. In four of his cases the existence of brain tumor was discovered only at the autopsy. During life one of these was diagnosticated as paretic dementia, one as chronic dementia, and two as major hysteria. Three other cases, not included in his list of seventy, were diagnosticated as brain tumor, but were found on operation to be cases of localized meningitis. The nature of a brain tumor, as was admitted by all, was merely conjectivial during life, unless the case came to operation. Among his own cases the character of the growth was determined in 52. This list includes 11 syphilitic cases, which ended in recovery under treatment. Of the others, 9 were of glioma, 14 of garcoma, 7 tuberculous, 4 cystic, 1 of angeioma, and 1 of psammoma.

The results obtained by treatment in his cases were as follows: Fourteen recovered under medical treatment, 19 were improved by surgical means, 13 died, and 26 passed from observation as unimproved. The only drugs known to influence the growth of a tumor favorably were potassium iodide, mercury, and arsenic. In his experience no form of mercurial treatment was so effective as that by inunction. Brain tumors which did not quickly show some improvement under medical treatment, were, if situated in accessible regions, proper subjects for surgical intervention, for the reason that death was the usual termination. An operation, however, should not be too hastily advised, nor should too sanguine a promise of success for it be held out, because we could not thus repair the actual damage done by the tumor, while damage incident to its removal might cause increased or new paralytic symptoms. It was also true, however, that by an operation we might sometimes improve or cure paralytic conditions when these were due to pressure by the growth on adjacent parts. It was furthermore true that, as in cerebral hæmorrhage, some improvement might occur in the paralyzed parts from the functions of the injured cortex being supplied by other parts of the cortex. The patient and his friends, then, should be made clearly to understand that the operation was undertaken for the purpose of arresting the disease, rather than for a cure of all the symptoms. Of the 19 cases in which an operation was performed, the tumor was found to have been correctly localized in 18. In the remaining case the symptoms present were those usually observed in lesions of the lateral lobes of the cerebellum, but when the patient died the growth was found to be in the frontal lobe. This case afforded evidence of the correctness of the statement that tumors might give rise to symptoms referable to other parts of the brain, either by pressure on adjacent tracts or by disturbances of the circulation. In two of the cases the tumor was found to be unremovable by reason of its size, indefinite outline, and malignant nature. Having given a summary of the remaining 16 cases, he concluded as follows: The established facts, then, in the surgical aspect of brain tumors would seem at the present time to be that no patient should be subjected to operation until he has failed to improve after a month's treatment with the iodides or mercury; that the non-malignant nature of the tumor should be established by its slow growth, that we should be able to clearly localize its position in a surgically accessible region; that it should be of moderate size and have clearly defined outlines for removal to be attempted; that in subcortical tumors a moderate incision of the cortex did not cause any serious consequences; and that the best results were to be obtained in early cases which showed little evidence of brain destruction.

Aphasia.—Dr. E. D. Fisher read a paper on this subject. After giving some definitions of terms, he said that speech, as a faculty, was acquired through sound, not sight. Many very intelligent persons might not be able to read or write, and this was not true, of course, in the converse, if we excepted deaf mutes and the blind. Aphasia was properly divided into motor and sensory, both functional areas of the brain being necessary for the acquisition of speech. We must have the receptive centre for hearing the spoken word, and also the motor centre to translate those memories of words into expression. And here, again, it was not so much the paralysis of the muscles necessary to articulation which was referred to when speaking of motor aphasia, as the loss of the memory of the proper combination of the necessary muscular acts for articulation. Hence the term ataxic aphasia. Speech was synthetic, for, while its acquisition was essentially through the hearing and motor centres, and these were probably the only necessary means, still the sight of the written word, as we later acquired the ability to read and write, aided largely in speaking. In aphasia this might be of service in the reacquisition of the impaired function. We could include also as aid to speech our general information concerning the subject or object to be spoken of, the memory associations being all called up at the same time. Knowing the special centre for motor speech (Broca's convolution), and that for the perception of spoken languages (the first temporal), we could suppose there were lesions involving these centres alone and giving the corresponding disturbances of speech; or, again, we could conceive of the lesion affecting the association fibres between these two centres. Motor aphasia was not always complete, as some few words or expressions might remain. In many cases of motor aphasia, incomplete and associated with right hemiplegia, there was considerable amnesic aphasia, i. e., a loss of the memory of the names of things, with no impairment of the understanding of them when spoken. This was probably due to the involvement of the fibres (island of Reil) passing from the first temporal to the third frontal convolution. Such persons possess the power of gesticulation, and could thus express what they wanted, but were unable to answer definite questions by either speech or writing. Agraphia was almost invariably present in amnesic aphasia, showing the secondary and subsidiary relation of writing to speech itself. This was the commonest form of aphasia. So called sensory aphasia consisted in a loss of the memory of the word when heard. In this word deafness we might have perfect power of speech, although the patient did not understand when spoken to. Still, in many such persons we had a form of paraphasia, or jargon speech.

Book Notices.

A Manual of the Eclectic Treatment of Disease. By Finley Ellingwood, M. D., Professor of Materia Medica and Therapeutics and pro tempore Professor of the Practice of Medicine in Bennett Medical College, Chicago, etc. In Two Volumes. Volume I. Chicago: Chicago Medical Times Publishing Company, 1906. Pp. 455.

In these days of therapeutic nihilism one has a new sensation to find that remedies are still legion, and that any morbid condition is likely to be benefited by a selection from numerous medicaments. This is essentially a work on treatment, the author has aimed to make it exhaustive, and it should prove helpful and suggestive to those who follow its school of practice.

First Aid in Illness and Injury. Comprised in a Series of Chapters on the Human Machine, its Structure, its Implements of Repair, and the Accidents and Emergencies to which it is liable. By James Evelyn Pilcher, M. D., L. H. D., Major and Brigade Surgeon of United States Volunteers; Captain in Medical Department of the United States Army; Secretary and Editor of the Association of Military Surgeons of the United States. Ninth Edition, Revised, with 208 Illustrations. New York: Charles Scribner's Sons, 1905. Pp. xiv-356.

The author has availed himself of the opportunity afforded by the appearance of this ninth edition to give his work a thorough revison and to describe the latest system of transportation of the ill and injured adopted by the army. The text has been elucidated further by the introduction of thirty-three new illustrations, and the volume sustains its reputation as an excellent manual of instruction in first aid.

The Ophthalmic Year Book. Volume III. Containing Digest of the Literature of Ophthalmology, with Index of Publications for the year 1905. By Edward Jackson, A. M., M. D., Professor of Ophthalmology in the University of Colorado, and George E. de Schweinitz, A. M., M. D., Professor of Ophthalmology in the University of Pennsylvania. With Forty-two Illustrations. Denver: The Herrick Book and Stationery Company, 1906. Pp. 286.

The contents of this volume seem to cover the realm of ophthalmology for the year. The editors have culled from the enormous output of ophthalmic literature the articles which seemed to them of greatest value, and presented the essential points of each as tersely as possible. Hence the book contains the great majority at least of the valuable ideas which have appeared in the various parts of the world during 1905, collated and arranged methodically.

The Operative Treatment of Fractures. By W. Arbuthnot Lane, M. S., F. R. C. S., Surgeon to Guy's Hospital and Senior Surgeon to the Hospital for Sick Children, Great Ormond Street. London: The Medical Publishing Company, Limited, 1905. Pp. 144.

This monograph does not purport to treat the subject of the operative treatment of fractures in its entirety, as the author confines himself more or less to general principles and to the advocacy of certain views, principal among which is the opinion, justified by skiagraphy, that it is often impossible to put displaced fragments of broken bones in accurate apposition without operative intervention.

The author has ground for his dictum that too often the surgeon is ready to lay what blame he can upon the patient or his tissues, and that he regards as obstructive to recovery any factor other than the obvious inefficiency of his treatment. He states that he has never met with an instance in which union would not have resulted if efficient operative measures had been adopted.

He considers age no barrier to an operation, and the latter is performed under careful aseptic precautions. His views are in accord with the best surgical opinion, and their application will result in fewer badly united or ununited fractures.

The Combined Treatment in Diseases of the Eye. By G. Herbert Burnham, M. D. Tor., F. R. C. S. Edin., M. R. C. S. Eng., Professor of Ophthalmology and Otology at the University of Toronto, etc. London: H. K. Lewis, 1906.

By "the combined treatment" the author means "the internal use of mercury and the iodide of potassium associated with the hypodermic use of pilocarpine." He reports the results he has obtained in many forms of ocular trouble and urges that the use of this combination be widely adopted. Some of us have found pilocarpine to be a treacherous drug, but he pronounces it reliable, even in pretty large doses. It is unfortunate that many of the observations are not recorded with a degree of scientific accuracy which would exclude a possible *post hoc ergo propter hoc.* An example is a case of conical cornea in which a flattening of the cornea with a resultant improvement of vision and an improvement of the general health followed the administration of the "combined treatment." The contentions which are made are surprising and the subject of this treatment should undergo a thorough investigation, for if this combination should prove to have the therapeutic value ascribed to it, it will be a valuable addition to our armamentarium.

Miscellany.

Inauguration of the Chair of Clinical Therapeutics, Paris.—Robin read a paper at this occasion, in which he said: There are traditional undisputed remedies which have stood the test of time, and have been perfected by skilled manipulation or by the discovery of their modes of action. These are at the foundation of therapeutics. In addition, there are ætiological and pathogenetic medicaments which have been universally approved, but which will be traditional to-morrow. Then there are functional remedies which increase in number as physiology advances, and are directed against the gross lesions as well as the causal functional disorder. There is finally the medication of nutritional vices which strikes at the chemical deviations of morbid life, aiming at the less obvious symptoms, while ordinary symptomatic remedies reply to the manifest evidences of disease. Therapeutical tactics is the art of manipulating the remedies of various classes.—*Edinburgh Medical Journal,* July, 1906.

Causes of Famine in India.—Charles Edward Russell, telling the unvarnished story of the Indian famines in his Soldiers of the Common Good, in the June issue of *Everybody's Magazine,* says: "The immediate cause of famines is the failure of the rainfall. The primary and original cause is the atrocious land system and tax system. The Indian farmer is not improvident, and he is not a fool. If he had any chance in the world he would in plenteous seasons lay by for the lean years and so survive. But because of the land system and the tax system, he is never able to accumulate even the smallest reserve; at the best he must live from hand to mouth no matter what his thrift or what the tilth of his fields. Sometimes the Indian farmer is a peasant proprietor, owning the land he tills. More often he

rents of the native prince on whose vast estate he is one of maybe a hundred thousand tenants. And often again he rents directly from the Indian Government, which, through the seizure or acquisition of the native territory, has become the greatest landlord in India. But whether he own his land or rent it, this devilish system grinds him to his last cent. For his rent rate and his tax rate are alike measured upon the produce of his land, so that the greater his industry the greater are the fat takings of the landlord and of the tax gatherer. The tax that he pays is equivalent to an income tax of fifty to fifty-five per cent. In some regions it is even more."

Puerperal Sepsis.—Jackson observes that more than fifty years have passed since Semmelweiss showed that puerperal sepsis was contagious. Modern hospitals have practically no death rate from this cause, while in private practice the death rate is still large. An obstetric case demands the same regard for asepsis as a surgical case. The importance of educating midwives in their art is emphasized. Many varieties of bacteria may cause puerperal sepsis, and we are doubtless ignorant of the properties of some of them. Acting locally the bacteria of putrefaction cause sapræmia. Infection is usually due to contact, but there may be autoinfection. Predisposing causes are bad health, hæmorrhage, lacerations, prolonged second stage, retained products of conception, anteflexion, stenosis of os internum, and the peculiar conditions of the placental site. The lesions may vary from simple vaginal ulcer to pyæmia. Prophylaxis, which means scrupulous care and precautions, is all important. Alcohol irrigation, after careful preparation, is recommended, two to four ounces of fifty per cent. alcohol being injected through a double current tube into the uterus every few hours until improvement is manifest.—*American Journal of Obstetrics,* July, 1906.

Self Restraint in the Practice of Surgery.—Stimson, in the *American Journal of Medical Sciences,* June, 1906, sounds a warning for more conservatism in surgery. One of the influences which impel so many surgeons, especially the younger ones, to immediate action rather than to delay under almost any circumstances, is the ease and security with which surgical operations are now performed and recovered from. Increased application of instruments of precision to clinical investigation and the growing importance of laboratory methods, tend to restrict the use of the clinical mind, and may lead to unnecessary or harmful surgical procedures. The undue importance given to leucocytosis and arterial tension is cited as an illustration of too great dependence upon imperfect knowledge. The tendency to minimize the objections to an operation is criticised, and to overlook the fact that divided tissues or an opened joint may never regain their normal functional power. The expansion of operative surgery by doing too much is deprecated. Well known illustrations are removal of the uterus because the appendages have been removed and the uterus is therefore supposed to be useless, removal of the appendix because the abdomen has been opened, prostatectomy to the neglect of the catheter, and the growing passion for gastroenterostomy. The exaggerated chase for germs and the illogical methods of carrying it on are exposed to well deserved satire, also the ill advised attempts to cleanse the entire peritoneal area, and to protect it with gauze, forgetful of the ills which will follow its use. The value of the climatic and hygienic treatment of tuberculosis is set over against the futile attempt at the physical removal of all the bacilli. Excessive interference in the treatment of wounds, fractures, dislocations, etc., is referred to as a common and most deleterious tendency, and the plea can easily be inferred that a greater reliance upon nature and less upon art would be in the line of healthy progress.

Obstetrical Superstitions.—Dr. W. C. Kissinger says, in the *Pennsylvania Medical Journal,* that in all branches of medicine one meets with many curious superstitions. We, as a nation, are the least superstitious of any people, because we are the best educated people in the world. In obstetrics one meets with some curious ideas that have existed for centuries. The doctor knew of a case in which the mother and nurse positively refused to allow the doctor to weigh the baby because it was unlucky. The custom of burning the cloth used to dress the cord originated in a superstition. Experience has shown it to be of value and science tells us why. It is considered unlucky to be born on Friday. The months and phases of the moon also influence the future of the baby. Galen has said that "animals born when the moon is falciform are weak, feeble, and short lived, while those born when the moon is full are the reverse." On the other hand, it is an extreme good fortune to be the seventh daughter of a seventh son. To be born with the caul is also a rare good fortune. These membranes are dried and are supposed to possess a wonderful charm. The possessor is endowed with eloquence and is enabled to avoid many serious dangers. It is reported that these "cauls" may be bought in France for a reasonable price. A small drink of urine is advocated by some as an excellent remedy to increase labor pains and thereby hasten delivery. Holding a palm leaf in her hand or placing a sardonyx between her breasts will do the same thing.—Through *Medical Review of Reviews.*

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending August 3, 1906:

Smallpox—United States.

Places.	Date.	Cases.	Deaths.
Florida—Duval County	July 21-28	1	
Kansas—General	June 1-30	150	
Massachusetts—Boston	July 21-28	1	
Massachusetts—New Bedford	July 21-28	5	
Oklahoma Territory—Oklahoma	July 7-21	5	
Tennessee—Memphis	July 21-28	3	
Smallpox—Foreign.			
Africa—Cape Town	June 16-23	1	
Brazil—Pernambuco	June 1-15		4
Chile—Antofagasta	June 2-9	14	2
Chile—Iquique	June 24	Present.	
France—Rheims	July 8-15	12	
India—Madras	June 16-23		3
Italy—General	July 5-12	31	
Panama—Colon	To July 18	32	
Russia—Odessa	June 30-July 7	3	2
Yellow Fever—Foreign.			
Cuba—Matanzas Province	Aug. 1	1	
Mexico—Merida	July 8-21	14	7
Cholera—Foreign.			
India—Madras	June 16-22		2
Persia—Seistan	June 23-30		1
Plague—Foreign.			
Brazil—Bahia	July 2	1	
Brazil—Pernambuco	June 1-15		1
Chile—Antofagasta	June 2-16	18	2
Egypt—Alexandria	July 8-9	3	1
India—General	June 9-16	2,224	1,904
Japan—Formosa	June 20-30	119	129
Peru—Paita	June 15-22	4	1

Public Health and Marine Hospital Service:

List of Changes of Station and Duties of Commissioned and Non-commissioned Officers of the Public Health and Marine Hospital Service for the seven days ending August 1, 1906:

BAILEY, C. WILLIAM, Acting Assistant Surgeon. Granted leave of absence for ten days, from August 6, 1906.

BIERMAN, C. H., Pharmacist. Granted leave of absence for thirty days, from August 5, 1906.

BLAIN, A. C., Acting Assistant Surgeon. Granted leave of absence for fifteen days, from August 2, 1906.

EARLE, BAYLIS H., Passed Assistant Surgeon. Relieved from duty as recorder of the board of officers detailed to conduct an inspection of the Government buildings and workships in the District of Columbia, and directed to report for temporary duty to the Director of the Hygienic Laboratory.

HOBBY, W. C., Passed Assistant Surgeon. Directed to proceed to Port Harford, Cal., for special temporary duty, upon completion of which to rejoin station.

RICE, W. E., Acting Assistant Surgeon. Granted leave of absence for seven days, from August 9, 1906.

ROSENAU, M. J., Passed Assistant Surgeon. Granted leave of absence for one day, July 28, 1906, under paragraph 189 of the Regulations.

SINCLAIR, A. N., Acting Assistant Surgeon. Granted leave of absence for seven days, from July 16, 1906, under paragraph 210 of the Regulations.

WALKER, T. DYSON, Acting Assistant Surgeon. Granted leave of absence for eight days, between June 26, 1906, and July 6, 1906.

WARREN, B. S., Passed Assistant Surgeon. Directed to proceed to Buffalo, N. Y., for special temporary duty, upon completion thereof to rejoin station.

Board Convened.

A board of officers was convened to meet at Baltimore, Md., August 2, 1906, for the purpose of conducting the physical examination of officers of the Revenue Cutter Service. Detail for the board: Passed Assistant Surgeon H. A. Stansfield, chairman; Passed Assistant Surgeon J. W. Schereschewsky, recorder.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army for the week ending August 4, 1906:

BAKER, DAVID, Captain and Assistant Surgeon. Reports for duty at Fort Bliss, Texas.

BOSLEY, JOHN R., First Lieutenant and Assistant Surgeon. Left Fort Egbert with Companies G and H, 3rd Infantry, *en route* to Skagway, Alaska.

CLARK, JOHN A., First Lieutenant and Assistant Surgeon. Reports arrival at Camp of Instruction, Chickamauga, Ga.

CONNOR, C. H., First Lieutenant and Assistant Surgeon. Left Fort Stevens, Ore., *en route* to Camp of Instruction, American Lake, Wash., for duty.

DUNCAN, LOUIS C., First Lieutenant and Assistant Surgeon. Reports arrival at Camp of Instruction, Fort Benjamin Harrison, Ind.

HANSELL, H. S., Captain and Assistant Surgeon. Reports arrival at San Francisco, Cal., from duty in the Philippines Division; ordered to proceed to the Presidio, San Francisco, Cal., for duty at that station.

HARTNETT, EUGENE H., Captain and Assistant Surgeon. Relieved from duty at Fort Hancock, N. J., and ordered to duty in the Philippine Islands.

HESS, LOUIS T., Captain and Assistant Surgeon. Reports arrival at Vancouver Barracks, Wash., for duty with troops to Camp of Instruction, American Lake, Wash.

JONES, PERCY L., Captain and Assistant Surgeon. Reports arrival at Camp Roosevelt, Mount Gretna, Pa., for duty.

LYNCH, CHARLES, Major and Surgeon General Staff. Detailed to attend encampment of the Ohio National Guard, near the villages of Strasburg and Bolivar, Ohio, October 13 to 20, 1906.

MASON, CHARLES F., Major and Surgeon. Leave of absence extended fifteen days.

MAUS, LOUIS M., Lieutenant Colonel and Deputy Surgeon General. Reports for duty as Chief Surgeon, Camp of Instruction, near Austin, Texas.

PHALEN, JAMES M., First Lieutenant and Assistant Surgeon. Reports arrival at Camp of Instruction, near Austin, Texas.

PINKSTON, OMAR W., First Lieutenant and Assistant Surgeon. Order assigning him to temporary duty in the Department of California amended so as to direct him to proceed to Camp of Instruction, Fort Riley, Kas., upon relief from temporary duty at the U. S. Military Prison, Fort Leavenworth, Kas.

RAND, IRVING W., Captain and Assistant Surgeon. Relieved from duty at the Presidio, San Francisco, Cal., and ordered to the Philippines for duty.

RICH, E. W., First Lieutenant and Assistant Surgeon. Reports arrival at Camp of Instruction, Camp Roosevelt, Mount Gretna, Pa., for duty.

ROBBINS, C. P., Captain and Assistant Surgeon. Reports arrival at Camp of Instruction, Camp Roosevelt, Mount Gretna, Pa., for duty.

ROCKHILL, E. P., Captain and Assistant Surgeon. Granted leave of absence for thirty days.

RUSSELL, F. F., Captain and Assistant Surgeon. Arrived at Benicia Barracks, Cal., for duty with Signal Corps, Camp of Instruction, American Lake, Wash.

SHOCKLEY, M. A. W., Captain and Assistant Surgeon. Arrived at San Francisco, Cal., from duty in the Philippine Islands; ordered to proceed to Fort Wright, Wash., for duty at that station; granted thirty days' leave of absence.

SHOOK, JAY R., Captain and Assistant Surgeon. Left Fort Des Moines, Iowa, *en route* to Camp of Instruction, Fort Riley, Kas.

SKINNER, GEORGE A., Captain and Assistant Surgeon. Left Fort William Henry Harrison, Mont., *en route* to Camp of Instruction, American Lake, Wash., for duty.

STEPHENSON, WILLIAM, Major and Surgeon. Left Presidio, San Francisco, Cal., *en route* to Camp of Instruction, American Lake, Wash., for duty.

STONE, JOHN H., Captain and Assistant Surgeon. Left Key West Barracks, Fla., *en route* to Camp of Instruction, Chickamauga, Ga.

WALES, PHILIP G., Major and Surgeon. Arrived at San Francisco, Cal., from duty in the Philippines Division.

WILSON, JAMES S., Captain and Assistant Surgeon. Reports arrival at Camp of Instruction, Chickamauga, Ga.

WOLFE, E. P., Captain and Assistant Surgeon. Arrived at San Francisco, Cal., from duty in the Philippines Division, ordered to proceed to Fort Hancock, N. J., for duty at that station.

Births, Marriages, and Deaths.

GEARHART—HANLEY.—In Reading, Pennsylvania, on Wednesday, August 1st, Dr. Malcolm Z. Gearhart and Miss Bessie May Hanley.

LINES—HASKINS.—In New Orleans, Louisiana, on Tuesday, July 24th, Dr. D. M. Lines and Miss Adele Haskins.

LOTT—HOPKINS.—In Seneca Falls, N. Y., on Thursday, July 26th, Dr. Schuyler Lott and Mrs. M. Cornelia Hopkins.

TOWNSEND—ROBINSON.—In Washington, D. C., on Monday, July 30th, Dr. Frederick W. Townsend and Mrs. Paul Booker Robinson.

Died.

ATWATER.—In Brooklyn, on Tuesday, July 31st, Dr. Henry A. Atwater, aged twenty-eight years.

CHAPMAN.—In Hudson, Michigan, on Sunday, July 29th, Dr. George Chapman, aged seventy-nine years.

CORNICK.—In Princess Anne, Virginia, on Friday, July 27th, Dr. William F. Cornick, aged sixty-nine years.

HERMAN.—In Waterbury, Connecticut, on Thursday, August 2nd, Dr. Charles F. Herman.

NILES.—In Tioga, Pennsylvania, on Monday, July 23rd, Dr. Augustus Niles, aged fifty-three years.

TAYLOR.—In Honolulu, on Monday, July 30th, Dr. William H. Taylor, retired medical inspector.

WILLARD.—In Lorettsville, Virginia, on Monday, July 30th, Dr. James Willard, aged eighty-nine years.

WOODWARD.—In Round Lake, N. Y., on Wednesday, July 25th, Dr. Harriet A. Woodward.

YOUNG.—In Washington, D. C., on Sunday, July 29th, Dr. Parke G. Young, aged fifty-five years.

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Original Communications.

A MODEL FOR A NEW OPHTHALMOTROPE; THE GONIOSCOPE. SOME PHASES OF OCULAR MOTILITY.*

BY D. KERFOOT SHUTE, A. B., M. D.,
Washington, D. C.,
Professor of Clinical Ophthalmology and Anatomy in the George Washington University, etc.

There are two types of ophthalmotrope, one of them being exemplified by Knapp's instrument and the other by Landolt's. The former is constructed upon the principle that the eye moves about its centre of rotation as if it were a universal joint or ball and socket (enarthrodial) joint, while the latter is based upon the principle of a hinge (ginglymus) joint. The former type is misleading from almost every point of view.

Helmholtz taught that as far as the musculature of the eyeball is concerned, and from a mechanical point of view, it is capable of revolving about any conceivable one of an infinite number of diameters passing in any direction through the centre of rotation. And yet he taught, as did Listing, that every possible physiological movement of the eye occurs around an axis restricted to one plane (Listing's plane). This plane is a coronal one, a vertical transverse plane fixed in the head and passing through the centre of rotation of each eye. Rotations about the vertical and transverse axes in Listing's plane can be compounded into rotations about any intermediate axis. Since the eye, mechanically, is capable of rotating about any one of an infinite number of diameters passing in any direction through the centre of rotation (the centre of rotation is presumed, for the sake of simplicity, to coincide with the geometric centre), and yet is restricted physiologically to axes in only one plane, what is the restraining agency? It is a matter of encephalic coordination, a matter of innervation. This encephalic coordination creates axes for an eye which are just as imperious in their sway over the movements of the eye, as if they were fixed and rigid steel rods. It is true that under the dominating influence of the brain one physiological axis can instantly be replaced by another so that movements can be secured in an infinite variety of directions. But the principle is the same as if one steel rod were withdrawn and another inserted in a different direction. Physiologically the eye revolves upon a given innervation axis just as a rubber ball may be made to rotate upon a steel hat pin thrust through it. It is upon this principle that Landolt's ophthalmotrope is constructed; it is upon this principle also that the writer's is based.

The writer's device differs from that of Landolt in its simplicity, in the ease with which it can be constructed by any one out of very simple materials, such as an india rubber ball, a hat pin, and a tobacco box; it also differs from his in the fact that the rubber ball can be so easily painted, or marked with ink and made to serve as a model of an eyeball, instead of looking like a mere frame work of rings as does Landolt's; it also has the great merit of concentrating the attention of the student upon a single axis at a time instead of distracting his attention by the presence of a number of very different axes; it can be made to show the rotation of the eye about axes in Listing's plane, thus giving lessons in physiology; or it can represent movements of the eyeball about axes perpendicular to individual muscle planes and thus out of Listing's plane so that the pathology of ocular motility can be investigated with the greatest accuracy. It readily permits also a study of ocular rotations under the influence of internal and external recti when attached to the eyeball, either too high or too low. Lastly, it differs from Landolt's instrument, in that it was primarily constructed for the purpose of demonstrating the necessity of diversity, instead of community of axes for the obliques on the one hand, and the superior and inferior recti on the other hand. In short, the instrument differs from all others with which the writer is familiar in its extreme simplicity, flexibility, and adaptability for demonstrating all the known ocular rotations upon sound physiological principles.

Maddox, in his extremely interesting and instructive work on *The Ocular Muscles*, discusses the deductions to be drawn from a study of the india rubber ball of Landolt and from a study of his own modification of this rubber ball in reference to "tilted axes." The question of tilted axes was originally suggested by Meissner, and although it has an exceedingly important bearing on the symptomatology of ocular palsies, no current works on physiology or ophthalmology, except that of Maddox, even mention the hypothesis. They all either fail to treat of the subject of axes of rotation altogether, or adopt the common axis theory.

Through study of Landolt's india rubber ball Maddox very justly observed that paralysis of

* Read before the Society of Ophthalmologists and Otologists of Washington, December 15, 1905.

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say the right superior rectus (the left eye remaining in the straightforward primary position) produces the same effect as slight spasm of the right inferior rectus, if the hypothesis be true that the superior and inferior recti have a common axis. Maddox goes on further to say that either previous clinical observations in the primary area of the motor field are incorrect or the single axis view is no longer tenable. He makes the further strange statement that he will not attempt to say which is the case.

During fifteen years' experience in the dissecting room the writer has often had occasion to demonstrate to students that the muscle lines of the superior and inferior recti, and those of the obliques pass to their insertions considerably on the nasal side of a pin passed approximately in a vertical direction through the geometrical centre of the eyeball when apparently in the straightforward primary position.

Since three points not in the same straight line determine the location of a plane, and since the centre of origin (actual or virtual) of each muscle concerned is very considerably on the mesial or nasal side of the centre of rotation, and since, further, each muscle line passes as a tangent to its point of contact with the eyeball on the nasal side of the centre of rotation, the muscle planes are of necessity tilted from the vertical in the straightforward primary position of the eyeball; and a tilted muscle plane demands an axis of rotation at right angle to the plane through the centre of rotation. The muscle planes of the superior and inferior obliques form a decided diedral angle at the centre of rotation, and as each plane is oblique, their muscle axes of rotation must be different. The same is true of the superior and inferior recti. It thus appears to me that even on anatomical grounds alone we must accept the view of a different axis for each of these muscles.

Further, the facts of clinical experience demand the hypothesis of tilted axes (diversity of axes); for this experience teaches that simple, uncomplicated paralysis of say, the right superior rectus, when the left eye is in the straightforward primary position, leads not only to subduction and extorsion, but also to abduction and therefore to crossed diplopia.

The writer's ophthalmothrope, like Maddox's modification of Landolt's india rubber ball, beautifully demonstrates the accuracy of clinical experience on the basis of a tilted axis; with equal ease, it demonstrates the error of all preceding clinical experience on the common axis hypothesis. Corresponding demonstrations can easily be made by means of the ophthalmothrope in reference to the inferior rectus and the obliques.

Landolt's rubber ball and also his ophthalmothrope, being based on the principle of community of axes, horizontal axes, shows that a simple paralysis of the right superior rectus leads to adduction and therefore to homonymous diplopia; the latter is opposed to all clinical experience (in simple uncomplicated cases).

The writer's model (Fig. 1) consists of a somewhat narrow rectangular box open at the top and at either extremity (twenty centimetres long, ten centimetres wide, and five centimetres high). The sides of the box support movable clamp arms carrying perpendicular, *adjustable supporting rods* (c, c) which are for the purpose of receiving and keeping in a fixed position the extremities of a stout steel hat pin passed through an india rubber ball (a). The hat pin represents an innervation axis (physiological axis) of the eyeball, the rubber ball, of course, representing the eyeball. This ball is about eight centimetres in diameter. At one place it is painted to represent the cornea. Passing through the centre of the cornea to its horizontal and vertical limits (at right angles to each other) are arcs of the horizontal and vertical meridians (great circles) of the ball. At the posterior pole of the ball representing the fovea centralis, two other arcs are drawn at right angles to each other like those on the cornea. They are segments of the horizontal and vertical meridians. In the proper quadrants of these spherical right triangles at the posterior or macular pole of the ball are drawn in red ink three arrows and in black ink one arrow. This is for the purpose of studying the character of the diplopia and indicating it to a student. The particular rubber ball that I am describing (Fig. 1) represents a simple, uncomplicated paralysis of the right superior rectus. It further represents the eyeball under the influence of the resultant of all the remaining tensions of the eyeball, the sound eye being imagined in the straight forward primary position. This rubber ball representing the paralytic right eyeball is depicted with a tilted axis (exaggerated for easy demonstration).

The *adjustable placing cup* (e) is a very convenient device for getting the steel hat pin (carrying a rubber ball) in the correct position on the tops of the supporting rods. It is for the purpose of holding the rubber representative of the eyeball in the correct primary position until the hat pin is securely supported; then it is lowered and removed.

The *corneal gauge* (b) is a support carrying an adjustable upright, which is surmounted by a ring for receiving a movable watch crystal. The crystal is marked with a horizontal and a vertical line, intersecting at its centre.

When the rubber ball is in the correct position over the box and its hat pin axis is properly secured by the supporting rods, the corneal gauge is placed in the box in front of and quite close to the rubber ball, and is so adjusted as to have the horizontal and vertical lines of the watch crystal in the planes of the corresponding horizontal and vertical meridians of the cornea. Any displacement of the centre of the cornea, in consequence of rotations of the rubber ball on its steel axis, can readily be noted and its character studied. By placing the proper marks of identification for puncture and counter puncture with a hat pin, the same rubber ball can be used for study of ocular palsies of all the extrinsic muscles and therefore, pathological rotations on axes out of Listing's plane. Also physiological movements on axes in Listing's plane can easily be studied. The model has a second corneal gauge for studying the move-

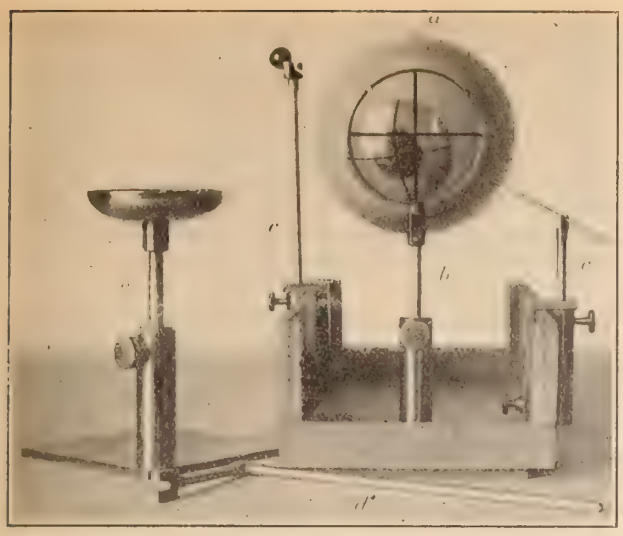


Fig. 1.

ments of the posterior or macular pole, as well as the anterior or corneal one.

The writer has devised a simple apparatus (Fig. 2), for which he has coined the name *gonioscope* (γωνία angle; σκοπεῖν to view). It is for the purpose of noting the varying angles made by the optic axis (in different positions of adduction and abduction) with the lines of force (muscle lines) of the two obliques and of the superior and inferior recti, and for aiding therefore in understanding the theoretical effects of contraction of a single one of the above mentioned muscles. Incidentally it also helps one to grasp the facts of torsion. The instrument is made of a tobacco box painted white. Upon its upper surface are placed three blocks, representing the boundaries of the orbits in a horizontal section. In the orbital areas are two brass discs representing the eyes. The upper surfaces of the blocks and of the discs correspond to the horizontal plane passing through the centre of rotation of each eye. The arrow on the upper surface of each disc represents the optic axis in the straightforward primary position. The original gonioscope, the picture of which is reproduced from a photograph, corresponds accurately to actual measurements from frozen sections of the head. The brass discs are twenty-four millimetres in diameter. The centre of the pivot around which the disc rotates is 1.5 millimetre behind the geometrical centre of the disc. The lines radiating from beneath the discs represent different degrees of rotation of the discs from the straightforward primary position. The middle block represents the interorbital area or nasal chambers. The black lines (silk threads in the instrument) crossing the upper surface of each brass disc and going to both extremities of the middle block represent the inferior oblique and superior rectus, or the superior oblique and inferior rectus. The portions of the silk threads representing the origins (actual or virtual) of the muscles pass through holes into the interior of the box, and are kept taut by pieces of lead attached to them.

Writers on physiology and ophthalmology teach that the muscle planes form fixed angles with the median plane of the head. This is an error. The lower edge of the muscle plane, of say, the superior rectus, forms a fixed angle with the median plane (27° for the recti), whether the eyes be in the straightforward primary position, or whether they be abducted or adducted. This is because the lower edge of this muscle plane extends from one immovable point (the centre of origin of the muscle) to another immovable point (the centre of rotation of the eye). But the *upper edge* of this muscle plane makes very varying angles with the median plane. This is due to the fact that while the centre of origin of the muscle is immovable, its centre of insertion is very movable. This is easily demonstrated by the gonioscope. When the recti (but not the oblique) muscles are pure elevators or depressors the muscle planes are vertical; when the muscles have their maximum torsioning power the muscle planes have their maximum obliquity.

The rotating discs (A, B) are for the purpose of fixing in the mind the presence or absence of physiological torsion when elevation or depression in primary or secondary positions are being studied. They represent the retinæ as pictured from behind the patient. The vertical arrow is painted in black and represents the vertical meridian of the fovea centralis in any of the primary positions. The oblique arrows are painted red and represent foveal meridians that become vertical (actually and physiologically) in movements to the right or left for secondary positions. They rotate upon an axis corresponding to the optic axis.

The front of the box has three horizontal bars upon it—two of which (a, a′) are immovable and painted yellow. The middle bar (b) is painted red and revolves upon a central pivot, so that the right or left end can be elevated or depressed. These bars are based upon the fact that, when there is placed before the normal eye a double Maddox prism with its ridge horizontal and a series of uncolored, vertical rods, and when a circle of gas light (usually yellowish) is viewed at twenty feet distance straight ahead, the normal eye sees two horizontal yellow lines (a and a′); they are based also upon the fact that, when a series of vertical Maddox rods, colored red, are

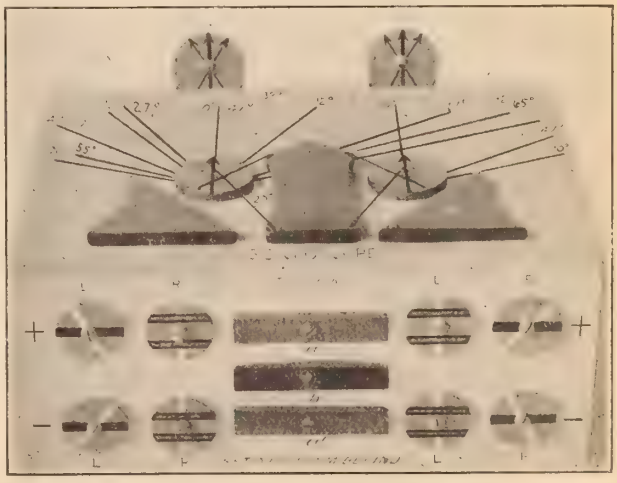


Fig. 2.

placed before the other normal eye looking at the same circle of gas light, a red line (b) is seen between the two yellow lines. If there should be any latent torsion (pathological torsion) of the eye before which is placed the vertical, red colored Maddox rods, it would be indicated by a tilt of the red line from the horizontal. The red bar (b) can be given the tilt that conforms to the patient's description of the tilted red line. The tilt of the red line as seen by the patient is always the inverse of the tilt of the horizontal meridian of the retina (or of the cornea) from the normal straightforward primary position.

The character of the torsion can readily be worked out, and therefore easily understood by a study of the four discs on either side of the three horizontal bars in the picture. The four discs immediately adjacent to the bars, a, b, a′, represent the normal eye having before it the double Maddox prism and the vertical uncolored Maddox rods, and are immovable. The two horizontal lines on each of these discs represent two horizontal yellowish lines focused on the retina (imagined to be transparent and observed from behind the patient) from the yellow circle of gas light at twenty feet. The white vertical line represents the nontorsioned vertical meridian. The two discs (they can be revolved) at either end of the box, with a single horizontal black line, and an oblique white line, represent the pathological eye which has placed before it the vertical, red colored rods of Maddox. The white, oblique line represents the primary, vertical meridian that has undergone torsion (plus or minus as the case may be). The single horizontal black line on each of these discs represents the horizontal red line focused upon the retina by the red colored vertical rods of Maddox placed before the pathological eye. The inclination of this red image, when projected by the pathological eye, can instantly be ascertained by revolving the disc so that the oblique white line shall become vertical.

This device may possibly seem insignificant to some experienced ophthalmologists, who have a well trained as well as a vivid imagination, but it ought to be a great help to the average student, as it certainly has been to the writer.

The discs on the top of the box, with the silk threads representing the obliques and the two recti, are not intended for the purpose of making actual demonstrations of rotations of the eyes (the ophthalmotrope is to be used for that), but they are for the purpose of getting the optic axis in such relation to the muscle line that the student can readily appreciate how a muscle may become or tend to become a pure elevator or depressor or a pure torsionist. The gonioscope will find its greatest usefulness in conjunction with the ophthalmotrope.

We have noted above that in the straightforward primary position of an eye the lower edge of the muscle plane of, say, the superior rectus (the edge of the plane extending from the centre of origin of the muscle to the centre of rotation of the eye), makes an angle of about 27° with the optic axis; the upper edge of this same muscle plane (the edge extending from the middle of the origin of the muscle to the middle of the point of tangential contact of the muscle with the eyeball) when projected upon the plane passing through the horizontal meridian of the eye and extended forward to the optic axis will pass on the nasal side of the centre of rotation of the eye and therefore form a smaller angle (approximately 25°) with the optic axis. This helps one to understand that the muscle plane of the superior rectus is not vertical and demands a tilted axis.

On the gonioscope the right disc can be rotated out (dextroverted) until the line of force of the superior rectus coincides in direction with that of the optic axis, and it can readily be understood by the student that the muscle has become a pure elevator. The left disc can be rotated the same number of degrees (27°) to the right (dextroverted) and the student can readily appreciate that then a very different set of muscular tensions obtains in the left eye from those in the right one. On the other hand, the right disc can be rotated to the left (sinistroverted) to the theoretical, but actually impossible extent that the line of force of the superior rectus is at right angles to the optic axis, and the muscle has lost all cephaloverting (elevating) power, and has become a pure torsionist and an adductor (sinistroverter). The left disc can be turned to the left (sinistroverted) to the same number of degrees and the student can readily appreciate the different tension components in the left eye as compared with the right one.

The writer has found this very simple gonioscope exceedingly helpful in unravelling the complex components of ocular motility, and he believes it will be very helpful to students commencing the study of the subject. The facts of physiological as well as pathological ocular motility are so difficult for the average student and even for many ophthalmologists to understand that the writer has attempted, in the present article, to present the subject in an unusual form; unusual in his manner of treatment of the subject and unusual, he hopes, in simplifying its intricacies. The ophthalmotrope and the gonioscope devised by the writer have been the outcome of his own difficulties in the study of this most complicated subject of ocular motility; and he believes, or rather hopes, that they will be very helpful to others who may be having trouble in understanding this difficult section of ophthalmology.

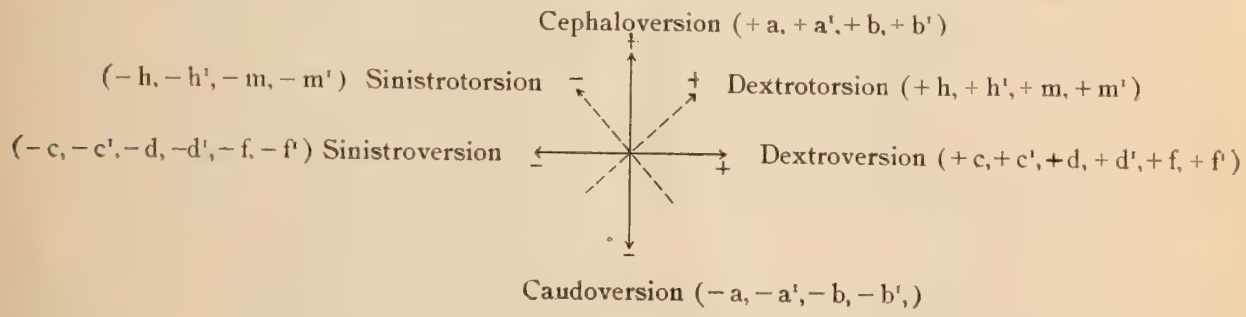
To further facilitate the study of eye movements in relation to individual and combined muscular contractions, the writer has devised SCHEMA I and SCHEMA II. For the sake of simplicity the eyeball is assumed to be spherical, and the centre of rotation to coincide with the geometrical centre; further, the fovea centralis is assumed to be at the geometrical posterior pole and the centre of the cornea at the anterior pole of the sphere; lastly, the optic axis is assumed to pass from the fovea centralis through the centre of rotation and the centre of the cornea to the centre of the object under inspection.

In SCHEMA I both eyes of the patient are supposed to be in the primary position, looking

straightforward in the horizontal plane to an object on the distant horizon. Each optic axis is supposed to be perpendicular to the vertical plane passing through the centre of rotation of each eye and therefore parallel to each other. The corneal arc of the vertical meridian of either eye when in the straightforward primary position may be spoken of as the primary vertical meridian of the cornea. Inclinations of the upper end of the primary vertical meridian of the cornea (wheel or swivel rotation of the eye around the optic axis) may be indicated, as shown by the arrows formed of interrupted lines by + and — signs; inclinations of this meridian of either eye to the patient's right are called *dextrotorsion*, and are noted by the + sign; inclinations to the patient's left of either eye are called *sinistrotorsion*, and are indicated by the — sign. Dextrotorsion of the patient's right eye is often spoken of as plus torsion or extorsion, while dextrotorsion of his left eye is known as minus torsion or intorsion. Sinistrotorsion (lævotorsion) of the patient's right eye is also known as minus torsion or intorsion, while sinistrotorsion of his left eye is called plus torsion or extorsion.

istroversion of the patient's left eye is also called abversion or abduction, while sinistroversion of his right is known as adversion or adduction).

Compound movements of the two eyes from the straightforward primary position upward and to the patient's right into a secondary position may be called *cephalodextroversions*. In cephalodextroversions the patient's right eye cephaloverts (superverts or sursumverts), dextroverts (abverts). and dextrotorts (extorts), while also his left eye cephaloverts (superverts or sursumverts), dextroverts (adverts), and dextrotorts (intorts). Likewise compound movements of the two eyes from the primary position downward and to the patient's right into a secondary position may be designated *caudodextroversions*. In caudodextroversions the patient's right eye caudoverts (subverts, or deorsumverts), dextroverts (abverts), and sinistrotorts (intorts), while at the same time his left eye caudoverts (subverts, or deorsumverts), dextroverts (adverts), and sinistrotorts (extorts). Compound movements of the two eyes from the primary position upward and to the patient's left may be called *cephalosinistroversions*. In these cephalosinistro-



SCHEMA I.

Movements of the optic axis of either eye may be upward, as indicated by the perpendicular arrow above the horizontal arrows in SCHEMA I. The movements may also be downward, as shown by the perpendicular arrow below the horizontal arrows. The optic axis of either eye may move to the right of the person under observation or to his left, as indicated by the horizontal arrow to the right and that to the left of the vertical arrows.

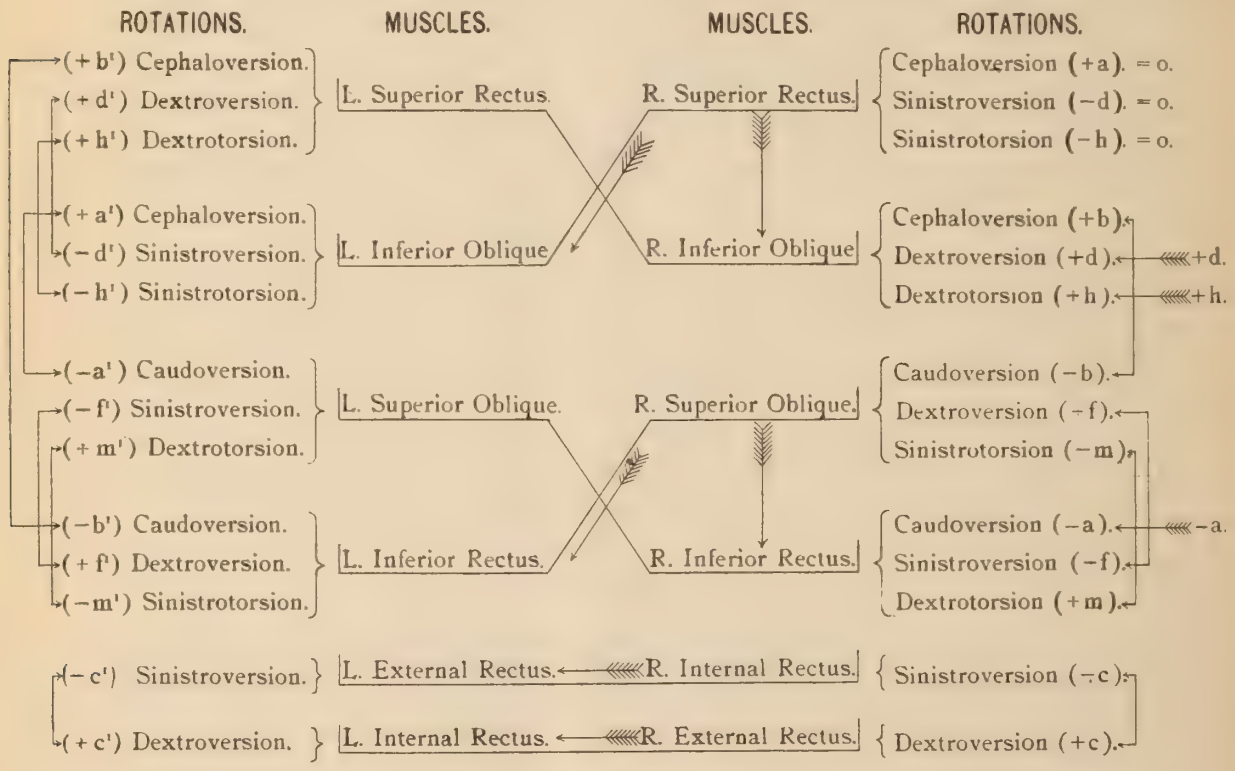
Upward movements of the optic axis (indicated by movements of the centre of the cornea) may be denoted by the + sign; downward movements by the — sign; to the patient's right by the + sign; to his left by the — sign. Upward movements of either eye may be called, in conformity with the nomenclature of anatomy, *cephaloversion* (also superversion, or sursumversion); downward movements of either may be called *caudoversion* (subversion or deorsumversion); movements of either eye to the patient's right may be designated *dextroversion* (dextroversion of the patient's right eye is also called abversion or even abduction. while dextroversion of the patient's left eye is called adversion or even adduction); movements of either eye to the patient's left may be called *sinistroversion* (sin-

versions the patient's left eye cephaloverts (superverts, or sursumverts), sinistroverts (abverts), and sinistrotorts (extorts), while his right eye likewise cephaloverts (superverts, or sursumverts), sinistroverts (adverts), and sinistrotorts (intorts). Compound movements of the two eyes from the primary position downward and to the patient's left may be designated as *caudosinistroversions*. In these caudosinistroversions the patient's left eye caudoverts (subverts, or deorsumverts), sinistroverts (abverts), and dextrotorts (intorts), while his right eye also caudoverts (subverts. or deorsumverts), sinistroverts (adverts), and dextrotorts (extorts).

In the interests of uniformity, simplicity, and an appreciation of the fact that the two eyes act together as one organ undergoing homologous rotations, it is to be hoped that writers on ophthalmology will more and more use the terms caudoversion instead of deorsumversion, dextrotorsion instead of plus or minus torsion or instead of extorsion or intorsion, caudodextroversion instead of down and to the right (whose right?), etc. It is to be particularly noted that the + and — signs are used, not to express algebraic equations, but simply to denote rotations in opposite directions; on the principle that opposite direc-

tions in geometry correspond to contrary signs in algebra.

In SCHEMA I and SCHEMA II the reader is supposed to be standing behind the patient and rotations or torsions to the right or left refer to the right or left of the patient. The left eye is supposed, in SCHEMA II, to be normal and in the primary position. The components of the tonicities of the muscles of this left eye are indicated by letters in parenthesis. The component in one muscle tonicity that neutralizes an opposite component in another muscle tonicity is indicated by brackets extending from one letter with a plus sign to the same letter with a minus sign. For example, a bracket extends from (+ d′), indicating dextroversion of the left superior rectus to (— d′), indicating sinistroversion of the left inferior oblique, and means that the one tonicity completely neutralizes the contrary tonicity.



SCHEMA II.

The muscle in one eye and its yoke fellow in the other eye (conjugate muscles) are indicated by the two oblique arrows and the two horizontal arrows immediately below them. The muscles associated in one eye (say, the right eye) are indicated by the perpendicular arrows.

The right eye, in this SCHEMA II, is supposed to have a simple, uncomplicated paralysis of its superior rectus, as is indicated by a zero sign opposite each of the three components of its tonicity. The brackets to the reader's right show the neutralizing components of the remaining muscle tonicities. The horizontal arrows to the reader's right, in this SCHEMA II, show the components of the muscle tensions that are not neutralized, and indicate therefore the paralytic displacement of the patient's right eye. In an exactly similar manner the reader can easily work out from this schema the displacement of the right eye with simple uncomplicated paralysis of any other one of its extrinsic muscles. With the aid of SCHEMA I and SCHEMA II the student can easily study the philosophy, or if it is preferred, the anatomy, physiology, and pathology of a displaced eye in simple, uncomplicated paralysis of single extrinsic ocular muscles. These schematic studies can then be confirmed with a charming exactness by the aid of the writer's simple ophthalmotrope. When the student understands the rationale of ocular displacement in these simple, uncomplicated paralyses, he then has a solid foundation for his studies in the more complicated ocular palsies.

In order to understand the results of the contraction (actual or theoretical) of a single muscle, we must know something about muscle planes. The muscle plane of every individual muscle passes through the centre of the origin of the muscle, the centre of the insertion of the muscle (or, rather the point of tangency of the line of force of the muscle with the eyeball), and the centre of rotation of the eye. Every muscle plane, therefore, cuts the surface of the eyeball in a great circle and bisects the eye. The muscle planes possess such properties that if an individual muscle were able to contract and all the others remain quiescent, the mid point of its insertion would continue to lie in its muscle plane, and every point contained in this plane would move in it without leaving it. When the muscle contracts every point on the surface of the eye outside of the great circle will move in a smaller circle parallel with the great circle. The

greater the distance of a point on the surface of the eyeball from the great circle (muscle plane) the smaller the circle in which it moves until finally the circle is reduced to a point. This point, one on either side of the great circle of the muscle plane, is known as the *pole* of the muscle plane circle. The diameter of the eyeball uniting the two poles is perpendicular to the muscle plane at the centre of rotation of the eye, and constitutes the axis of rotation (the physiological axis) of the particular muscle concerned. In the straightforward primary position of a normal eye the external rectus and the internal rectus can only rotate the eyeball upon the vertical axis, in Listing's plane, passing through the centre of rotation, and thus cause either inward or outward movement of the eye. This is because the centre of origin, the centre of insertion, and the centre of rotation of these two muscles are all in the horizontal plane passing through the centre of rotation of each eye; in other words, their muscle planes are horizontal.

The remaining extrinsic ocular muscles have oblique muscle planes, and of course therefore oblique axes of rotation. Were it possible (with the eyes in the straightforward primary position) for these remaining muscles each at will to contract independently of all the others they would each rotate the eyeball around oblique axes out of Listing's plane. Three components would be noticeable in the tonicity of each of these muscles (easily verifiable by the writer's ophthalmotrope), viz., either (1) elevation or depression, (2) turning towards or away from the nose, and (3) swivel motion towards or away from the nose. The superior and inferior recti are so related to the inferior and superior obliques, anatomically and physiologically, that when the normal eyes are carried from the straightforward primary position to an oblique primary position, or to an oblique secondary position, the eyeball always rotates upon an axis in Listing's plane. The three components of an individual muscle tension are always present (in the straightforward primary position), whether a muscle is acting, in connection with its associate, on an axis in Listing's plane; or, independently, on an axis out of Listing's plane. The component or components of individual muscle tensions are indicated in SCHEMA II, and also as follows, viz.:

Let cephaloversion by the right superior rectus be represented by (+a).
Let cephaloversion by the left inferior oblique be represented by (+a′).
Let cephaloversion by the right inferior oblique be represented by (+b).
Let cephaloversion by the left superior rectus be represented by (+b′).
Let caudoversion by the right inferior rectus be represented by (—a).
Let caudoversion by the left superior oblique be represented by (—a′).
Let caudoversion by the right superior oblique be represented by (—b).
Let caudoversion by the left inferior rectus be represented by (—b′).
Let dextroversion by the right external rectus be represented by (+c).
Let dextroversion by the left internal rectus be represented by (+c′).
Let dextroversion by the right inferior oblique be represented by (+d).
Let dextroversion by the left superior rectus be represented by (+d′).
Let dextroversion by the right superior oblique be represented by (+f).
Let dextroversion by the left inferior rectus be represented by (+f′).
Let sinistroversion by the right internal rectus be represented by (—c).
Let sinistroversion by the left external rectus be represented by (—c′).
Let sinistroversion by the right superior rectus be represented by (—d).
Let sinistroversion by the left inferior oblique be represented by (—d′).
Let sinistroversion by the right inferior rectus be represented by (—f).
Let sinistroversoin by the left superior oblique be represented by (—f′).
Let dextrotorsion by the right inferior oblique be represented by (+h).
Let dextrotorsion by the left superior rectus be represented by (+h′).
Let dextrotorsion by the right inferior rectus be represented by (+m).
Let dextrotorsion by the left superior oblique be represented by (+m′).
Let sinistrotorsion by the right superior rectus be represented by (—h).
Let sinistrotorsion by the left inferior oblique be represented by (—h′).
Let sinistrotorsion by the right superior oblique be represented by (—m).
Let sinistrotorsion by the left inferior rectus be represented by (—m′).

(*To be concluded.*)

THE TREATMENT OF CANCER OF THE RECTUM.

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In all cases that are suitable, malignant neoplasms should be completely extirpated at the earliest opportunity. Radical procedures are contraindicated, however, when the patient's vitality is low, when adjacent structures and organs are involved, and when it is apparent that no additional comfort is to be derived from the operation. While palliative and surgical palliative measures accomplish nothing in effecting a cure, they will be found of value in inoperable cases by prolonging life, lessening the patient's suffering and, in some instances, by retarding the progress of the growth.

In order that a clear understanding may be had of the different methods of handling these cases, the subject will be discussed under three headings, viz.: Palliative, surgical palliative, and radical operative treatment.

In the palliative treatment it is essential to improve the patient's condition by the administration of tonics, nourishing foods, such as milk, concentrated soups, soft boiled eggs, kumyss, malt extracts, and beef juice; fish and meat should be sparingly allowed; coarse vegetables and fruits should not be taken except when properly cooked and then only in small quantities. The most important feature in the palliative treatment of malignant growths of the

rectum is the relief and prevention of obstruction. This is accomplished by diet and the administration of such remedies as olive oil, castor oil, pills, salts, and other drugs which will soften or liquefy the fæces to such an extent that they may pass the constriction. Where fæcal impaction has occurred, medicines are contraindicated. In these cases, by the aid of a catheter or colon tube, copious enemata of water, oils, or glycerin should be frequently administered to soften the fæcal mass sufficiently to pass the point of obstruction. When these measures fail, it becomes necessary to break up the fæcal tumor with the finger, handle of a spoon, or scoop, and then wash it out. Cleanliness and proper hygiene of the bowel must be carried out in these cases to prevent the accumulation and retention of irritating and offensive discharges, secondary to the ulceration, thereby diminishing the danger of infection and the formation of abscess and fistula. The agents most serviceable for this purpose are weak solutions of carbolic acid, bichloride of mercury, potash, permanganate, hydrastis, lysol, silver lactate, creolin, and compound solution of cresol, because of their antiseptic and stimulating qualities.

The problem of relieving pain in cases of malignancy in this region is often a difficult one. Drugs for this purpose should never be administered in the early stages of the disease, because suffering is not intense and can be diminished or relieved by regulating the stools and keeping the bowel clean. In the later stages, when pain has become unbearable, owing to extension of ulceration or pressure of the growth upon the nerves, opium in some form should be given in sufficient doses to alleviate the suffering. By means of the x ray much can be accomplished in diminishing pain, retarding growth of the neoplasm, and in prolonging life, but in the writer's hands it has had no curative effect whatever upon cancers situated within the rectum, and nothing is to be expected from it, except possibly in the treatment of true epithelioma about the anal margin. Chemical caustics and the thermocautery are contraindicated in the treatment of malignant neoplasms in the anorectal region except when the growth is superficial, and in inoperable cases where the tumor can be reached and partially or completely destroyed.

The surgical palliative procedures for the relief of malignant disease in the sigmoid or rectum are, in the order of their importance, colostomy, proctotomy, curettage, and forcible divulsion.

Colostomy should be resorted to in inoperable cases of cancer of the lower bowel in order to relieve or prevent pain, diarrhœa, fæcal impaction, obstruction, and other distressing symptoms. This operation, moreover, obviates the discomfort caused by the fæces passing over, or becoming lodged in the ulcers, and permits the rectum to be thoroughly cleansed and treated by irrigations and applications from both above and below. In the majority of cases, colostomy will prolong life for a considerable time, and it is not uncommon to see these patients rapidly gain in weight.

The writer resorts to the use of the x ray after colostomy, and it appears that patients so treated do better than when the Röntgen rays alone are employed. The artificial anus should be made in the left inguinal region when the growth is situated in the rectum or sigmoid; in the transverse colon, when in the upper sigmoid or descending colon; and in the cæcum or ascending colon, when located higher up the bowel. In most instances when an artificial anus has been established for the relief of intestinal cancer the opening will be permanent. In operable cases, it is sometimes desirable to resort to temporary colostomy, when it is intended at a later date to amputate or resect the bowel, in order to obviate the danger of infection by permitting cleansing of the rectum and preventing the fæces from passing over the field of operation.

Curettage for the relief of obstruction is sometimes justified and may be resorted to with impunity when the neoplasm is within three inches of the anus; but it is exceedingly dangerous in the hands of the inexperienced surgeon when it is situated above the peritoneal attachment.

Proctotomy is useful in selected cases and consists in passing a scalpel through the constriction and freely incising the growth, and sphincter when necessary to insure drainage and increase the lumen of the bowel. For obvious reasons this operation is suitable only in cases where the growth is low down. The same may be said of forcible divulsion, sometimes resorted to in order to increase the calibre of the bowel and relieve or prevent obstruction.

The writer wishes to emphasize the fact that the procedures thus far discussed are not curative, but are palliative measures, and in order to give the patient any hope of a permanent cure it is absolutely necessary to extirpate the neoplasm.

The radical treatment of malignant disease has for its object the extirpation of every vestige of the growth and involved glands, for unless the removal of the disease can be made complete, radical operation is contraindicated and the case is hopeless.

Except when patients have insisted upon the removal of the growth, irrespective of its extent, it has been the writer's custom to resort to extirpation only when the rectum is not bound by it to the adjacent structures and the tumor can be removed without extensive injury to neighboring organs.

Again, it is not advisable to attempt extirpation when there is a metastasis of other organs, when the patient is extremely debilitated, and in those complicated by serious lesions of the heart, lung, kidney, or liver. On the other hand, in the absence of complications above noted, radical operation is imperative in all cases of rectal cancer.

The radical treatment of epithelioma (anal cancer) consists in excising the growth and closing the wound by suture when not extensive, otherwise it may be allowed to heal by granulation. Extirpation of malignant neoplasms situated in the rectum proper or sigmoid is a much more difficult procedure, and, owing to variability of location and extent of growth, one must select the operation best suited to the case in hand. It has been the custom of the writer to classify these operations as follows: Inferior proctectomy, superior proctectomy, vaginal proctectomy, laparoproctectomy, and proctectomy by invagination. He has elsewhere given the history and described the various other operations for removal of cancer of the rectum and sigmoid, together with their modifications.[1]

Owing to the limitation of this paper, the author will confine himself to a discussion of the above-

[1] Gant, *Diseases of the Rectum and Anus*, 1905.

named operations, which, in his opinion, are most suitable under varying conditions, the technic of which embraces many practical points suggested by other operators, together with a few learned from personal experience.

Inferior proctectomy is performed by the writer as follows: The patient is placed in the lithotomy position, with the buttocks projecting over the table. The external parts and rectum are cleansed and a silver catheter is introduced into the bladder. The sphincter is divulsed and the anus everted with forceps. The bowel is now completely divided by a circular incision made immediately above the external sphincter and the end of the rectum freed sufficiently to be grasped with four T-shaped forceps and held by an assistant. To gain the necessary room for dissection the soft parts, including the sphincter back to the tip of the coccyx, are divided

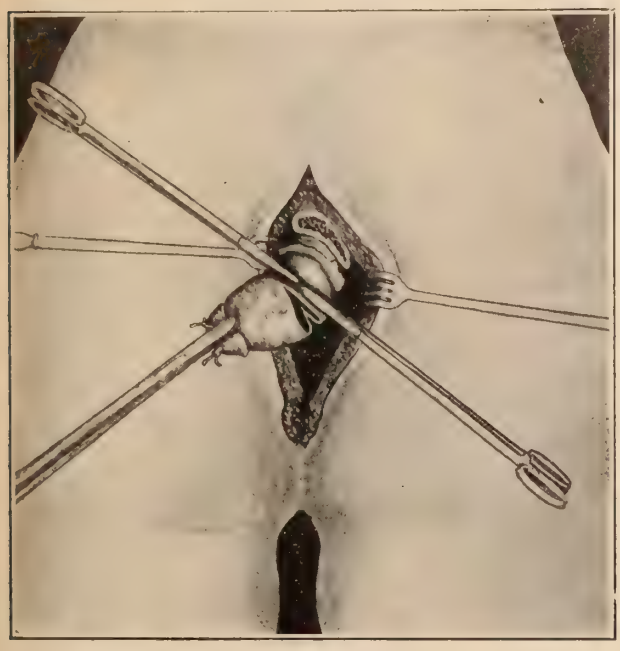

FIG. 1.—Showing division of the sacrum and the diseased part of the rectum freed, ready for amputation.

by one incision. By means of traction forceps the rectum is moved from side to side while it is freed by means of the finger, handle of the knife, or scissors. When the dissections have been carried sufficiently high, pieces of tape are tied around the gut above the tumor, and it is drawn downward as far as possible, the growth removed, and the proximal end is grasped with forceps to prevent retraction. Spurting vessels are ligated and oozing arrested by packing the wound with gauze wrung out of hot water. If possible, the proximal end is now united to the distal by interrupted sutures passed through the entire thickness of the gut, or one may resort to Hochenogg's method of denuding the mucosa of the anal segment, pulling the gut down through the latter and suturing it to the skin. When feasible, either of these methods preserves the sphincter muscle and thereby averts incontinence. The ends of the divided sphincter muscle are approximated by means of buried catgut sutures, and a gauze drain is left in the posterior wound, which is then closed. Dressings are now applied and held in place by a properly adjusted T binder.

When the growth is sufficiently low down to involve the sphincter, the circular incision is made through the skin at least half an inch from the anal margin. The rectum is isolated, the diseased portion amputated, and the end of the bowel is drawn down and sutured to the skin. Inferior proctectomy is performed only when the growth is situated in the lower three or four inches of the rectum. For this reason the peritonæum is rarely injured. Should such an accident occur, however, the life of the patient is not greatly endangered, provided the peritoneal wound is closed immediately, or the cavity drained with gauze.

In superior proctectomy it is sufficient in some cases to remove only the coccyx, in others a part of the sacrum, and in still others an osteointegumentary flap is formed and replaced after a removal of the growth. The technics of the operation is as follows: The patient is placed upon a low table upon his left side, with his legs flexed. The outer parts are cleansed, the rectum irrigated and gauze inserted in the rectum, or the anus is sutured to prevent soiling of the wound by the fæces. An incision is made just external to and following the curve of the right or left border of the sacrum, and continued downward to the tip of the coccyx. From this point it is carried downward in the median line to the border of the sphincter muscle. A second incision is then made through the soft parts just below the lower margin of the third sacral foramina, extending from the first cut across the sacrum and a little beyond the right or left edge of the bone. The skin flap thus formed is dissected up from bone, unless an osteointegumentary flap is to be made, and turned back, exposing the bone. The tip of the coccyx is freed, grasped and lifted up with spiked forceps and the lateral attachments of the sacrum and coccyx are rapidly divided up to the transverse incision. The soft parts are dissected off the anterior surface of the coccyx and lower portion of the sacrum, care being taken to avoid injury to the sacral vessels. The lower part of the sacrum and coccyx are now removed by dividing the sacrum below the level of the third sacral foramina (see Fig. 1). The exposed rectum is rapidly separated laterally, but more care is necessary to free it from its anterior attachments on account of the levator ani muscle, and its close proximity to the vagina, urethra, and prostate. The rectum is then dissected from its sacral connections to a safe distance above the growth, which is determined by rolling the bowel between the fingers. Extreme care must be taken not to injure the vessels in order to avoid hæmorrhage and to preserve the nutrition of the bowel. Gauze is placed under the rectum and the diseased portion is resected between forceps or ligatures of tape, placed above and below the growth, the incisions being made at least half an inch from the upper and lower limits of the neoplasm. The proximal end of the bowel is then united to the distal segment by circular enterorraphy (see Fig. 2). When the growth has been removed by amputation, and it is practical the bowel should be sutured to the skin about the anus. When this is impossible, because of tension, it should be carried backward and a sacral anus established in the median line at the upper angle of the wound (see Fig. 3).

In order to lessen the degree of incontinence in

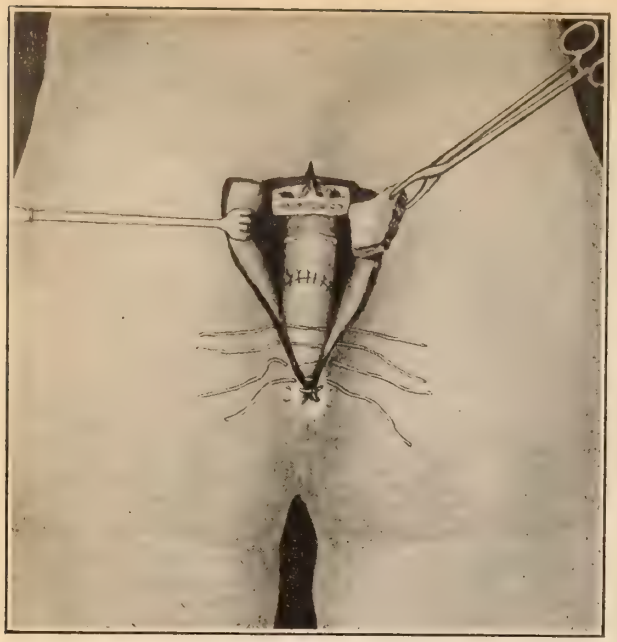

FIG. 2.—Showing osteointegumentary flap and suture line after the growth has been removed.

these cases the bowel may be twisted, in the manner suggested by Gersuny, before it is attached to the skin. In suitable cases the sphincter muscle should be left, the lower half inch of the rectum denuded of its mucosa and the bowel brought down and stitched to the anus, thereby avoiding incontinence, according to the method of Hochenegg.

Bleeding diminishes as the operation proceeds, and but few vessels require to be ligated except those cut when the bowel is divided. Troublesome oozing can be controlled by gauze sponges wrung out of hot water and pressed firmly into the wound. When possible, the tumor should be removed without opening the peritoneal cavity. In most cases, however, owing to the extent of the disease, the peritonæum must be divided laterally or completely around in order to liberate the bowel. After the anastomosis has been completed, the peritonæum should be stitched to the serous coat of the rectum, or the cavity may be drained. The wound is irrigated and gauze placed about the bowel to insure drainage. The skin flap is replaced and sutured, allowing space for drains. The rectum is then loosely packed with gauze and dressings are applied to the external wound and secured with a T bandage.

FIG. 3.—Showing closure of the wound and the formation of a sacral anus.

When it is desirable to form an osteointegumentary flap the same preliminary incisions are made. The attachments are severed on the right or left side

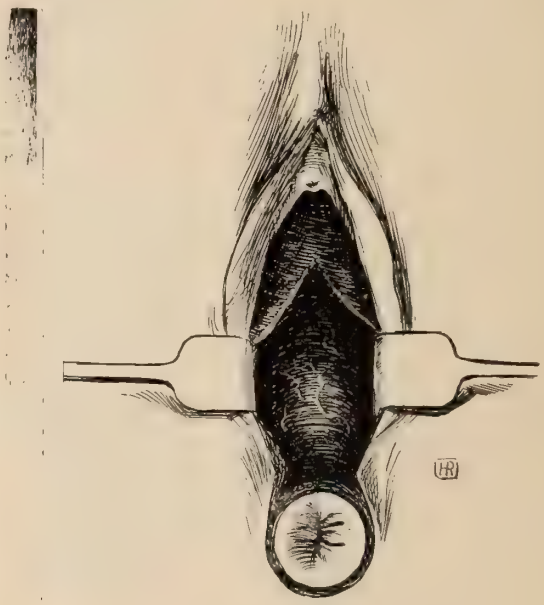

FIG. 4.—Showing preliminary incisions.

of the sacrum and coccyx up to the transverse skin incision. The sacrum is now divided, the bone and attached soft parts turned to the right or left, and held there until the growth has been extirpated (see Fig. 2), when it is restored, sutured, and a drain inserted when necessary.

Vaginal proctectomy.—When the neoplasm is located within three to five inches above the anus in the female, it will be found advantageous to amputate or resect the rectum by the vaginal route. By this procedure the operation can be quickly and easily performed, bony mutilation and destruction of pelvic support are avoided, and the mortality following this method of extirpation is exceedingly small. In this operation the first step in the technics consists in dividing the posterior vaginal wall, perinæum, and sphincter muscle (see Fig. 4) in order to permit mobility of the bowel while it is being freed from its attachments (see Fig. 5). The concluding part of the operation consists in approximating the severed edges of the vaginal wall, perinæum and sphincter muscle by means of closely adjusted deep and superficial sutures of chromicized and plain catgut (see Fig. 6). The intermediate steps in the

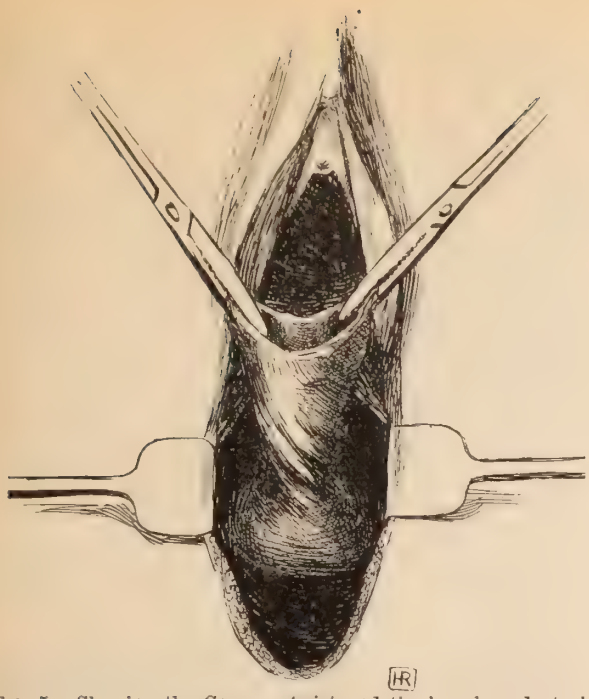

FIG. 5.—Showing the Gersuny twist and the bowel ready to be sutured at the anal site.

technics of vaginal protectomy are so similar to those previously mentioned in describing the operations of superior and inferior protectomy that it is unnecessary to give them further consideration.

Laparoproctectomy is performed when the growth is so situated that it cannot be extirpated by either of the methods thus far described, and neither can it be removed by approaching it through the abdomen. In other words, a combined operation is necessary. The sigmoid is exposed by means of an ample abdominal incision and divided between two ligatures placed at a safe distance from the growth. The lower part of the sigmoid and upper rectum are freed by ligating and dividing the mesosigmoid, mesorectum, and finally by severing the peritonæum from its attachment to the bowel. The rectum is now freed by means of inferior, superior, or vaginal proctectomy and removed from below or through the abdominal incision. An artificial anus is then established by suturing the proximal end of the sigmoid to the skin. When possible the neoplasm should be resected and an end to end anastomosis made, since this permits closure of the wound above and below. In exceptional cases, where the mesentery is long, the proximal end of the sigmoid can be pulled down, and sutured to the anus after methods already described.

Proctectomy by invagination is indicated when there are no adhesions, and when the diseased bowel can, by means of invagination, be drawn down and out through the anus for several inches, permitting the growth to be extirpated. This the writer has been able to do on three different occasions and the neoplasms have been extirpated by means of elliptical and circular incisions.

Coloproctostomy.—When the neoplasm is situated in the upper rectum or lower sigmoid it is advantageous in rare instances (where extirpation is impossible) to divide the bowel above it, suture the distal end and draw down the proximal and make an anastomosis between it and the rectum at a point below the growth. This operation was first performed by Howard Kelly, and has an obvious advantage over colostomy which was formerly resorted to exclusively in this class of cases.

Complications and sequelæ are of common occurrence following extirpation of a part or all of the lower bowel. The sequelæ most frequently encountered are: shock, peritonitis, extensive suppuration, injury to adjacent organs or the nerves, suppression of urine, exhaustion, infection, hæmorrhage, fistula, stricture, incontinence, gangrene, pelvic deformity, and procidentia.

The mortality in the hands of the expert surgeon is, approximately, 7½ per cent. for inferior and 21 per cent. for superior proctectomy.

Results.—When extirpation is complete, suffering is entirely relieved or materially diminished, life is extended for months or years, and frequently a cure is effected. The proportion of cures following resection and amputation of the rectum for the relief of malignant disease is about 16 per cent. In un-

FIG. 6.—Showing the appearance of the wound after completion of the operation.

favorable cases recurrence may take place earlier or at some remote date, either at the site of the original neoplasm or in some distant organ.

In conclusion the writer would state that after a personal study of more than 200 cases of rectal cancer treated by palliative, surgical palliative procedures, and radical operation, he unhesitatingly advises complete extirpation of the growth when possible, because this is the only procedure which tends to relieve suffering, and offers to the patient a chance of permanent recovery from his affliction.

43 WEST FIFTY-SECOND STREET.

A CASE OF VESICULAR KERATITIS WITH A FILAMENTOUS FORMATION OF THE DETACHED EPITHELIUM.*

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A young Irish woman of twenty-six years of age came to the Wills Hospital on January 9, 1906, stating that she had been seized with pain suddenly in her right eye several days before. The pain had persisted, and it was great even at the time of the examination. The girl feared she had splashed ammonia water in her eye. She declared that no one had attempted to remove from it any suspected foreign body, nor had she had treatment for the condition complained of.

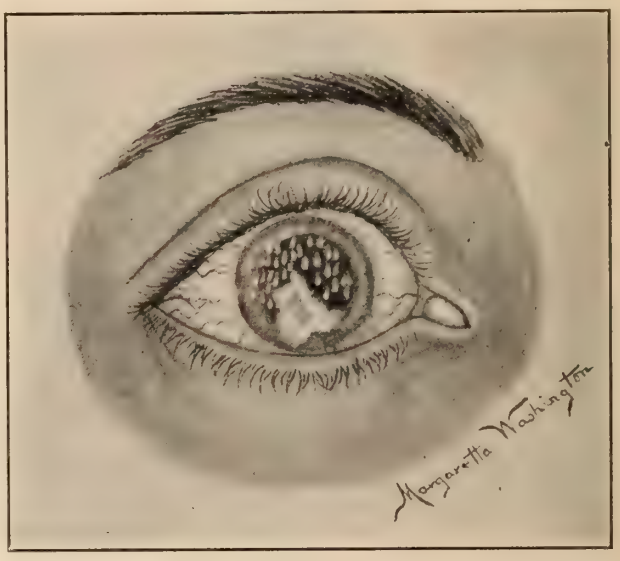
The appearance of this eye resembled that seen in the case of workmen on whose corneas flying foreign bodies have lodged, and who have been under the tender ministrations of their fellows, who, as Dr. W. F. Norris used to say, "had removed the eye from the foreign body." The globe was greatly injected and somewhat chemosed, while the cornea was denuded of epithelium over nearly its entire surface. The edge of the ring of epithelium remaining was irregularly dentated. The substance of the cornea was not affected specifically, except by a diffuse œdema; neither was the iris, for the pupillary reactions were preserved. The left eye was perfectly healthy.

I considered the condition to have been caused by a traumatism. The eye was carefully cleansed; the singularly insensitive cornea was anointed with iodoform ointment, and a light patch bandage was applied over the closed lids. Four days later, the symptoms remaining unchanged, an ointment containing atropine and quinine was used on the cornea. The lids were sealed with strips of court plaster, and a large compress was adjusted. The girl then went to visit her sister, who was employed as a domestic in the house of a physician not far from the hospital. The next day this physician telephoned to me that the patient had been delirious for twelve hours, and he feared she had been poisoned by the medicaments used in the eye. The young woman came to my office on the following day, but no changes had taken place in the eye. Again simple cleansing lotions were used, the lids were sealed, and the patient was sent to her own home. Her mistress, by whom she was employed as a cook, desired to withdraw her from hospital care, and requested me to visit her, because she had become too weak to go out. Accordingly, I visited the patient late in the afternoon. She was in bed, feverish, with a coated tongue, and in a decided general malaise. After daily visits to her she was able to come to my office again in five days. The corneal lesions remained unchanged. Carbolic acid was then applied to the edges of the epithelium, and this time a firm compressive bandage was put on. A bitter acid tonic mixture was also prescribed.

On the next day it was noticed that the epithelium had increased with singular rapidity. At about the centre of the denuded area there was a small spot of exudation infiltrating the lamina of the cornea, and, more superficially, at a short distance above this dense globular deposit, were four areas, in shape like distant flying gulls, very much resembling the tracks of dendritic keratitis. These new formations, which were confined to the substance of the cornea, were sharply outlined by fluorescein stain. In addition to the other mixture, one of the bichloride of mercury and the syrup of hydriodic acid was ordered.

In two days the epithelium was almost entirely restored. The general inflammation had greatly subsided, while the cornea was becoming vascularized. At the end of a week only a small erosion remained; the surrounding surface was moderately glistening and the entire cornea was more sensitive to manipulations. A solution of taropine and ethyl morphine hydrochloride (dionin) was then ordered to be used daily.

On February 8th, after an absence of one week, the patient returned in great discomfort. The cornea was again denuded, while the surrounding recently intact



surface was studded with tiny clear vesicles and with what appeared to be the remains of ruptured vesicles. Late in the evening the vesicles appeared in greater number. The cornea was again quite insensitive, and there was a slight pericorneal injection. Before a firm bandage was again applied over the lids an ointment of aristol was smeared over the surface of the cornea. This state continued unchanged for eleven days, when, on February 19, together with greater pericorneal injection, there was an eruption of over thirty vesicles.

These vesicles were scattered irregularly over the cornea, being discrete in their arrangement and of equal size, approximating one millimetre in diameter and resembled seed pearls. They were not perfectly translucent. On a superficial examination they reminded one of the eruption of sudamina that one sees occasionally on the trunk of a man who has taken violent exercise, or on others in the course of the continued fevers. They arose clearly above the substance of the cornea, and were demonstrably of epithelial formation only, as there were no signs of a ring of infiltration surrounding their bases.

Their course was rapid, for, within forty-eight hours, the vesicles burst at their bases, except at the upper sixth; here they remained attached to the epithelium

* Read before the Section in Ophthalmology of the College of Physicians, Philadelphia, on Tuesday, April 17, 1906.

by a somewhat broad pedicle. Then, from the mechanical action of the globe and the lids, the partially exfoliated membrane was molded into elongated and rolled pellicles, which gave a shaggy appearance to the surface of the cornea. Miss Washington's sketch gives an accurate idea of the distribution and the size, as well as the shape, of these desquamated flakes, yet the picture fails to convey the exact impression of the structures and their color as they hung intact from the cornea. I could liken them to nothing else than the appearance of the ova of pediculi glued to a hair shaft.

With fine forceps six of these flakes were stripped off. They were too cornified to be teased out flat, and, lest they should be lacerated, they were stained at once in a solution of gentian violet. Under the microscope they appeared to be squamous epithelial cells simply, glued together and rolled into convoluted cones. In one or two specimens there appeared to be a sort of stem running through them, but on closer study these stems proved to be formed by a close folding over of the edge of the flake. The cells were undergoing mucoid degeneration and contained granular débris.

The insensitiveness of the cornea was intense, for the flakes were torn from it without there being the slightest evidence of pain. After the flakes had been cast off the surface of the cornea appeared to be pitted, as though one had gone over it, pressing the point of a fine probe into it. The underlying cornea was not at all infiltrated.

There were repeated crops every two or three days; the cycle of their evolution and involution appeared to be most rapid when the pure tincture of iodine was applied to them.

On February 20th Dr. de Schweinitz saw the patient with me, and he recommended that the girl should be kept in bed. The next day Miss Washington made the accompanying sketch. Immediately after this was made I swept the cornea clear with a swab moistened with undiluted tincture of iodine, and no more vesicles have since appeared.

To Dr. Schwenk I am indebted for the privilege of placing the patient in the wards of the Wills Hospital, as well as for the opportunity of managing the case from the first. After her admission to the hospital, on February 22nd, she was kept in bed for ten days. The collyrium of atropine and ethyl morphine hydrochlorate (dionin) was continued, and the eye was covered with only a light bandage. A saturated solution of sodium salicylate, which had been prescribed three days before, was administered in twenty drop doses thrice daily after meals.

The course from then on was one of steady improvement. In five days the large area had contracted greatly, and was becoming more and more vascular, while the surrounding surface regained a healthy smoothness and lustre. After two weeks' stay in hospital the patient was discharged on March 6th, just two months after the first attack. On March 13th the epithelium was entirely restored, and, except for the large and very vascular nebula which remained in the lower portion, the cornea was clear and sensitive. On March 29th the vision was equal to $^{5}/_{7\cdot5}$, as the transparency of the entire cornea was complete.

I have not seen a case of filamentous keratitis. Nothwithstanding my lack of experience, in the clinical study of that affection, I do not consider the case here reported to be an instance of it.

The features of my case are as follows: A young woman of the nervous lymphatic type, received a slight injury to the cornea of one eye, although there was much uncertainty as to the exact nature of the occurrence of it. It is presumed that the supposed injury gave rise to the formation of a large bleb composed solely of the epithelium of the cornea. In a short time the bleb burst and exposed the true cornea; and, for some distance beyond what might be considered to be the base of the bleb, the epithelium was loosened from the underlying cornea. It was not until several days after the bursting of the vesicle that any unhealthy changes in the appearance of the lamina were manifested. In addition to a faint, diffused œdema, an irregular tract of infiltration was noticed. There was no superficial necrosis, neither was the endothelial membrane visibly affected. The iris maintained its healthy reactions.

For many days it was impossible to reapply the loosened membrane and to promote the covering of the denuded area. When at last this began to be favorable, the surface of the cornea became studded with tiny vesicles. In the course of a day or two, these vesicles burst, and instead of the walls of them being cast off from the cornea, they remained attached to it by single pedicles. From the action of the globe and the eyelids, these epithelial remains were moulded into scrolls, or filaments, which were ultimately cast off. No signs of infection of the true cornea were observed during the evolution and involution of these vesicles. The eruption of vesicles was repeated several times, while their course did not vary for several weeks.

Various plans of treatment were pursued without avail until after all of the filaments had been scraped off and the pure tincture of iodine applied to the surface of the cornea. The patient was then confined to her bed for two weeks. A cure has resulted. The cornea has a healthy appearance, and the vision is only slightly reduced. The exfoliated fragments of the membrane were composed only of degenerated epithelial cells.

I do not believe it possible for an injury to the cornea to cause so great a loss of the epithelium without there being also other signs of greater destruction of corneal tissue than were seen in this eye.

This case appears to me to be one of neuropathic disease of the cornea, associated with a lithemic or rheumatic diathesis. I have conceived it to be somewhat of the order of herpes, involving at first a single locality. Because of a great loss of the protecting epithelium, there was excited a general œdema of the cornea. The loosened epithelium hindered the steady onward flow of the serous fluid so that it escaped from the lamina, and was held beneath the epithelium in the form of droplets.

235 South Thirteenth Street.

THE PRESENT STATUS OF THE TREATMENT OF APPENDICITIS: THE FAMILY PHYSICIAN'S RESPONSIBILITY.*

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It is probable that no paper recently published in America on a surgical subject, and certainly not on the subject under consideration, has produced such a profound and lasting impression upon the medical profession, and through the medical profession upon the minds of the general public, as Ochsner's orig-

* Read before the City and County Medical Society of Portland, Ore., December 6, 1905.

inal paper advocating the *Rest and Starvation Treatment of Appendicitis.* The paper has been much misunderstood and variously interpreted. The gist of Ochsner's paper was that certain cases of appendicitis in which the patient was not seen until the appendix had ruptured, should not be operated upon until the inflammatory process had become localized and the infected area surrounded by a wall. To accomplish this purpose he urged the use of every means to stop peristaltic action, viz., the use of no cathartics, no food by mouth, stomach washing, rectal feeding, and when necessary, opiates. He incidentally suggested that this state or condition when it developed at all, usually developed from thirty-six hours to five days after the onset of the disease. It was a masterly paper, a splendid presentation of excellent ideas, and should have done much good. It has certainly created a lasting turmoil in the minds of the profession and people, so that time and progress alone can tell the amount of good and evil it may finally accomplish. It may be well to state here that while this treatment is simply an improvement, by some modifications, on the oldest treatment known for peritonitis, it was put together and described by Ochsner, and is commonly known to the profession as the Ochsner treatment. We will, therefore, refer to it as such in this paper.

In my association with the family physicians in different parts of the country, I have been impressed with the wide difference of interpretation of what constitutes the modern approved method of dealing with appendicitis, most of them taking the Ochsner treatment as a basis for argument. Some believe that it is best under no circumstances to operate during an acute attack of appendicitis. They have interpreted the Ochsner treatment to mean this. Others have interpreted the Ochsner treatment and the Ochsner idea literally and without elasticity as regards the time to operate. They believe that we should operate provided we can get the patient within thirty-six hours after the attack begins, but should not operate thirty-seven hours afterward. Others who are more conservative, interpret it more nearly as Ochsner intended it, and are governed by a condition rather than a fixed hour as an indication for nonoperative treatment. To another radical class belong those who say, operate as soon as the diagnosis is made without regard to the nature of the case, surroundings of the patient, or qualifications of the operator. These men instruct the people that appendicitis means certain death unless immediate operation is resorted to. They thus distort the other and radical side of the subject, and bring discredit on the profession, for it is well known that not more than fifteen per cent. die if left without treatment of any kind. This same difference of opinion prevails as to the mortality of appendicitis All of these opinions and differences are impressed upon the public mind, and have created a general muddling which retards progress. There is, in reality, little difference in the minds of the leading surgeons as to the treatment of appendicitis, but these little differences have been so magnified by surgeons themselves that they present the appearance of being almost directly opposed; therefore, our surgeons are largely to blame for the present status of things, because in their discussions they befog the essentials with verbose treatises on technicalities. The family physician is too busy to look up these technical differences and the various circumstances surrounding them, so that after glancing over surgical articles on the subject, he becomes undecided as to best methods, and is again thrown back to his own experience as a guide. The family physician is the only medium by which the people themselves can be taught. The most essential point, therefore, is that the surgeon give to the physician more unvarnished facts and less of individual unsubstantiated opinion.

This paper is largely statistical. I recognize that statistics are only of relative value and present great variation, depending upon veracity, the standpoint from which they are made, the surrounding circumstances, and the vastness or comprehensiveness of the statistics. The selfishness of human nature makes it impossible for statistics to show worse than the facts. The tendency is to make them show better, and this tendency is so great in some cases as to border on falsification. Some in dealing with and reporting their bad results are tempted to make frequent use of Rip Van Winkle's favorite phrase, "I won't count this time." The well known characteristic of our race to take up fads, causes us to take up a subject, and make all other branches merge into and become a part of that subject. In this way statistics are biased. C. H. Mayo says that statistics are valuable chiefly to the man making them, for he alone knows the surrounding circumstances.

Public sentiment and the sentiment of the profession assumes a peculiar attitude towards certain procedures in certain communities and thus dictate and modify the surroundings under which the procedure is carried out. The greatest factor in the variation of statistics is to be found in the extent of the statistics. The writer knew an early operator for appendicitis who operated upon twenty cases with eighteen deaths. Dennis mentions an instance of nineteen operations with nineteen deaths. In the writer's experience of approximately three hundred cases in eight years, he has had three different series of more than forty consecutive operations for appendicitis with no deaths. After one of these series of successes, three consecutive deaths occurred within a week, while at another time, two in a month. If an insurance company should insure three healthy men for a given sum, and all should die within a year, and the company should base its statistics on these cases, insurance premiums would be high. On the other hand, if it should insure three men for a given amount, and they should live sixty years each, and if the company should base its statistics on these cases, the premium would be low. Instead of taking either of these groups, the company adds these along with many others and divides by the number of insured, and thus gets an average which is accurate enough for business calculation. If we divide the number two by seven, making a decimal, and decide to stop at one figure, we say that two is two tenths of seven, which is a very inaccurate statement. If we carry this decimal on still another point, we find that two is twenty-eight hundredths of seven, which is more accurate. If we carry it on still another point, it will be still more accurate, and while it will never become mathematically accurate, by carrying it out, it will become accurate enough for all practical purposes. So it is with the law of average. Isolated statistics may be absolutely misleading, but

the larger the accumulation of statistics, the more nearly is accuracy obtained. We have, therefore, in preparation of this paper, attempted to get as large a volume of reliable statistics as possible. We wrote every hospital in the United States having a capacity of more than fifty beds, for printed hospital reports for either 1903 or 1904, and received nearly three hundred reports. Of these, one hundred and seventy-nine hospitals had their reports so classified that accurate mortality statistics could be calculated. All those not having such statistics were discarded and not included in this paper.

Table 1 gives general mortality statistics of all cases of appendicitis treated in the hundred and seventy-nine hospitals in one year. In column 1, beginning at the left, we have numbered five classes of hospitals. Column 2 gives the number of cases of appendicitis treated in each class during one year. Column 3 gives the number of hospitals belonging in that class. Column 4 gives the number of cases treated in those hospitals. Column 5 gives the total number of doctors on the surgical staffs of each class of hospitals. Column 6 gives the average number of cases treated by each member of the staffs of the different classes of hospitals. Column 7 gives the number of deaths. Column 8 gives the percentage and mortality in each class.

TABLE No. 1.

Class.	No. of cases treated in each hospital in one year.	No. of hospitals in each class.	No. of cases treated.	Total No. of surgical staff doctors.	Average No. of cases per staff doctor.	No. of deaths.	Mortality per cent.
I.	Over 100	41	7720	589	13	498	6.3
II.	From 75 to 100	17	1457	207	7	98	6.7
III.	From 50 to 75	31	1927	308	6	136	7.1
IV.	From 25 to 50	42	1613	704	2 3-7	170	10.5
V.	From 1 to 25	48	728	623	1 1-6	100	13.7
	Total	179	13,445	2431	6.5	992	7.4

In studying this table, the features worthy of mention are, first, the average death rate of appendicitis treated in hospitals is much greater than has been estimated, being seven and four tenths per cent. instead of four per cent., as estimated by Dennis. (It may be that Dennis refers to his personal statistics instead of attempting to make an average.) Second, the evident fact that the mortality is less in the hospitals in which each staff doctor has the larger number of cases, and the gradual increase in death rate as the average experience of the doctor diminishes, until the enormous death rate of thirteen and seven tenths per cent. is reached, which is certainly no better than medical treatment.

Table No. 2 shows the different headings under which various hospitals have classified their cases, the number of hospitals which have classified under each head, number of cases treated, number of deaths and mortality per cent.

TABLE No. 2.

Headings used.	No. of hos. using it.	No. of cases.	No. of deaths.	Mortality per cent.
Acute	75	3168	166	5.3
Suppurative	53	724	159	17.2
Tuberculous	10	35	8	20.3
Gangrenous	39	228	60	26.
Recurrent	35	529	19	3.53
Abscess	50	386	61	15.8
General peritonitis	27	132	83	62.88
Adhesions	9	40	3	7.5
Perforations	19	71	24	33.8
Complications	15	82	8	9.75
Totals		5605	591	10.5

It will be seen at once from table No. 2 that any attempt to classify cases under various headings, is at the best, only arbitrary, as it is very evident that one would classify a certain case suppurative, and another would classify the same case gangrenous, another, abscess, another perforation. It will also be noticed that only seventy-five out of one hundred and seventy-nine classify cases as acute, only thirty-five as recurrent, while it is almost certain that every hospital in this list had cases that were recurrent and others that were acute. Under the head of complications, some would class general peritonitis, others would refer to pneumonia, uræmia, etc. This table is given for the purpose of showing that inasmuch as these classifications as to varieties are arbitrary and capable of any kind of an interpretation, such classifications are of value only to the operator himself who knows just what condition he places under a given classification. It is not only of no value to the outsider but is likely to be misleading. Therefore, it would seem that the general practitioner in considering this subject, would do better to recognize but two classes, the acute or septic accompanied by fever, pain and evidences of sepsis, and chronic or nonseptic. It is probable that practically all cases of appendicitis are chronic before they are acute. Abbe's studies indicated that a patient probably had the basic lesion of appendicitis long before symptoms were noticeable in the form of a diseased mucosa or its resultant stricture, and that the acute attack comes on only with infection. Therefore, the various classifications really refer to degree rather than kind so that it would be well to discard a good deal of meaningless pathological nomenclature in our practical work and general discussions.

Table No. 3 represents the mortality of four extensive operators whose statistics are at hand, and who represent the affirmative and negative side of the debate concerning the value of the Ochsner treatment.

TABLE No. 3.

Name.	Cases.	Deaths.	Mortality per cent.
Ochsner (3 years) 1902-3-4	1000	22	2.2
Mayo Brothers (2 years)—1903	404	8	1.9
—1904	536	5	.9
Deaver (1 year)—1903	566	28	5.
Richardson (in large series prior to 1905)		..	5.

This table tends to show that men of the same ability over the country, under the same circumstances and conditions, are getting, to a certain extent, the same results, and that the results by these men of vaster experience than the average hospital surgeon, show a still less death rate. Second and more important, this table is introduced for the purpose of calling attention to the apparent difference between the results of those who advocate the "rest and starvation treatment," and those who advocate that all cases of appendicitis are surgical and therefore, operative. It is a well known fact that the Mayo brothers and Ochsner are avowed advocates of the "rest and starvation" treatment in certain cases of acute appendicitis, while Deaver and Richardson take the ground that appendicitis is always a surgical disease. It will be noticed that the advocates of the first principles have a death rate approximating two per cent., while those advocating the second principles have a death rate of five per cent., more than twice as great.

The question which arises is, inasmuch as these operators are of equal surgical skill and reputation, on what other grounds than the superiority of the Ochsner treatment can this discrepancy be explained. It would seem that it might be explained on the grounds that the doctors who refer their cases to Ochsner and the Mayo brothers, being well acquainted with the ideas of these surgeons and many times not being able to make a positive diagnosis until the third or fourth day of the attack, keep many of their patients with the idea of tiding them over for an interval operation. Thus, many of these patients must necessarily die in the hands of the general practitioner, instead of the surgeon, for the family physician treats the case during the most dangerous stage. The same cases in the hands of physicians believing in Deaver and Richardson and knowing their ideas, would have been sent in immediately regardless of the stage, and some of them must necessarily die in the hands of the surgeon relieving the physician of the responsibility, for here the surgeon has the case at the most dangerous period. Likewise we might explain the greater mortality of Ochsner in comparison with the Mayo brothers; because, he being in a large city, it seems would fall heir to a larger number of acute, fulminating cases than would the Mayo brothers, who operate in a small town, and whose cases must come from long distances; but probably the chief reason is that Ochsner's statistics extend a year further back, during which year the Mayo brothers also had a larger mortality. It seems that it is not fair, nor does it represent any scientific truth, to compare the results of those who advocate the Ochsner treatment with those who do not. If the surgeon presumes to instruct the family physician and the public as to the proper treatment of appendicitis, it would be well to leave out the discussion of this phase of the subject, unless we had more positive proof that one view is superior to the other. Here we may advise the physician that as the case is admittedly a surgical case, if he expects to refer it to a surgeon, he should have the surgeon in consultation, and abide by his decision and treatment from the time the disease is recognized. Until the surgeon arrives, no better course can be followed than to use the Ochsner treatment.

At this point I wish to indulge in some theoretical speculation (the scientific value of which is admittedly questionable) for the purpose of approximating the prevalence of appendicitis and the relative results of medical and surgical treatment. We shall use the foregoing statistics and following table of Chicago vital statistics of appendicitis extending from before the surgical treatment of this disease was begun to any extent, to 1904 (a period of fourteen years) for the basis of our speculation.

The table is compiled by Channing W. Barrett. All cases reported in years 1890 and 1891 were under the head of typhlitis and perityphlitis. During the next year, appendicitis began to appear in the statistics, but it was not until very recent years that the term typhlitis disappeared from the list. This table of itself seems to indicate that from the time surgery was instituted in 1892 for the treatment of appendicitis, a decided increase in the death rate was noticeable. It then began to decrease and has steadily declined.

TABLE No. 4.

BARRETT'S CHICAGO VITAL STATISTICS.

Year.	Deaths.	Year.	Deaths.
1890	236	1898	277
1891	323	1899	361
1892	438	1900	320
1893	545	1901	338
1894	456	1902	332
1895	456	1903	309
1896	369	1904	272
1897	368		

Table No. 5 which follows, is an attempt to calculate various features which cannot be obtained by statistics direct.

TABLE No. 5.

Population of Chicago in 1890	1,099,000
Deaths during 1890 from typhlitis and other diseases now known to be appendicitis	236
Death rate from appendicitis per 100,000	21
Estimated population of Chicago, 1904	2,272,000
Deaths during 1904 from appendicitis	272
Death rate from appendicitis per 100,000 in 1904	12
Reduction in death rate since the advent of surgery, per cent	43
Dennis estimates mortality from appendicitis by medical treatment, per cent	16

G. N. Best, a medical man, estimates mortality of appendicitis by medical treatment at from ten to fifteen per cent. These are are about average estimates made by medical and surgical men as to the death rate of appendicitis by medical treatment.

Average hospital or surgical death rate according to our statistics, 0.074.

The number of deaths from appendicitis in Chicago during 1904, 272, divided by the average death rate according to our statistics, 0.074, would give the number of appendicitis cases in Chicago in one year. Thus $272 \div 0.074 = 3675$. Number of appendicitis cases divided by the population will give proportion of people of Chicago having appendicitis in one year. Thus: $3675 \div 2{,}272{,}000 = 0.0016$, or about one in every 625 inhabitants each year.

The estimated population of the United States (84,000,000) multiplied by the percentage (0.0016) of appendicitis cases would give 134,400 cases of appendicitis in the United States in one year, which would make about one case of appendicitis for each practitioner of medicine. It has been estimated that the average income of doctors in this United States is $1,200.00 per annum at general practice. If the average doctor (earning $1,200.00 per annum) sees his average proportion of appendicitis (one case), the doctor who earns $6,000.00 per annum at general practice would treat five cases of appendicitis per annum, which I believe is about true, by observation.

It is generally conceded by all advanced thinkers, both medical and surgical, that appendicitis is essentially a surgical disease, and that medical treatment, strictly speaking, is no better than no treatment, and yet, this calculation, which is based upon previous statistics, shows that the death rate of appendicitis under average surgical treatment at the present time, is only forty-three per cent. better than medical or no treatment. For example, estimating that each doctor on an average, sees one case of appendicitis in a year, and each man operates upon his own case, it is probable that surgery would be of no advantage in the treatment of this disease. The best surgical treatment obtainable under the present condition gives a little less than one fourth of the death rate of medical or no treatment.

In order to illustrate the class of cases that are now being lost from appendicitis, I have obtained by personal letter, short detailed reports of the fatal

cases in series of operations at this period, in the practice of Dr. John B. Murphy and Dr. John C. Munro, whose reputation place them in the class with the four surgeons previously mentioned. These surgeons are practically with Deaver and Richardson, as regards the time for operation, in that they believe the Ochsner treatment is rarely indicated in the presence of competent surgeons. These operators are of the opinion that the Ochsner treatment would have failed in any of the cases which they lost.

Report of cases treated by Dr. J. B. Murphy at the Mercy Hospital from July 23, 1903, to January 1, 1905. Total number of cases, one hundred and forty; deaths, 5; proportion of deaths, 3.6 per cent. Résumé and cause of death in the five fatal cases.

Case XXXV.—Clinical and pathological diagnosis: Acute, gangrenous appendicitis, and general peritonitis. Pathology: Free odorous fluid in the abdomen, appendix adherent to self and caput coli, length three inches, walls œdematous, congestion, gangrenous in places, abdominal wall œdematous. Temperature and pulse ran high after the operation, respiration very accelerated and dispnœic; no peritoneal septic symptoms after operation; contracted lobar pneumonia. Patient died of pneumonia six days afterward.

Case LI.—Clinical and pathological diagnosis: Chronic appendicitis, hepatic abscess and gallbladder adhesions. Pathology: Appendix chronically inflamed, gallbladder adherent to duodenum and pylorus, abscess of right lobe of liver is of the size of a large orange, extending to both surfaces. Patient operated upon February 15, 1904: Four ounces of pus was extracted through the abdominal incision on February 1st. Patient died two weeks after the operation from hepatic sepsis.

Case LXII.—Clinical and pathological diagnosis: Periappendical abscess and gangrenous appendicitis. Pathology: Two abscesses walled off by adhesions, gangrenous appendix, fæcal concretion of very large size found three fourths of an inch from the base of appendix. Patient died after twenty-four hours from sapræmia.

Case LXXXIV.—Clinical and pathological diagnosis: Acute gangrenous appendicitis. Pathology: Abdominal wall very thick, appendix walls deeply congested and covered with plastic exudate. Mucosa gangrenous through whole length. Free fluid in abdominal cavity. Maximum temperature after operation, 102.4°—the next day, 100°. Normal temperature in the following three days. Patient died suddenly on the fifth day while sitting up. Post mortem examination by Dr. Evans, pathologist, revealed: (a) Chronic myocarditis; (b) arteriosclerosis; (c) sclerosis of coronary arteries. Drainage tube to appendix encapsulated, no peritoneal sepsis.

Case CXXVIII.—Clinical and pathological diagnosis: Gangrenous appendicitis and peritonitis. (?) Condition of patient when brought to hospital was: Temperature 103°, pulse 140, respiration 136; anxious expression, sunken cheeks, expression of terror. As the condition of patient was very critical, the family was advised that there was no hope of recovery, but patient's family insisted on taking the chances. Operation: Peritonæum injected, covered with exudate and pus; large cavity around the appendix containing two quarts of pus of a very offensive character; the appendix was not located. A tube was inserted into the abdominal cavity, but death followed nine hours after operation.

Patients died from appendicular troubles, two. From other causes, three. Correct proportion of deaths due to appendicitis directly, 1.41 per cent.; total death rate, including incidental causes, 3.6 per cent.

Munro in a personal letter to the writer says:

Of 450 cases of appendicitis operated on by Munro and Bottomly at the Carney Hospital, from June, 1903, to the beginning of 1906, fifteen have died and can be arranged somewhat as follows: Two adults died of portal infection, one being operated within forty-eight hours, already being infected; the other was not operated (for subphrenic abscess) over a week after the onset. In this case, the abdominal cavity was not opened, but the early history was that of appendicitis. The first case died about two months after operation, the second within a day or so. Two adult cases died without operation, both being too ill to warrant interference. One adult case of appendectomy and perineorrhaphy died of acute streptococcic infection from contamination at time of repairs in one of the adjoining rooms. Every case operated upon in a certain day broke down, but only this one of ours died. One case, ten years old, said to have been ill one day had diffused general peritonitis and died in two days. One adult said to have been ill two days, and died from diffused peritonitis. One adult sick four days died of diffused peritonitis in two days. One boy sick two weeks died in one day. One adult sick three days died of diffused peritonitis. One adult sick seven days and under opiates for a week, died of septicæmia. One adult sick six days died of septicæmia. These cases of diffused or general peritonitis were for the most part emergencies. They were extremely sick, too sick for Ochsner's treatment, and too sick for operation. The duration of illness is probably too short as given in some, judging from the general and local sign. In some, irrigation was used; in some, Murphy's method was tried. I think they were practically doomed from the first. Except for the one phlebitis case they all represent dilatory methods on the part of the family doctor, however, it is only fair that we should credit the family doctor in this neighborhood with being more "operative" than ten years ago.

These reports are in close accord with other conversations and communications I have had with other surgeons.

My own limited experience bears along the same line. During the three years 1903, 4, 5, I operated upon one hundred and thirty-four cases of appendicitis. Of these, forty-four have been suppurative cases requiring drainage. Of the one hundred and thirty-four cases, six died, brief details of which are given below:

Case I.—Patient had been sick with appendicitis for three weeks, during which time a well defined abscess had formed. He was brought to me by his family physician. In putting the patient on the train the abscess, which was estimated to contain a quart of pus, was ruptured. The journey to the city was twelve hours long, and the patient arrived with a pulse of 160, with all the signs of death in his face. I advised the patient and his family that his case was hopeless, but it was decided to take chances. Under partial anæsthesia, the abdomen was incised and drainage inserted, using Fowler's position after the operation. But the patient died nine hours after the operation. Overwhelming sepsis had been observed during twelve hours preceding operation.

Case II.—Patient lived forty miles out of Portland. The attack began on a Monday, and a physician in Portland was seen, who pronounced the case one of acute indigestion, and prescribed. Patient went home, and two days later called the physician to his own town. The physician then diagnosticated appendicitis and advised the patient to come back to the hospital. This

was delayed until Friday, when the patient was brought to me by his physician. Pain between site of appendix and gallbladder was found upon examination, the abdomen was somewhat distended, and the patient vomited. I advised immediate operation, but patient's family objected. During the night the patient's condition became worse, vomiting persistent, and all symptoms of acute general peritonitis were present. I then advised against operation, as I thought the patient was going to die. At the urgent request of the man's wife I made an exploratory incision and found that a large abscess containing a part of the appendix with a concretion had formed under the liver in the neighborhood of the gallbladder and had ruptured during the night or the previous day in transportation. Drainage was placed into the right side of the abdomen in the neighborhood of the abscess cavity. Patient was relieved of much of the shock, but died five days later. Post mortem examination showed that, while the right side of the abdomen had been completely drained, the left flank or kidney fossa was the site of a peritonitis and abscess formation.

Case III.—Patient had been ill eight days, and the family physician had been at first uncertain of diagnosis. When diagnosis was decided, people hesitated about having operation performed. At the time of operation an abscess was opened and drained of about a half pint of pus. Patient had no symptoms of peritonitis and no evidence of local trouble, but died eight days after operation. Post mortem examination revealed a separate abscess located between the right kidney and right lobe of the liver; it could not be decided whether it existed at the time of the first operation, but it probably developed after the operation.

Case IV.—When I was first called by the family physician, the patient had been ill with appendicitis two weeks, during which time he had been treated by Ochsner method. Patient's pulse 140, palpation revealed large accumulation, filling entire right side of abdomen. Patient's condition warranted nothing more than a simple incision. This was made, evacuating more than two quarts of pus. Drainage was inserted and the patient left. This case was out of the city in a neighboring town. About three hours after the incision was made, before I left the town, the family physician and I were called to find an extensive hæmorrhage taking place from the numerous little skin and fat vessels cut through in making the incision. As they were too small to ligate, the edges of the wound were drawn up in contact with the gauze drainage around the rubber tubes by sutures. This was closed and patient got along fairly well, but temperature never went to normal. Five days later the family physician telephoned me to come out and open up the pelvis. While the other wound had healed and drained well, a separate abscess had formed. I went out and evacuated more than two quarts of pus from this cavity. The patient did well until five days after this last operation when a secondary hæmorrhage began from the last cavity opened, which the doctor was unable to control until the patient was hopelessly exsanguinated and died.

Case V.—Patient, sixty-seven years old, had had appendicitis ten days at time of operation, and was brought to the city over a rough road twenty miles, then on the train 300 miles, but arrived in good condition. Operation was performed immediately. A small abcess, well walled and containing about an ounce of pus was opened and drained. The patient was only under the anæsthetic a few minutes, came off the table with a pulse of 76, and absolutely no shock. On the second day he developed a well marked case of lobar pneumonia, from which he died five days later. No abdominal symptoms developed during the course of the disease, and after death the condition of the wound was found perfect.

Case VI.—Patient lived forty miles from Portland in the country. Two physicians from different towns had been treating the case, but had not been able to entirely agree as to diagnosis, one believing it to be appendicitis, the other some intestinal trouble. Cathartics had been freely used. Finally the opinion of the doctor believing it to be appendicitis prevailed, and I was called to operate six days after the beginning of attack. The patient was semicomatose, bowels distended, pulse 140 and almost imperceptible. The case looked like a hopeless one and the people were so informed, unless opening and drainage might offer something. The condition of the patient was such that the operation was done almost without anæsthetic. The abdomen was opened and drained. The patient lived about nine hours after incision.

In studying the work of a great many competent surgeons, I am ready to believe that the average results under the same circumstances are quite uniform. Murphy in closing a paper some time ago said: "The man who is having more than three or four deaths in one hundred operations, is either receiving his patronage from incompetent or procrastinating medical men, or he is doing too much manipulating in the peritoneal cavity under unfavorable pathological conditions." I think this statement of Murphy's is putting it mildly. The mortality of appendicitis in the hands of the best operators is very rapidly decreasing. For instance, we find Deaver, in the year 1901, operating upon four hundred and sixteen cases, with a mortality of ten and six tenths per cent., while in 1903 he operated upon five hundred and sixty-six cases with a mortality of five per cent. Ochsner during the same years, reduces his mortality from four per cent. to a little more than two per cent. The Mayo brothers from three per cent. to one and eight tenths. Are we to infer that these men who had had such enormous experience at that time, could cut their death rate in two, inside of two years by simple increase in their technical skill? It is not likely. This great reduction in mortality is accomplished chiefly by a better understanding of the disease on the part of the general practitioner and public, because it will be noticed not only in the work of the operators quoted, but the reduction in death rate in these same years was proportionate in the hands of all extensive operators, located in different parts of the country. It is probably true that the further reduction in mortality from appendicitis will depend almost entirely upon the general practitioner and his ability to make an early diagnosis, as well as his willingness to call a surgeon in consultation as soon as the disease is suspected. In the study of my own cases, I find that all of my deaths were abscess or general peritonitis cases, and in no case of death was the operation done prior to the sixth day. All the hundred and thirty-four patients, except one, were operated upon without delay as soon as they came into my hands. Every patient seen by me during those years has been reported in this list regardless of the condition of the patient when seen. All patients operated on early have recovered, several of whom had septic peritonitis due to perforation. Operations for chronic interval appendicitis without pus formation in the hands of surgeons well versed in abdominal surgery, should have no mortality other than ordinary surgical contingencies. Ochsner, in five hundred cases of in-

terval operation had three deaths, but claims that all these deaths were due to the fact, that they were complicated by pus tubes. In the same series, he operated in two hundred and fifty-five acute cases without perforation, with five deaths, mortality of one and nine tenths per cent. Richardson has done more than 1000 consecutive interval operations without a single death. Deaver, Mayo brothers, Murphy, Munro, and other leading surgeons have had series of cases involving hundreds of cases of chronic appendicitis, without any fatalities, while their aggregate cases of chronic appendicitis number several thousand with a mortality of less than one half of one per cent.

There seems to be no reason why cases diagnosticated and referred to a competent surgeon within the first twenty-four or forty-eight hours should not present a mortality almost as small or at most less than two per cent. Therefore, in our study of the literature and statistics on appendicitis, we conclude that:

1. Individual statistics, though large, are not reliable for accurate study. Small collective statistics are of very little value in the study of this subject. Classified statistics dealing with fine spun pathological classifications are not only valueless to the family physician, but misleading. Large statistics covering large fields and a large number of operators, are much more reliable, and while they are not accurate absolutely, they approach the facts.

2. The opinions of medical men indicate that the death rate by medical treatment is about thirteen per cent. Our statistics indicate that operators doing less than two cases per annum have a mortality of thirteen and seven tenths, or equally as great as by medical treatment. Chicago vital statistics indicate a decided increase in the death rate with the advent of surgery into this field, during the first three years. The average hospital surgeon does six and five tenths operations per annum, and has a mortality of seven and four tenths per cent., a little more than half as great as medical treatment. The death rate of competent surgical specialists during these years of 1903 and 1904, if averaged up is between three and five per cent. in the hands of those considering all cases surgical, and in the neighborhood of two per cent. in the hands of those teaching the Ochsner method. Inasmuch as a certain per cent. of the cases normally in the territory of these surgeons (because of this teaching) die without being sent to the surgeon, it is probable that the mortality in a given territory would be fully as great under the influence of the Ochsner advice as under exclusive surgical treatment. Many surgeons think it is much greater.

It is probable that in a population of six hundred and twenty-five inhabitants, one person has appendicitis each year. Upon an average throughout the United States, one doctor treats one case of appendicitis each year. Almost all the deaths in the hands of well trained abdominal surgeons are the result of: 1. The family physician failing to recognize the disease early. 2. The family physicians temporizing with medication or the Ochsner treatment. 3. The inability of the family physician to procure a competent surgeon early. 4. The opposition of the members of the family to surgical treatment.

The great reduction in the death rate of appendicitis during the past three or four years is due largely to better diagnosis on the part of the general practitioner, but it is a surprising fact that in the practice of the writer, whose cases are practically all referred by other physicians, less than half the cases coming for operation have been diagnosticated before the end of the third day, with any degree of positiveness even at the present day. The Ochsner treatment, aside from surgery, is unquestionably the best in that it is purely negative, viz., no food, no cathartics, mechanical removal of all matter from the stomach, food by rectum to avoid peristalsis of digestion. It may be said to be a "first aid to the injured" in that it is the best possible treatment in the absence of a competent surgeon, but should in no instance be expected to take the place of the surgeon. Appendicitis is essentially a surgical disease and is at all stages best treated by a surgeon. Osler admits that "There is no medical treatment for appendicitis." Other prominent internists are of the same opinion.

The duty of the physician, therefore, is first to acquire a realization of the fact that appendicitis is the most frequent of all the serious abdominal lesions; that many more of the dyspepsias, cramps, and acute peritonitis cases than have been formerly suspected are appendicitis. Therefore, being called to a case of serious abdominal disease of doubtful nature, his first duty is to eliminate appendicitis, then other surgical diseases, and if he cannot do this, he must take the course advised by Kelley when he says: "The duty of a physician is aptly expressed in W. W. Keen's aphorism: 'The first indication in appendicitis is to call in a surgeon.' It is the office of the surgeon to determine upon the necessity for an operation, and for this reason he should be asked to see the case in consultation with the physician." Equal to the making of an early diagnosis and the calling of a surgeon in consultation early in the case, is the responsibility of educating the public that surgery is the only means by which a doctor can materially and permanently benefit a case of appendicitis. When the surgeon is doing his best work, when the physician is making an early diagnosis and calling surgical consultation promptly, and when the people fully realize the helplessness of medicine and the danger of the disease, the total mortality of appendicitis instead of being seven and four tenths per cent. will probably be less than two per cent.

OUR DUTIES AS CITIZENS IN THE PREVENTION OF TUBERCULOSIS.*

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The Southern California Antituberculosis League exists because the State has a tuberculosis problem to solve. This tuberculosis problem in turn owes its origin to California's climate. "But," it may be said, "California's climate is inimical to the spread of tuberculosis." True. "How then," may be asked further, "can it create a tuberculosis situation that may be termed a menace to the public health?"

These would be the natural questions which

* Read before the annual meeting of the Southern California Antituberculosis Society, San Bernardino, May 1, 1906.

would suggest themselves to a stranger, when told the seemingly inconsistent facts, that California has a climate decidedly unfavorable to the spread of tuberculosis, and yet at the same time a death rate from the great white plague, higher than that of any other State in the Union.

We who live here know why this condition of affairs exists; know that it is because of this same favorable climate, that scores and scores of consumptives come hither from the East, unfortunately, however, in the great majority of instances in such advanced stages of the disease and in such a low state of finances, that living from necessity under worse conditions than in the East, any other outcome than death is quite out of the question for them. All that many of these unfortunate sufferers gain is a prolongation of life for a few months. Some do not even do this.

To deny our climate to these fellow creatures who have contracted a disease which exists largely because of our own negligence in matters of hygiene and modes of living, would mean that we would be forced to establish a State quarantine against consumptives, and a State quarantine against Eastern consumptives would not only be an inhumane measure, but would be impossible to enforce. State quarantine is an evidence of blind, cowardly, ignorant fear, and can have no advocates among those who look at this problem rationally and intelligently.

Yet, while it is true that we should not deny the advantages of our climate to these sufferers from the East, the East, on the other hand, should make an effort to understand how to prescribe and use our climate. When the East sends a poverty stricken consumptive to us, who not only is unable to supply himself with his material needs, so that it is necessary for Californians to support him; and who, in addition, because of the nature of his disease, infects his surroundings and so endangers the lives of the citizens of this State, the East commits a crime for which it may justly be ashamed.

The East should learn that, while Southern California has a dry, well drained soil, an atmosphere with an abundance of oxygen, a maximum number of sunny days in the year, a difference between day and night temperatures to be mildly stimulating, a general topography pleasing to the eye and restful to the mind and body, all these forming a combination of climatic factors which are not only inimical to the development of tuberculosis, but favorable to its cure, that other elements than these are necessary, if a consumptive is to have a decent chance to regain his health and prolong his life.

He cannot live on the air and sunlight alone, since these, indeed, only improve his appetite and necessitate an increase in expenditure of money. He must possess means to enable him to purchase nutritious food in ample amounts and further, to provide himself with lodgings that will enable him to breathe the California air, both night and day. The consumptive should not be obliged to work, but should be able to give himself up to the one task of getting well with his whole heart, soul, and mind. In short, he should lead, under careful guidance, the proper mode of life in a pleasant and suitable environment.

Yet it is safe to say that fifty to seventy-five per cent. of the consumptives who come to us from the East fail to do these things, and because of this failure on their part, and more especially because of their poverty stricken conditions when they come here, we of California are brought face to face with a problem that not only means added financial burdens, but which bids fair to become a serious menace to the public health of our section of the State, unless we adopt measures that will rob the presence of these consumptives of those dangers which always exist wherever tuberculosis is widespread.

A consumptive is dangerous virtually because his sputum or spittle may contain in twenty-four hours not only millions, but billions of the germs which cause the disease, and these germs can live for months in damp, dark places. Yet you need not worry greatly when you see a consumptive spit into the street. The sunlight and oxygen of the air will render such sputum innocuous and innocent in a few hours or days. We do not need antispitting ordinances for our public highways nearly so much as we need antispitting ordinances for our homes and lodging houses, nor nearly so much as we need building ordinances that will prevent the erection of unsanitary, unhygienic, and poorly ventilated buildings and rooms. We need much more than antispitting laws for the public highways, ordinances also that will make lodging house proprietors maintain clean establishments, and that will necessitate the periodical fumigation of hotels, lodging houses, and second hand establishments.

We need, in short, a system of compulsory registration and fumigation, so that our health officers could prevent ignorant or vicious consumptives from infecting their surroundings and so becoming a source of danger to the public health of our people. For the same humanitarian principles then that should keep us from closing our State to the tuberculosis unfortunates from the East, we should insist that once among us, they should observe such precautions as will prevent their presence here from being a danger to the citizens of this commonwealth. All we ask is, that the sputum shall be expectorated into suitable receptacles and that this expectoration shall be burned or otherwise destroyed, and that the apartments in which consumptives live shall be periodically fumigated. These things we would accomplish if possible without physical hardship or mental distress to the victims of the great white plague.

Compulsory registration of all cases of tuberculosis (meaning by this confidential notification of the health officer by the physician of every case of tuberculosis with which the physician comes in contact, no placard or sign being placed on the house and no visit being made to the patient, unless the attending physician states that sanitary conditions are bad), is one of the most, yes, in the speaker's mind, the most urgent of all our needs in the prevention of tuberculosis. Only through compulsory notification can you learn where the persons who have the disease live, and

this knowledge is absolutely necessary, if we are to make a thorough and comprehensive attempt to destroy the germs that spread the disease. If we are to reach the germs, it is necessary to know where the people live who produce the germs. No method other than compulsory registration will give us this absolutely essential and fundamental knowledge.

This system of compulsory registration implies that the physician obligates himself to instruct his consumptive patients how to render the sputum harmless and includes, as already stated, the periodical fumigation of rooms occupied by consumptives and of hotels, lodging houses, and second hand establishments. With compulsory registration of tuberculosis established, other hygienic, preventive, and curative measures will follow as a natural sequence.

To recapitulate! The Southern California Antituberculosis League has as one of its objects of being the prevention of the spread of the great white plague among our own people. Present conditions favor the spread of the disease among our citizens. Now, it is ethically as much of a crime to kill a citizen by allowing him, through negligence of proper sanitary laws, to become infected by a preventable disease like tuberculosis, as it is to go out on the streets and kill him with a pistol or knife. It is our plain duty as citizens to inaugurate measures that will prevent Eastern consumptives whom we cannot prevent entering California from becoming a source of danger to the public health of the State. A system of compulsory registration and fumigation as briefly outlined would mean a tremendous stride forward in the direction of real prevention, and as the method has been most successfully tried in our own and European countries, we not only urge you to give it your thought and aid, but more than that, since this tuberculosis problem of Southern California affects every one of us, to do your civic duty by agitating the necessity of compulsory registration and fumigation, for was only your own community, but for the entire State. In the speaker's mind, there is no preventive measure that can offer anything like the large number of beneficent results as can these methods that strike at the very fountain head of all the danger; and we are undoubtedly negligent of our civic duties and responsibilities, when we fail to give this work our earnest cooperation.

A REPORT OF THE YEAR'S WORK IN THE GYNÆCOLOGICAL SERVICE OF THE SAMARITAN HOSPITAL, INCLUDING THE TECHNIQUE.*

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We have the pleasure of presenting to you a report of the work done by the gynæcological staff of the Hospital for the year 1905, which includes the house cases and the dispensary service. Considering the fact that only six beds are available for ward use, and a few private rooms, the difficulties under which we have labored will be appreciated. The dispensary service has been working under great disadvantages also. Owing to the construction of the new wing to the hospital (which will afford a new gynæcological ward of thirteen beds), the various dispensaries have been compelled to work in practically two rooms, one department seriously handicapping another; this is especially unfortunate in the maintenance of a gynæcological dispensary, because women strenuously object to publicity. But this will be abolished when we acquire our new dispensary quarters.

1. *House service.* During the year 175 patients were admitted. The following diseases were treated. Cystocele, 16; incomplete laceration of the pelvic floor, 53; complete laceration of the pelvic floor, 3; chronic metritis, 50; endometritis, 29; hæmorrhoids, 3; acute appendicitis, 2; chronic appendicitis, 10; suppurating dermoid cyst of the right ovary, 1; inflammatory unilocular cyst of ovary, 1; oophoritis, 3; salpingo-oophoritis, unilateral, 16; bilateral, 6; cystic ovaries, unilateral, 9; bilateral, 4; incomplete abortion, 6; acute anteflexion of the uterus, 5; cancer of the body of the uterus, 2; the cervix, 3; bilateral salpingitis, 3; laceration of the cervix, unilateral, 15; bilateral, 8; hypertrophy of the cervix, 1; hæmatoma of the ovary, 1; procidentia uteri, 3; uterine fibroids, single, 8; multiple, 9; ventral hernia, 3; general adhesions, 1; tuboovarian suppurative disease, 1; carcinoma of the ovary, 1; floating kidney, 2; large Nabothian cysts, 1; pyosalpinx, unilateral, 3; bilateral, 7; pelvic abscess, 6; ruptured extrauterine gestation sac, 3; abdominal sinus, postoperative, 1; varicose veins of the broad ligaments, 1; fractured coccyx, cartilaginous union, 1; vesicovaginal fistula, 1; uretheral caruncle, 3; retroflexion of the uterus, 30; retroversion of the uterus, 6.

The following operations were done for these diseases: Dilatation and curetment, 87; anterior colporrhaphy, 13; Emmet's perinæorrhaphy (for incomplete laceration), 47; Hegar's, 5; Tait's (for complete), 3; nephrorrhaphy, 2; divulsion of sphincter ani muscle, 2; appendectomy, 11; salpingo-oophorectomy, unilateral, 24; bilateral, 20; supravaginal hysterectomy, 23; panhysterectomy, 7; ventrosuspension, 30; ventrofixation, 4; trachelorrhaphy, unilateral, 15; bilateral, 4; amputation of cervix, 1; ventral herniotomy, 3; flap formation for vesicovaginal fistula, 1; cœliotomy to break up adhesions, 1; excision of urethral caruncle, 3; resection of ovary, 5; trachelotomy, 1; vaginal section, 5; intraperitoneal shortening of the round ligaments, Baldy, 1; Montgomery, 4; Gilliam-Ferguson, 1; myomectomy, 3; clamp and cautery for hæmorrhoids, 2; removal of coccyx, 1; not operated, 2.

Of these operations 120 were abdominal sections. The vermiform appendix and right ovary conjointly were removed in six cases. In one of the cases of ectopic gestation, occurring upon the right side, the appendix was so badly inflamed that it was also removed. One of the patients operated upon for complete laceration of the pelvic floor had been suffering for some weeks from chorea, which disappeared within ten days subsequent to operation. During the year there was admitted a woman upon whom a diagnosis was made of an ovarian cyst of the right side with a long pedicle. Upon opening the ab-

* Read before the Samaritan Hospital Medical Society, March 31, 1906.

dominal cavity it proved to be a simple serous cyst of the right kidney. This case was reported in full by Dr. Wilmer Krusen at the Obstetrical Society of Philadelphia, May 14, 1905. One of the cases of multiple fibroids of the uterus had a beginning carcinoma of the cervical canal at the internal os.

Of the patients operated upon, there were four deaths; two following hysterectomy for fibromyomata complicated with pus in the pelvis, and two subsequent to bilateral salpingo-oophorectomy for inflammatory disease, with large masses of pelvic inflammatory exudate. There was also another death, but this patient was practically moribund when admitted to the hospital, so no operation was done; the condition was a large pelvic abscess with general peritonitis.

In the three cases of ventral hernia recorded, the patient originally had been operated elsewhere. Of our own cases we know of one postoperative ventral hernia, occurring in a short, fat, colored woman with a pedulous abdomen, operated upon for procidentia uteri. The patient with postoperative abnominal sinus herein recorded, was operated on at a hospital where the general surgeon does all the gnyæcological operations, and he had used heavy silk for ligating the broad ligament upon the right side. Three loops of silk were removed, the patient making a good recovery.

A few words relative to the gynæcological technics employed: We firmly believe the simpler the technics, the dangers of a "flaw" are reduced to a minimum. When possible we prefer to have patients in the hospital at least forty-eight hours previous to operation, in order that they may be carefully studied.

Preparation of hands at time of operation.—This simply consists of thorough scrubbing of the hands with soap and water, using a brush, then their immersion in mercuric bichloride 1-4000, then sterile water.

Rubber glove.—These are not routinely used; they are worn only when we anticipate there is pus present, or when the operator or any of the assistants have been previously handling an infected case.

For cleansing the vagina a solution of lysol, tincture of green soap and water is used; the mucosa being thoroughly scrubbed with gauze; for the skin surface of the perinæum and buttocks a brush is used instead of the gauze; this is followed with sterile water, and then alcohol.

Dilating the uterus.—In performance of the operation of curettment, the graduated bougies are preferred for dilating the uterus, and for the curettage a sharp irrigating curette is used. Subsequent to this operation the uterus is swabbed out with a saturated solution of iodoform in ether; a gauze packing is not necessary unless bleeding should warrant it. In dilating the uterus for the performance of intrauterine digital exploration, the metranoikter is used in the parous woman, but in the nulliparous woman the laminaria tent is preferable, because in this class of patients the dilatation will be less painful with the tent.

Plastic operations upon the genital tract.—Chromicised catgut is used throughout; at times silkworm gut may be used when there is undue tension upon the external sutures, or it may be employed exclusively for the skin perinæum. The Hegar and Emmet perinæorrhaphies render satisfactory results for incomplete lacerations of the pelvic floor, and the Tait's operation for the complete variety. In all patients having plastic operations upon the genital tract, the bowels are moved upon the second day, irrespective of the degree or extent of the laceration. Kelly in his work upon *Operative Gynæcology* makes the following statement in regard to the care of the bowels in perineorrhaphy operations: "The custom of confining the bowels for eight or ten days is reprehensible. There is no danger of fæcal matter gaining access to the wound, even where sutures have been passed on the rectal surface if they have been properly placed and properly tied. There is likewise no danger of disturbing united wound surfaces by the downward displacement of the pelvic floor during defæcation on the third or fourth day following operation, if the fæces are soft or fluid. When the bowels are confined for a longer period, there is often great difficulty in securing a movement, and the effort to pass the scybalous masses is now attended with real danger, because the sutures have become loosened and the union of the parts is not sufficiently firm to withstand the pressure." This expresses our view of the matter very nicely. But of late Kelly has changed his opinion in this regard, and now locks up the bowels for a period of ten days, keeping the patient upon a diet of albumen water. From the results we have obtained this appears to be entirely unnecessary, and a patient must assuredly feel more comfortable with a daily evacuation of the bowels, than when thus "locked up." The bladder is always catheterized for the first forty-eight hours subsequent to operation upon the pelvic floor; after this time the patient is permitted to void the urine, and the nurse irrigates the parts subsequently with mercuric bichloride solution 1-4000.

For cystocele, which is frequently so hard to cure, the following operation has afforded the best results: An incision is made in the median line of the anterior vaginal wall throughout the extent of the cystocele, down to the cellular tissue between the vagina and the bladder; the bladder is then dissected loose from its attachment to the anterior vaginal wall to the extent of the degree of prolapse of the bladder. A semielliptical piece of vaginal wall is then removed from each side of the incision, and the edges of the vaginal wall coaptated with a continuous chromic catgut No. 1 suture. By this procedure the prolapsus of the bladder will be better corrected than by a denudation operation.

Pus in the pelvis.—The chief field for vaginal section is in cases of large pelvic abscess in patients acutely ill, and in those prostrated from long continued suppuration. There is no question concerning the positive merits of the drainage operation in selected cases, with its low mortality, in comparison with abdominal section by which method twenty-five per cent. or more of the patients succumb. The operation is done quickly, does not add shock to the already weakened patient, and permits her to rapidly convalesce from the critical condition in which she has been placed by the large abscess. The technique consists of a free transverse incision in the posterior vault of the vagina, the opening of all pus pockets, irrigation of the abscess cavity, and

the introduction of a T rubber drainage tube. If the pus accumulation is in between the layers of the broad ligament, then the incision should be made at the point where the abscess is "pointing" in the vagina, exercising care not to injure large blood-vessels or the ureters.

In the performance of abdominal section, the skin surface is first thoroughly scrubbed with tincture of green soap, a piece of gauze being used for this purpose; this is followed by plain water, then mercuric bichloride 1-1000, and this by alcohol. When emergency cases are admitted and there is no time to give the patient the advantages of the preparatory cleansing of the abdomen before taking her into the operating room, the method just described is used, but the abdomen is first wiped off with tincture of iodine. The median incision is used exclusively.

For securing hæmostasis in the abdominal cavity catgut is used exclusively. No nonabsorbable ligature or suture of any kind is used within the peritoneal cavity. For ligating the broad ligament plain catgut No. 3 is used, for closing over the stumps in hysterectomy and bringing together the layers of the broad ligaments plain catgut No. 2 is employed; for whipping over the stumps following salpingo-phorectomy or for suturing resected ovaries, chromic catgut No. 1 is preferred. In the performance of ventrosuspension, and where sutures are required in any of the operations for shortening the round ligaments, chromic catgut No. 1 is always used.

The treatment of backward displacements of the uterus.—We never employ the Alexander operations, always depending upon one of the intraperitoneal procedures. Suspension possibly has the first choice, next the Gilliam-Ferguson operation or its modification by Montgomery. Fixation is done instead of suspension when indicated.

Appendectomy.—The vermiform appendix is not removed as a routine procedure in abdominal sections. When it is necessary to remove it, the meso-appendix is ligated with chromic catgut No. 1, then a peritoneal cuff is reflected from the appendix, near the cæcum; the appendix is then ligated with the same material, and is cut through with knife or scissors, and the stump touched with carbolic acid followed with alcohol. The stump is then covered with the peritoneal cuff, using chromic catgut No. 0.

Cancer of the uterus.—When the cervix is involved we do not care to operate unless we can do so early, because the percentage of recurrence is so extremely high. When the body of the uterus is involved, of course we can operate even late in the disease, with a hope of a small percentage of recurrences. Vaginal hysterectomy has been discarded in these cases, and complete extirpation by the suprapubic route being done exclusively. In the performance of this operation we remove all possible tissue in the vicinity of the primary site of the growth, and the removal of a considerable cuff of the vagina with the uterus, and as much of the parametrium as possible. No attempt is made to dissect out glands, as statistics upon this procedure does not warrant subjecting the patient to the additional time required, and which increases the mortality. One or more glands, if enlarged and palpable, and easily accessible, may be removed for microscopical study. We never lose an opportunity to impress upon the general practitioner the great importance of the necessity of an early diagnosis in cancer of the uterus.

For hæmorrhoids we use the clamp and cautery exclusively.

Method of closing the abdominal incision.—We generally employ one of two methods. In either one the peritonæum and aponeurosis are closed with a continuous suture of chromic catgut No. 1; then the remaining structures are closed either with interrupted sutures of silkworm gut, or a subcuticular suture of chromic catgut No. 1. Gauze sponges are used exclusively for vaginal and abdominal operations; for holding back the intestines especially when the patient is in the Trendelenburg position, the "gravity" pad is found very useful. All instruments are boiled, including cutting instruments. The abdominal dressings are dry, and simply consist of sterile gauze held in place by adhesive tapes, and over this is applied the many tail binder. When drainage is indicated and there is a choice of route, the vaginal is preferred.

We have had no experience with cargile membrane or transplantation of ovaries.

In combatting shock we depend upon strychnine, camphor, aseptic ergot, adrenalin, and hypodermoclysis.

Postoperative treatment.—All section cases receive routinely eserin salicylas. gr. 1-60 every four hours, which is discontinued after the first bowel movement. Twenty-four to thirty-six hours subsequent to operation a calomel course is ordered, gr. 1-6 every hour until one grain is taken, followed by magnesium citrate ℥iv every four hours until the bowels are freely moved. If this does not afford a bowel movement in the required time, an enema of turpentine, magnesium sulphate, glycerin, and water is ordered, to be repeated in an hour if necessary. Since using the eserine we have had very little trouble with tympanites, and far less difficulty in securing a bowel movement. If the patient is suffering much pain and is very restless, a hypodermic of morphine gr. 1-6 to ¼ is given, preferably within the first twelve hours. Curettement cases are kept in bed a week to ten days, and are sent home at the end of ten days to two weeks; all plastic operations upon the genital tract are kept in bed for two weeks, and are discharged at the end of the third week. The same rule applies to abdominal sections. All pathological specimens are sent to the gynæcological laboratory of the hospital.

2. *Dispensary Service.*—During the year 103 new patients were treated, and 291 visits were made by old patients. The number of diseases treated were 141, 2 refused examination, and 14 were referred to other dispensaries, gynæcological examination being negative.

The following is a list of the diseases treated: Abortion incomplete, 2; postoperative adhesions, 1; amenorrhœa, 3; cervicitis, 1; laceration of cervix, unilateral 3, bilateral 6; cyst of cervix, 1; cystocele, 8; chronic cystitis, 5; vesicovaginal fistula, 1; floating kidney, 1; menopause, 3; menorrhagia, 2; chronic metritis, 22; metrorrhagia, 5; endometritis, 4; dysmenorrhœa, 2; dyspareunia, 2; anterior pudendal hernia, 1; ovary, prolapse of 3, dermoid cyst of 1; oophoritis, 2; pregnancy, 7; bilateral pyosalpinx, 3; incomplete laceration of the pelvic floor,

11; salpingitis, 1; salpingo-oophoritis, unilateral 2, bilateral 5; urethral caruncle, 1; anteflexion of uterus, 7; fibromyomata, single 1, multiple 1; procidentia uteri, 1; anteversion of uterus, 2; carcinoma of cervix, inoperable, 2; retroflexion of uterus, reducible 3, irreducible, 1; retroversion of uterus, reducible 7, irreducible 1; specific urethritis, 1; vaginitis, gonorrhœal 1, simple 3; vulva, cancer of 1, chancre of 1; bilateral vulvovaginal abscess, 1. It will be noted that both of the cases of cancer of the uterus were inoperable, also the case of cancer of the vulva. In two of the cases of prolapse of the ovary, strangely enough the ovary had become displaced anterior to the broad ligament, a rare condition.

It is unnecessary for me to lay stress upon the beneficial results which accrue from local treatment in gynæcological practice. The various methods which we employ in the dispensary are the tampon, aseptic and astringents applications, vaginal douching, local bloodletting, and the pessary.

For tampons, sterilized lamb's wool covered with a layer of cotton is used; because, it is nonirritating, its drainage properties are good, it is introduced and removed with little or no difficulty, and it retains its resiliency longer than any other material. Tampons are used to apply medicaments and for mechanical reasons. The medicament is applied for the relief of pain, for the absorption of inflammatory products, as a counterirritant, or to contract relaxed tissues. Glycerin, owing to its dehydrating properties, is the best adjuvant to other drugs, and when combined with ichthyol, fifteen to twenty-five per cent., its value is markedly enhanced. The antiseptic and astringent applications of value are numerous. In ordering vaginal douches the patient is cautioned to take them in the reclining position, and is told the necessity of using several quarts of water in order to secure its secondary contractible effect upon the blood vessels. High rectal injections at times are found useful, because the fluid is carried higher in the pelvis, and exerts its influence upon the pelvic structures more effectually than do simple vaginal douches. It also tends to relieve constipation, which is so frequently present in these cases of pelvic disease. Pelvic massage is never employed. In retrodisplacements of the uterus uncomplicated by disease of the annexa or by pelvic adhesions, the pessary finds a field of usefulness.

For leucorrhœa, creolin or lysol is generally ordered, changing to zinc sulphate when a more marked astringent is required. Frequently when creolin or lysol does not afford results, a marked improvement will follow using the creolin in the morning and the zinc sulphate at night.

1419 TIOGA STREET.

VALUE OF THE BIER TREATMENT.*

BY EDWARD ADAMS, M. D.,
New York,
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Suppuration as summarized in the words incision and drainage has, in accordance with the progress of modern surgery, undergone a remarkable change. Since the introduction of hyperæmia as a therapeutical agent by Professor A. Bier, of Bonn, Germany, the rubber bandage has, in a great many cases, superseded the knife in the treatment of various acute and chronic conditions. In 1892, while Bier was professor of surgery at Greifswald, he first used this treatment, but not until 1903 (1), after good results in over one thousand cases of various chronic joint affections, did he first bring it to the notice of the profession. All physicians who have seen tuberculous and gonorrhœal arthritis, especially the latter, know how unsatisfactory the usual treatment, namely, rest, massage, passive motion, salicylates, iodides, etc., have been in these chronic cases, and how difficult it was to overcome the extreme pain and stiffness of the diseased joint. In looking over the literature on these subjects, I find very little has been said about this treatment, and believe this method is worthy of more recognition than it has received up to the present time.

The mode of treatment is very simple, and in describing the technique I shall follow the directions as outlined by Bier himself, in his book entitled *Hyperämie als Heilmittel,* and will restrict myself to the method as used in various joint affections. In order to produce this damming or passive hyperæmia it is best to use an ordinary Esmarch or Martin thin pliant rubber bandage, about two inches in width. If such a bandage is applied moderately tight in several layers, not necessarily directly over each other, around a limb, and it matters not whether an elbow or ankle joint is the diseased part, it will soon be noticed that the subcutaneous veins swell, the skin becomes of a red hue, which is slightly tinged blue; the limb becomes larger and œdematous and gives a feeling of warmth to the touch. If there is pain it ceases almost immediately, and the stiffness in the joint gradually becomes less. The rubber bandage in this case should not cause any uncomfortable feeling, and this degree of hyperæmia (the so called heisse Stauung) or hot damming, is the only right and proper one that can be used as a remedy. Sometimes it is very difficult to obtain this degree of hyperæmia, and it requires careful attention and some practice to apply the bandage in such a way that the arteries are not compressed, while at the same time the veins are so far compressed as to partly check the reflux of blood, so that the flow of blood is retarded while the circulation is not entirely suspended.

In applying this treatment to a knee or elbow joint I find that sometimes it is easier to obtain the right degree of hyperæmia by bandaging the distal part of the joint with a flannel bandage. Other aids can be used to produce the proper degree of hyperæmia. Sometimes a heavy coating of tincture of iodine over the diseased joint causes a slight inflammation; then the bandage applied over the affected part causes a very good hyperæmia. Again, one can make the limb bloodless for a few moments by Esmarch's method, and after waiting for the reactive hyperæmia, then dam with the bandage the copious amount of blood from the reactive hyperæmia. In order to prevent any unpleasant results, such as atrophy of the muscles or irritation of the skin at the place where the bandage is applied, a few layers of gauze can be interposed between the skin and the rubber. It is also advisable to change the place of the bandage; for instance, to put it at night directly

* Read by invitation before the Alumni Society of the Cornell University Medical College, Thursday, December 21, 1905.

above the diseased joint, and during the day quite far away from the joint. If the bandage is too tight the skin of the limb looks grayish blue, and there appear whitish or vermilion colored spots, which grow larger and larger so long as the too tightly drawn bandage remains on. The joint is cold to the touch (the so called kalte Stauung, or cold damming). Even where there is a subjective feeling of warmth, there also appear paræthesia and pain under these conditions. All the phenomena indicate that the bandage is too tight and must be loosened.

At first the bandage can only be worn for half an hour in the morning and half an hour in the afternoon, and the length of time can be increased daily. One patient, I have in mind, wore it for over eighteen hours without any unpleasant effects. The hot damming previously described can only be used as a therapeutical measure, and at the first application of the bandage the patient must be strictly admonished to tell at once if more pain is felt, if the joint becomes blue or feels cold or numb. After the removal of the bandage it is well to massage the part and to exercise the joint.

Nature uses hyperæmia either actively (arterial) or passively (venous) in every function of our system for growth, regeneration, and in all remedial efforts. We therefore must find out the ways Nature takes and help her by limiting the hyperæmia if it becomes stronger than necessary (the antiphlogistic regime in acute inflammations), or by increasing the hyperæmia if Nature does not seem to react with enough force against the disease, as in the cases of chronic inflammations. As to the effects of passive hyperæmia, we find that the first and foremost is the marked lessening of the pain if the bandage is properly applied, but if it is not the contrary effect results.

But it is not the anodyne effect alone that makes hyperæmia a remedy. It also has a bactericidal effect, but it is hard to say whether this depends on the increased leucocytosis, with a larger quantity of serum, or on the product of the change of matter in the bacteria, or on the increase of the carbonic acid in the blood. Hyperæmia by damming has also a dissolving effect, for in these chronic joint affections the adhesions, consisting of connective tissue, become infiltrated with serum, swell, and are dissolved, being removed with the serum by means of massage, which should be employed after the bandage is taken off.

I shall briefly relate the histories of a few cases, in which I have successfully employed the Bier treatment:

Case I. J. W., male, twenty-two years of age, fireman by occupation whom I saw the early part of January of this year for the first time. Four weeks previous to this he had had a slight gonorrhœal infection and felt perfectly well until a few days ago, when he experienced severe pain in the left knee joint, which became swollen, painful, and stiff. I treated him with salicylates without any results. The pain in the meantime became so severe that narcotics were given to produce sleep. Then the Bier treatment was applied for the first time for half an hour in the morning and evening. The first night the patient was able to sleep without the use of any drugs. After three days the patient was able to walk with the aid of a cane, and within one month the stiffness and pain had entirely disappeared.

Case II. R. B., male, thirty-nine years of age, suffered for eleven weeks with an inflammation of the right ankle joint, with swelling, severe pain, and stiffness. He had been treated for rheumatism without any effect. Bier treatment was applied, the first application being of fifteen minutes' duration; the length of time was daily increased, and at the end of the week the patient was able to walk with the use of a cane. The bandage was now kept on for four hours in the morning and five in the afternoon. At the end of twenty-two days the patient was able to walk about all day, the pain and stiffness having entirely disappeared.

Case III. Girl, A. C., age twenty-one, single, always enjoyed the best of health. On June 17, 1904, she struck her right elbow joint against a chair, and a few days later noticed a swelling of the joint. This gradually increased in size, being at first nonpainful, but at the end of seven weeks the patient was unable to move the joint owing to the severe pain and stiffness. Bier treatment was applied, the length of time for the application of bandage being increased daily. At the end of one year flexion, extension, pronation were perfect, while supernation was not quite fully restored. There is absolutely no pain and she can now use the arm as well as ever. She had been under treatment for over one year.

Case IV. C. S., single female, aged twenty consulted me for the first time December 12, 1904, with all the cardinal symptoms of a right tuberculous ankle joint. Bier treatment applied. At first she was able to keep the bandage on for only a half hour in the morning and afternoon, the length of time being increased daily, so that now the bandage can be worn for eighteen hours without any inconvenience. At present there is no pain and the patient can use the limb as well as ever.

In all, I have used this treatment in six cases of tuberculous arthritis, three gonorrhœal arthritis, and two chronic arthritis with gratifying results. Tuberculous dactylitis also responded well to this treatment, and four cases were cured in this manner. The failures were in chronic rheumatoid arthritis and in arthritis deformans. Laquer (2) reports fifty cases of various chronic joint affections with good results, except in arthritis deformans. Habs (3) used this treatment in three hundred cases of chronic joint affections, two hundred of these being tuberculous. He obtained very good results, chiefly on the knee, elbow, and ankle joints. Children especially respond well to this treatment. More recently Bier (4) has used passive hyperæmia in one hundred and ten cases of acute and subacute supperative inflammations, and until now he applies hyperæmia in all cases of accessible suppuration, and his results have been highly satisfactory.

The technique of application in the acute conditions differs slightly from that of the chronic inflammation, in that the bandage is applied comparatively loose, as far as possible above the focus of inflammation, and in this way the characteristic congestive hyperæmia is also produced. Hyperæmia by damming hastens the course of the suppuration, because the necrotic tissue is rapidly cast off, and, what is most important, the affected part is kept alive instead of being doomed for necrosis, as in the other methods of treatment.

Another great advantage is that hyperæmia localizes the affection, and that the œdema and red-

ness gradually subside, even before the constriction is removed. Unless the benefits from congestive hyperæmia become promptly manifest, Bier incises in all cases to allow the free escape of pus; but in most instances the failure in its application is due to faulty technique. The congestion must be considerable, but not intense enough to hurt the patient, and the bandage should be applied so as not to cause any pain. The retarding of the circulation renders harmless the bacteria and prevents necrosis by the superabundant nourishment it supplies to the tissues.

More recently Bier's assistant, Klapp (5), has modified the treatment for abscesses of the soft parts by the use of ordinary dry cups, which are applied directly over the abscess, the cup being sufficiently broad to go beyond the suppurating area; this treatment is applied once or twice daily for one half to an hour.

Klapp has applied this treatment to abscesses of the breast, carbuncles, furuncles, and phlegmons of the extremities, with gratifying results. The method is simple, alleviates pain, and cures in half the time, as compared to other methods.

In conclusion, I wish to state that the methods of treatment by Bier and his assistants are of great value if properly used, and dealing especially with acute surgical affections of the soft parts. Much patience must be practised, in order to secure the right kind of hot stasis without producing pain; otherwise the greatest of harm can be produced.

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1. A. Bier. *Münchener medizinsche Wochenschrift,* April 18, 1903.
2. A. Laquer. *Berliner klinische Wochenschrift,* September 5, 1904.
3. Habs. *Münchener medizinische Wochenschrift,* June 2, 1903.
4. A. Bier. *Ibidem,* January 31, and February 9, 1905.
5. Klapp. *Ibidem,* March 30, 1905.

92 MORNINGSIDE AVENUE.

SCIENTIFIC MURDER.

By J. EDWARD HERMAN, M. D.,
Brooklyn.

Every little while some one suggests that hopelessly sick people should be deliberately killed. Recently this barbarous idea has been advanced by men and women in different sections of the United States. Measures, also, have been introduced in the legislatures of Ohio and Iowa to make it legal for physicians to put to death incurable patients. It is very doubtful, of course, if the committees in charge of these bills will be so lacking in the sense of humor as to allow these idiotic measures to escape from the committee rooms. A similar bill, some years ago, was presented in the Saxon Parliament and was indignantly rejected.

A New York minister recently addressed a body of medical men whose guest he was at a dinner, telling them they would be making an advance from barbarism towards a higher civilization if they adopted the same wild beast view of this question which he was not ashamed to proclaim. Women also, strange as it seems, have openly championed the fight for the legalisation of the right to kill those whose life can only be prolonged by medical attention. Mrs. Oliphant, the English novelist, in one of her books argues for the destruction of sufferers from cancer. Miss Margaret Deland seems to countenance this scheme in her otherwise admirable novel, *Dr. Lavender's People.* In the story she compromises the matter by having the cancer stricken woman put to sleep forever by an overdose of medicine, given by the patient's half witted sister.

A physician, according to newspaper reports, relates the case of a woman who was frightfully burned and says, practically, that he killed her with an enormous dose of morphine, and asserts a Catholic priest who administered the last sacrament, when told of what had been done by the doctor, said: "You did exactly right." The doctor tells also this fanciful thing: "When I entered the room the woman lifted her hand to shake hands with me and the flesh dropped from the bones, leaving the bones of the forearm absolutely bare!" The physician evidently forgot to add, to make his story complete, that the lady apologized for the disordered condition of the room and insisted upon brewing a cup of tea for the doctor with his own hot air, before he attended to her burns. Everybody ought to know that the Catholic church never sanctions the taking of human life—it goes against such teaching to the extent of absolutely forbidding the sacrifice of the life of even an unborn child in the interest of its mother.

The patient who suffers constant pain for a long time is the exception. When suffering is acute a doctor will not hesitate to use very large doses of opiates, of a size much greater than would be justifiable under ordinary circumstances. That is, as far as any conscientious physician has a right to go. In a lingering death, as has been pointed out by Dr. George F. Shrady, pain has its compensation by developing a tolerance for suffering; and when agony becomes too intense Nature has her own anodyne in the form of shock, which benumbs sensibility. In a mangling accident the spectator really often is more distressed than the victim. The symptoms of the death throes are generally more trying for those who stand by, than for the dying person. In a study of five hundred deathbeds, made by Dr. William Osler, with particular reference to the modes of dying, he found that only ninety complained of pain and distress of one sort or another; the great majority gave no sign one way or the other. "It is a merciful provision of Nature," says Dr. T. Lauder Brunton, an English physician unexcelled as a careful observer, "that almost every individual passes out of this world in a condition of anæsthesia."

To say with certainty that a patient, no matter how serious his condition, must die, is not so simple as it seems, and doctors have often erroneously given a fatal prognosis. Dr. Kussmaul, an eminent German physician, who was an enthusiastic dissector, convinced many of his patients of the wisdom of submitting the dead to a post mortem examination. On one occasion he was asked by the father of a girl, supposed to be dying, to perform an autopsy. The doctor, who was himself of the opinion that the girl would die, replied that he could not speak of the matter until the girl was dead. She recovered. In another case, a patient given up for lost by the family physician, who said improvement was out of the question and treatment not worth trying, the sick person, under the care of another physician, lived two years and nine

months. Only the other day in France, a woman who was supposed to be on her death bed, was sprinkled with nitric acid mistaken for holy water. This patient got well. The story is told of a doctor seeing a patient in an apparently moribund state and giving his unhesitating opinion that death would occur inside of three hours. A week later, driving past the house, the doctor saw the supposed dying man busily engaged in repairing the front porch. It is related of a well known physician that he once saw a desperately sick man in consultation and some time later sent a bill for his fee to the estate of the dead man. But the man himself answered the doctor's communication. There seems to be no end to such instances of mistaken prognoses. There is more than one physician to-day in the position of an eminent medical man who ten years ago was positive that a certain gentleman had only a few weeks to live, and, who now every time he sees that patient on the street feels like the proverbial thirty cents. If portable holes in the ground were in the market this doctor would buy a big one and carry it around with him in case of emergency.

A New York preacher impertinently remarked because the surgeons succeeded in saving the life of a man who had been severely injured in a railroad disaster: "They did save his life, though for what practical purpose I cannot tell—unless possibly for a damage suit." Meseems, it is up to this peculiar minister to enlighten the world by telling us for what practical purpose his own life is preserved. He is certainly, as a disseminator of Christian virtue, a failure.

A certain novelist, whose inexhaustible think tank always has the tap turned on full force, also takes a gratuitous vituperative fling at the medical profession. Because his physicians prolonged a certain man's life several months, by using all the latest therapeutic devices conceived by the master minds of the medical profession for the alleviation of suffering and the saving of life, she says: "Such skill seems to me as wicked as it is selfish. . . . The doctors and nurses, of course, realize the financial gain for them by keeping the poor patient from his certain goal as many weeks as possible." We are also assured by her in connection with another vital subject that "There is as great an evil in prolific child bearing as in race suicide." So it seems that she has well fixed schemes both for regulating our incoming into the world as well as the way we should depart.

Any physician who would assert that he would kill a patient beyond hope from his medical skill would soon find himself without a practice, for few people would intrust themselves to his care; and if he depended upon support of those who believed as he did on the question of euthanasia he would have a very limited number of patients to treat. If sick people were so anxious to die, as is generally supposed, we would hear more of invalids committing suicide. That avenue of escape is always open to them if they wish to take advantage of it, but of all the people who kill themselves not ten per cent. do it because of bad health. The very people who are so ready to counsel legal murder would very likely change their minds if the question concerned themselves. Not long ago there was a Russian society having for its object the killing of the aged and infirm. A sufferer from rheumatism who objected to dying informed the police and caused the arrest and trial of three brothers for conspiracy to murder.

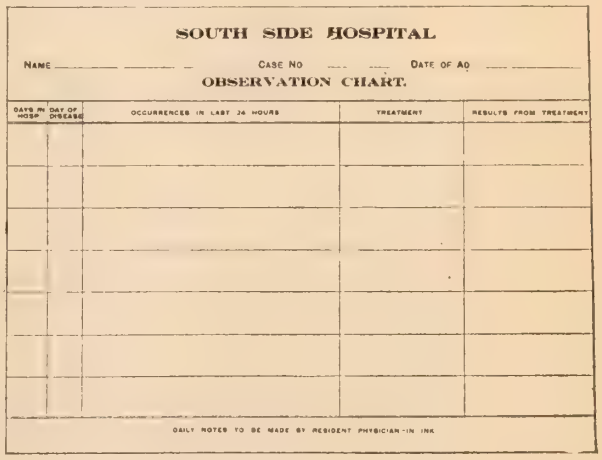
William Rainey Harper, the late president of the University of Chicago, when he knew that his days were numbered acted the part of a man. Like U. S. Grant and Robert Louis Stevenson, he accepted the inevitable with fortitude and courage. Nothing that these men did during their splendid lives will redound so much to their credit as the way in which they faced the end. So all of us must die. Some may luckily pass away like a flash of lightning. None has a right to expect the act of dissolution to be a pleasant process. It will have a more pleasant impression upon those you leave behind if you die in a manly fashion than if you elect to be put to death like a rabid dog.

64 Grove Street.

AN OBSERVATION CHART.

By Joseph H. Barach, M. D.,
Pittsburgh, Pa.

As time goes on and medicine becomes more of a science and less an art—the better for medicine.—as empiricism is being replaced by sound principles, we find that system is more and more essential,



SOUTH SIDE HOSPITAL

Name _____ Case No _____ Date of Ad _____

OBSERVATION CHART.

Days in Hosp.	Day of Disease	Occurrences in last 24 hours	Treatment	Results from treatment

Daily notes to be made by resident physician in ink

Reduced facsimile. The actual chart is 10½ inches wide.

and detailed records must be kept and preserved. The minutest symptoms and happenings may be very important links in the complete chain of evidence of the pathological physiology of a disease. Slight occurrences during a disease cannot all be kept in the mind, when at the end of the illness we are summarizing our experience with the hopes of adding to our store of knowledge. The only possible way to do this, is to keep daily records all through the disease. The immense value that a large number of such records must be, is obvious. In a comparatively few hospitals daily observations are recorded, but they should be kept in every hospital, and the practitioner would also find them of great value in his private work. The keeping of such records is a very simple and easy matter. In hospitals it should be done by the resident physician, being recorded during the evening or morning rounds. In private practice the nurse may be relied upon for the symptoms, and the physician himself will record the physical findings. Once this is

begun, how interesting becomes a case of pneumonia, or any other disease that may be eventful.

The chart here shown, I believe, is simple, and can be kept easily enough. It is of the same size as the classical temperature chart, contains space for a week's record, and is kept beneath the first temperature sheet. It records the day in the hospital of each occurrence, and the day of the patient's illness. It has a space for the therapeutical measures instituted, and one for the results from same. It should certainly discredit the use of many drugs and make us better therapeutists. The large space is for the symptoms and the findings on physical examination. With a few abbreviations, it gives plenty of room. This observation chart is not meant to replace anything that now goes to make up the usual history, it goes along with the temperature chart, the treatment sheet, and the patient's history. I would urge its use wherever such a chart has not as yet been instituted.

4502 FIFTH AVENUE.

Therapeutical Notes.

Treatment of Eczema of the Scalp, or Crusta Sactea.—For an infant ten months old, J. V. Shoemaker (*Medical Bulletin*, August, 1906) prescribes good hygiene, careful attention to diet (especially warning against too frequent feeding) and calomel as a purgative (half a grain in broken doses) every second day, followed by a little magnesia the following morning. Externally:

℞ Olei cadini, ...½ drachm;
Oleoti hydrargyri, ...½ drachm;
Olei morrhuæ, ...q. s. ad 3 ounces.
M. Sig.: Apply locally twice daily.

The Utility of Thymol in Beriberi.—F. Noc (*Le Progrès médical*, June 16th), as a result of studies in a hospital for natives at Choquan, near Sarjon, has come to the conclusion that the *Uncinaria americana* of Stiles plays an important rôle in the ætiology of beriberi. Out of seventy-seven cases of Chinese and Annamites suffering with this affection, he found seventy-four in whom the eggs of this parasite existed abundantly in the dejecta. The clinical phenomena of the two diseases are alike in all respects, and thymol, which is so effective in uncinariasis, ameliorates with surprising rapidity the manifestations of beriberi.

Variability in the Results from Nitroglycerin.—Vaquez (*Le Bulletin médical*, June 6, 1906) calls attention to the variability of the action of nitroglycerin. Its vasodilating action, demonstrated by physiological experimentation and supported by physiological observation under favorable circumstances (as shown by the sphygmograph and examination of the fundus of the eye), is totally absent in a large number of cases, even in comparatively large doses. In only exceptional cases can its action be regarded as identical with amyl nitrite.

A Remote Accident of Injection of an Insoluble Mercurial Preparation.—Ménétrier (*La Tribune médicale*) reported a case of acute infectious stomatitis appearing as a result of an insoluble mercurial preparation (probably calomel), which had been injected under the skin five months previously. A node was found in the gluteal region, and this, when extirpated, was found to contain mercury, remaining encysted at the site of an old injection. Following the removal of this lesion the patient rapidly recovered from the stomatitis. Evidently the examination of cases of stomatitis should not always be restricted to the mouth.

Diarrhœa in an Infant Produced by Medication of Mother.—A nursing infant of six months was found to be suffering with increasingly frequent bowel discharges, containing partly digested milk and considerable mucus. There was no fever or signs of enteritis. The diet of the mother was carefully guarded, but the diarrhœa continued. Finally, it was discovered that the mother had been taking sodium cacodylate by hypodermic injection of five centigrammes, twice a week for three weeks. When this medication was stopped, the diarrhœa in the infant ceased without further treatment and the stools became normal.

Eye Strain.—Hinshelwood in *Lancet*, July 14, 1906, tells us that in the treatment of eye strain it is important to impress on the patient that more is required than the prescription of suitable glasses. The patient must be instructed to use his eyes in an intelligent way so as to throw a minimum of strain on them and allow the function of vision to be exercised under the most favorable conditions. Attention must be given to the length of time the eyes are used for near work, to the size of the objects looked at, and to proper illumination. The intelligent cooperation of the patient is necessary in such cases to bring about a satisfactory result. Any local affection of the lids, the passages, or of the eye itself require careful treatment.

Boric Acid Dressing After Mastoid Operations.—Delobel (*Journal des sciences médicales de Lille*, March 31, 1906), after operating upon a mastoid for chronic middle ear disease, fills the cavity with recently sterilized, finely powdered, boric acid. He states that in the first place there is entire absence of odor after the first application of the powder, which is renewed every two days. This is in marked contrast to the former method of using gauze tampons. The rapidity of epidermization is at least equal by this method to that by tamponment. The only objection to this dressing is that it sometimes causes severe pains, radiating to the different branches of the trigeminus. They only last twenty-four to forty-eight hours after the first dressing, and may be relieved at once by acetphenetidine (phenacetin) (12 grains, taken in two doses) after the dressing, and if the sleep is disturbed, extract of opium may be given at night.

A Means of Preventing Dermatitis from X Rays.—At a recent meeting of the Société de Chirurgie of Paris (*Revue de chirurgie*, June, 1906), Bazy described an expedient which he had found effective in preventing burns of the skin during radiation. It was simply to filter the rays through a rather thick layer (4 to 5 centimetres) of absorbent cotton. In making the application the x ray bulb is enclosed in a funnel shaped director of flint, the large orifice being directed to the desired area on the surface of the

body. In this trumpet shaped extremity the tampon of cotton is placed. By adopting this expedient, a leucæmic patient had been able to bear seventy-nine exposures of fifteen minutes each, of which the greater number were given daily, with a tube which gave rays measuring six to seven on Benoit's radiochromometer. In another case, one of tumor of the breast, in which five exposures usually were followed by the commencement of a radiodermatitis, he had been able to give fourteen séances by filtering the rays as stated without causing any reaction of the skin.

For Anal Eczema.—In a case of a man, rather intemperate in his use of alcohol and tobacco, who had suffered with anal eczema for four years, J. V. Shoemaker (*Medical Bulletin*, July, 1906) ordered at first a liquid diet and purgatives to relieve the attending constipation. For this purpose a grain and a half of calomel with fifteen grains of sodium bicarbonate were divided into small doses, which were given every half hour, until the whole amount was taken. Three minims of beechwood creosote were administered in a glass of hot milk three times a day for four days. At the end of this period the patient was allowed solid food, and the following prescription ordered:

℞ Strychninæ sulphatis,.....0.6 grain;
Acidi nitrohydrochlorici dil.,.....0.5 ounce;
Glyceriti pepsini,.....qs. ad 3 ounces.
M. Sig.: A teaspoonful in a little water after each meal.

To relieve itching of the anus, the following local application was made:

℞ Camphoræ,
Chlorali hydrati, } .....āā 10 grains;
Phenolis,
Sulphuris præcip.,.....1 drachm;
Ung. aquæ rosæ, } .....āā 0.5 ounce.
Ung. zinci oxidi, }
M. Sig.: Apply to affected parts twice daily.

Pemphigus and Ulcerative Keratitis Caused by Potassium Iodide.—Hallopean (*Le Bulletin médical*, June 16th) reported to the French Society of Dermatology and Syphiligraphy a rare case illustrating the toxic action of iodine. The patient for a number of years had been accustomed to take large doses of potassium iodide and bromide both at the same time. In spite of being accustomed to the remedies, he had been recently attacked by an intense general eruption, which in character was bullous. It was thought on this account to be due to the iodine, since bromide eruptions are tuberculous or vegetating. In commenting upon this case, the reporter referred to another, presenting the same form of eruption in an old syphilitic. In order to verify the diagnosis the iodide was repeated, and immediately afterward the eruption was greatly aggravated, bullæ formed on the cornea of both eyes, leucoma resulted, and the patient became totally blind. This result is very exceptional, and was pronounced by Fournier to be unique in medical annals.

Massage of the Thorax and Gymnastic Exercises for Angina Pectoris and Allied Affections.—At the Congrès international de physiothérapie, held at Liege, V. Hasebrock, of Hamburg, reported (*Le Journal de médécine et de chirurgie*, Montreal, June 23rd) the results of several years' experience in the treatment, by mechanotherapy, of patients suffering with angina pectoris. He advocated the systematic employment of massage of the chest with carefully regulated gymnastics. The latter should be conducted in such manner as not to cause acceleration of the pulse or shortness of breath. These are the first symptoms of fatigue, which in these cases should never be permitted to occur. Hasebrock states that the results are variable, sometimes they are very successful, notwithstanding the violence of the attacks; sometimes they are negative, in spite of attentive treatment continued for several years. He denies that the anatomical changes in the heart and arteries constitute a contraindication to this treatment, even when the heart is much involved from the pathological point of view. Properly conducted gymnastics should not disturb the normal respiration or pulse rate, and should be followed by a feeling of well being. The treatment also usually reduces the severity and frequency of the attacks. Violent or fatiguing exercises increase the work of the heart, and intensify the suffering and the course of the malady. This has given rise to the notion that a person who suffers with arteriosclerosis should not take exercise. Properly regulated gymnastics given daily, on the contrary, will slow the pulse and lower the arterial pressure, and afford the best means of checking the dangerous period of arteriosclerosis and of preventing the occurrence of those pathological conditions which may end in apoplexy. Often the primary changes in arteriosclerosis are attended by neurasthenic symptoms, and in these cases the gymnastic exercises remove the neurasthenia by acting upon the sclerosis of the bloodvessels. This is especially observed among the patients of advanced years. On account of the increase of the blood pressure and the acceleration of the pulse and respiration by mountain climbing, as observed by Oertel, this form of exercise is unsuited to this class of patients, and differs fundamentally from regulated gymnastics in which the patient is required to breathe quietly through each exercise. The resistance method of Schott, of Nauheim, of treating heart disease should not be adopted if the exercise causes fatigue or a sense of exhaustion. The method used by the author is that of Zander, with apparatus that offers automatic resistance, which can be graduated according to the needs of the individual case. The uniformity of the movement is claimed to be specially advantageous, as it gives the best form of exercise under conditions most favorable to the prevention of fatigue. The explanation of the good effects of gymnastics in angina pectoris and allied states is found in the stimulation which it produces of the peripheral vasomotor system. The best evidence that the treatment does good is the feeling of relief experienced by the patient. The favorable cases are found to be those in which the pain in the chest (generally in the left side), combined with tenderness on pressure, show prompt relief from massage. Among these are cases of nodosities of the skin and muscular tissue which may cause reflex irritation of the vasomotor nerves.

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SOME OF THE NATION'S CREDITORS.

To men who have been disabled in our military service we pay generous pensions, and it is no more than just that we should do so, as no right minded person requires to be told. And we build monuments, not only to the memory of men of great renown or conspicuous bravery in war, but also to that of our soldiers and sailors *en masse*. All this is but a fitting manifestation of gratitude. Why, then, should it be a work of great difficulty to obtain legislative appropriations and individual contributions to funds for honoring the memory of noncombatant benefactors and for mitigating the lot of their widows and orphans? To come to the concrete, why does the Reed monument fund languish?

Some time ago there was started an effort to obtain by personal contributions a fund of $25,000, the income to be placed at the disposal of Dr. Walter Reed's widow and daughter during their lives, and the principal then to be employed in establishing a monument to his memory, either in the form of a material structure or in that of a memorial foundation for promoting scientific inquiry in his special field of work; but, as the *Outlook* says, it "has halted at $17,000." Surely the sum originally intended must be called meagre, for the income to be derived from it, if securely invested, would not provide the widow and daughter with such comforts as would be theirs if Dr. Reed had not died. Reduced practically to two thirds of the amount, it is ridiculously inadequate.

But it is a good sign when a nonmedical journal speaks in honor of a physician so forcibly as the *Outlook* does in its issue for August 11th. It leads to the hope that the people of the country may be roused to a proper sense of the tremendous benefaction conferred upon them by Walter Reed and his associates in the work of demonstrating the agency of mosquitoes in propagating yellow fever and the practicability of suppressing the disease. Our contemporary's enthusiasm seems to have been awakened by Dr. Howard A. Kelly's published account of Dr. Reed's work, and Dr. Kelly therefore must be congratulated upon having inspired a powerful effort to fasten general attention upon the beneficence of our army surgeons' achievements in Cuba and elsewhere in the direction of preserving us against the ravages of a dreadful disease.

THE SOUTHERN CALIFORNIA ANTITUBERCULOSIS LEAGUE.

There are many things that might reasonably be expected to go without saying. Not a few of them, however, need to be said, and said insistently. Among them are the things that Dr. Kress, of Los Angeles, says in his article entitled Our Duties as Citizens in the Prevention of Tuberculosis (see pages 331 *et seq.*). It was read at the recent annual meeting of the Southern California Antituberculosis League, and, since we do not doubt that its humane tenor represents correctly the purposes and methods of the league, we hope that its publication will strengthen the hands of that organization.

California has often and in manifold capacities been entitled to look upon herself as a general benefactor. We may be sure that California does not on that account meditate any falling off in good works. She recognizes that it is more blessed to give than to receive, and she is quite alive to the significance of the old fable of the belly and the members. She realizes that God did not make the climate of her southern section for her sake alone. She knows that it is the duty of every State and of every lesser community to work for the welfare of the nation and for that of the world. She will not shirk this duty, but certainly she is entitled to look for reciprocity and to insist that the rest of the country shall not burden her with its paupers or its moribund.

No harm can come to California from the decent and orderly settling of consumptives within her borders, but no argument is needed to show that it is injurious to the State that there should swarm upon her soil from the East consumptives unable to provide themselves with the necessities of life or so palpably stricken with death as

to have become incapable of observing ordinary sanitary precautions or been rendered viciously disposed to disseminate their disease. In short—and the same may be said of other health resorts—California, placing her salubrious conditions at the service of outsiders who are in need of them, has a right to demand of those outsiders a decent regard for her own welfare. She asks no more, and we cannot in fairness put her off with less. We count on seeing the Southern California Antituberculosis League achieve a great work in furthering the rational management of tuberculous disease, and not in California alone, for the league's influence for good will be felt in many another community.

LET US STOOP TO CONQUER.

"I admitted my ignorance with a frankness at which, considering my profession, I have often since had occasion to marvel." These words proceed from one of the characters, a physician, in Mr. Melvin L. Severy's story entitled *The Darrow Enigma*. They show the author's estimate of the difficulty with which the average medical man brings himself to acknowledge his ignorance, and the estimate is only too well founded in fact. The difficulty seems to us easy to account for. From the outset of his career it is impressed upon the physician by the public that he must either hold himself omniscient in matters pertaining to his profession or be accounted worthless. Of course it is not of physicians alone that this is true, for all men whose vocation is that of acting in an advisory capacity are subject to this sort of rating at the hands of the community; but doubtless practitioners of medicine are more frequently than others made to feel that, for them, to confess ignorance is to forfeit esteem.

Easy as the *descensus Averni* is it for a man to fall in with what is expected of him when he sees the expectation depicted in everybody's face, and it is no wonder that physicians soon acquire facility in simulating some knowledge which they do not possess. Ordinarily the foible may be productive of but little if any harm, though it is apt under certain circumstances to prove highly inconvenient to the subject of it and ultimately damaging to his reputation. A common illustration of its tendency in this direction is to be found in the two definite prognosis which the event fails to justify. Many a man now living and hearty recalls the fact that so and so many years ago a certain physician declared that he could not live more than six months. It is dangerous to prophesy; certainly it is prudent not to be pointedly specific in prophecy.

Medical men notoriously make a poor showing on the witness stand. For the most part this is due to their carefully cultivated inability to say "I don't know." It is in court more than elsewhere that the punishment for such an admission is speedy and crushing. "What, you don't know?" screams the cross examiner, and the inexperienced medical witness droops, fancying that he sees in the faces of the audience the spirit that makes a chance collection of street urchins urge on a terrier in pursuit of a rat. If the witness would only stand his ground, intimating that there were indeed some things which he did not profess to know, he would surely win credit; but the miserable dread of momentary humiliation too often bars the way. Let us strive to get over the feeling.

ACTINOMYCOSIS OF THE BREAST.

The localization of actinomycosis in the breast is one of the most infrequent, and at the present time no complete document has been published upon the subject. The cases reported are exceptional and few in number, but in a recent Lille thesis Poiteau passes in review all the cases recorded up to the time of his writing. Actinomycosis of the breast is generally a secondary infection; pleuropulmonary or cutaneothoracic actinomycosis usually precedes the mammary lesion, and the new focus extends by continuity or by a true metastasis. The disease has been met with between the ages of twenty-two and thirty-five years. Its evolution takes place in three stages. The first is represented by a tumor of the breast; in the second a peripheral inflammatory reaction arises around the tumor, and then an ulcerative process appears which announces the beginning of the third phase of the disease.

At first the lesion is absolutely latent and the patients hardly ever complain of spontaneous pain. It is only by chance that the neoplasm is discovered. Upon examination, a very hard, well defined mass without adhesions or inflammatory reaction in the neighborhood will be found. The patient's general health is not at all affected. Given these symptoms, it is easily understood how impossible it would be to affirm positively that the case was one of actinomycosis rather than of adenoma or a syphilitic or tuberculous neoplasm; consequently at this stage of development an absolute diagnosis is impossible. Later on other symptoms appear which throw some light on the nature of the affection. In a very short time the tumor becomes more resistant in certain spots and softened in others, its limits become less well defined, and it is finally transformed into a painful growth. The skin becomes

distended, thinned, and red at the most projecting point.

Given this acute attack, the diagnosis of sarcoma of the breast is naturally thought of, but in the latter affection the growth is not so distinctly limited as in cases of actinomycosis, and the remainder of the breast does not undergo the same modifications in sarcoma as it does in actinomycosis. Nevertheless, the diagnosis of malignant disease is more apt to be made, because, on account of its infrequency, actinomycosis is not likely to be thought of. Carcinoma of the breast at this period of development is not apt to be considered; in spite of the adhesions of the skin to the deeper structures it does not present the same characters, with a retracted nipple, and the lymphatics are not involved. Then, again, the age of the patient is not that ordinarily met with in cancer.

In a short space of time the skin becomes perforated on account of the inflammatory action, and severe pain appears, shooting down the corresponding arm. This is the beginning of the stage of suppuration, which is apt to be very protracted. The ulceration is not single, but usually occurs in several spots. Before breaking open, the growth presents points of fluctuation intermingled with hard ones. The fluctuating points project and are easily distinguished. Each little abscess opens, discharges its contents, and continues to suppurate without any tendency to the formation of granulation tissue. The borders of the ulcer are irregular, undermined, and atonic. The elimination of the actinomycotic products continues, and a pus varying in color, granular, and tinged with blood, containing the elements of necrobiotic connective tissue, is formed in greater or less abundance. No involvement of the axillary glands occurs, and this latter symptom is of great importance in the diagnosis. Carcinoma is always accompanied by enlarged lymphatics at this stage of its development, and their absence, the age of the patient, and the multiplicity of the fistulæ readily enable one to distinguish actinomycosis from malignant disease. Ulcerated sarcoma always presents a large ulcerated surface with thinning of the borders, and is easily distinguished from actinomycosis. The same may be said of syphilitic gumma, whose ulceration is circular or polycyclic, presenting an indurated, grayish fundus.

The only possible confusion to which actinomycosis may give rise is with tuberculous disease of the breast. In both affections the age of the patients is about the same, and there is the same evolution with fistulæ, but in tuberculous disease the axillary glands are usually involved. For that matter, the existence of any hesitancy would be the best argument for actinomycosis, and the search for actinomycotic grains in the pus should be resorted to. The evolution of the affection, tending progressively and fatally toward suppuration when left to itself, calls for early treatment. The administration of potassium iodide in large doses should be prescribed immediately, also that of arsenic. Injections of sodium cacodylate may also be tried. If the effect of medicinal treatment appears to be at all doubtful, a surgical operation should be resorted to without delay, and it consists in a free, total amputation of the breast.

THE CITY PHYSICIAN'S RESIDENCE.

The special appliances that are now almost a necessity in office practice, even with physicians who are not specialists, are constantly growing in number. It is comparatively simple to provide for them in an office building, and those of our colleagues who live in cities away from the Atlantic coast have very largely chosen such buildings for their professional work. The advantages of this plan are obvious, but perhaps there are some drawbacks. At all events, in the large towns of the East physicians have not yet in any great number taken kindly to the dissociation of the working rooms from the home; consequently the arrangement of rooms and passageways, and even the style of entrance, are to be considered carefully in the Eastern physician's choice of a residence, and probably these matters are of particular importance in New York. One of our New York architects, Mr. Eli Benedict, seems to have given special attention to them, and he has contributed an interesting article on the subject to the July number of the *Architects' and Builders' Magazine.*

The plans and elevations with which Mr. Benedict's article is illustrated—those, we take it, of houses already built or in course of construction—appear to show that there is no great difficulty about furnishing the physician with suitable working quarters without marring the outward appearance of his house or abridging the privacy and convenience of the domestic establishment. The style of house known as the American basement, the first floor of which is but a few steps above the street level, seems to be growing in favor with physicians, and such modifications of its usual construction as are required to adapt it to their special needs are not so extensive as to call for serious alterations in a house already built. The upper stories, of course, are in no way

different from those of ordinary houses. On one of the plans the kitchen is up one flight, on the same floor with the dining room and the parlor, and this arrangement strikes us as having certain advantages.

Perhaps a house so fashioned as to meet a physician's peculiar requirements will not especially commend itself to a subsequent tenant, provided he is not of the medical profession, and the physician who is about to build a house for himself may doubt if, on the whole, it is wise for him to plan it with particular reference to his own convenience. The question will be affected, it seems to us, by varying considerations, but at present whenever a dwelling especially suitable for a physician is vacated by him, there is always some other medical man ready to take it at a fair price. Failing this, the owner may confidently expect that at no distant time the arrangement of his house will have nothing to do with the value of the property, which will simply be that of the land.

A SIMPLE TREATMENT OF GASTRIC ULCER.

The medicinal treatment of ulcer of the stomach, and that, too, of a very simple sort, seems to have commended itself to Dr. Krausz (*Wiener medicinische Wochenschrift*, 1906, No. 1; *Berliner klinische Wochenschrift*, July 16th). He advises that on the first day (presumably on the day that the case comes under observation) the patient should take three pills, each containing 0.015 of a grain of silver nitrate and fifteen grains of white bole, and that an ice bag should be applied over the stomach. Thirst is to be allayed by rinsing the mouth with warm water. The patient is not to eat or drink anything. On the second day the ice bag is to be applied again, and in the morning the patient is to take one of the silver pills and then a spoonful (whether a teaspoonful, a dessertspoonful, or a tablespoonful is not specified) of a five per cent. solution of sodium bicarbonate in olive oil. Then he is to take one or two tablespoonfuls of ice cold milk. This sequence is to be repeated four times during the day. From the third day on, the silver pills and the ice bag are to be used no more. Before every *glass* of milk (previously mentioned only in tablespoonfuls) a "spoonful" of the oil mixture is to be taken.

Beginning on the fourth day, the patient may take a very thin milk mush. After the sixth day he is still restricted to mushy food, and before each meal he is to take a "spoonful" of the oil mixture. This treatment is kept up for two weeks. It is said in its favor that it is of short duration and is not so weakening as Leube's treatment. From the point of view of exactness of statement, something appears to us to be desired, but we do not know whether that is the fault of the author or of the *Referent*, Dr. H. Hirschfeld.

X RAYS AND THE COLOR OF THE HAIR.

It seems that heightened pigmentation of the hair is among the occasional effects of exposure to the Röntgen rays. At a recent meeting of the Paris Academy of Sciences (*Semaine médicale*, July 25th) Dr. A. Imbert and Dr. H. Marquès reported certain observations bearing upon the matter. One of themselves, it was first stated, having made frequent applications of the rays for a period of ten years, noticed that the hair of his head and of his beard, previously almost completely white, had progressively become so pigmented that it was of a darker hue than it had been originally, and the change had been observed by other persons.

In a subsequent instance these gentlemen had seen a similar effect. It was that of a man, fifty-five years old, who was under treatment with the rays for lupus of the cheek. At first he lost the hair near the ear of the affected side, but its place was taken by a new growth of hair, and near the ear the new hairs were almost completely black. This blackness gradually shaded off as the distance from the ear increased, but the pigmentation was discernible even in parts far removed. Finally the corresponding half of the man's moustache became darker than the other half, and without any previous falling out of the hairs composing it.

Imbert and Marquès add that in other cases they have observed a deepening of the color of light hair under the influence of the Röntgen rays. They do not pretend to explain the mechanism of this action. It is to be presumed that the effect is witnessed only in hairy parts directly subjected to the radiation, but no specific information is given as to the circumstances of the application.

THE NEW VOLUME OF THE INDEX CATALOGUE.

We have received the eleventh volume of the second series of the Index Catalogue of the Library of the Surgeon General's Office, United States Army. It carries the vocabulary from Mo to Nyström, and contains the second addition to the list of abbreviated titles of periodicals published in the ninth volume of the same series. The volume consists of 858 pages of text. It fully sustains the character of the preceding volumes of this most valuable work. It has been prepared under the direction of the librarian, Surgeon Walter D. McCaw.

News Items.

NEW YORK CITY AND STATE

The Cancer Laboratory of the University of Buffalo.—During the Toronto meeting of the British Medical Association it is expected that a delegation from the association will visit Buffalo for the purpose of inspecting this laboratory, which has recently been visited by one of its members, Dr. Charles A. Ballance, of London, who speaks in a highly commendatory way of the work being done there.

Inspector of Nurse Training Schools.—The State Civil Service Commission will receive applications until September 4, 1906, for the position of Woman Inspector of Nurse Training Schools in the State Department of Education. The salary is from $1,800 to $2,100. Candidates must be citizens of the United States, legal residents of New York State, registered nurses, and graduates of a registered nurse training school with at least five years' experience since graduation in supervision, administration, or instruction in a nurse training school. Application forms and particulars of the competition may be obtained by addressing Charles S. Fowler, chief examiner of the commission, at Albany.

The Chinese Hospital.—According to the *Evening Post*, one of the least known charities, probably, in this city, is the Chinese Hospital at No. 105 Park Street, a few doors west of Mott Street, which is called in Chinese the Oriental Dispensary. It stands opposite the Roman Catholic Church of the Transfiguration, and is a small, two story brick building painted red, with its Chinese name in large yellow characters over the door. The institution was established four years ago, and it is said to be the only Chinese hospital in this country. Nearly all the cases treated here are those of ordinary diseases. Surgical cases are very few. Patients who cannot pay receive free treatment, while those who are able to do so pay for their medicine and their food only. There is no regular rate for board, as the pay patients are charged according to the food they order, and they can have what they choose, if approved by the attending physician. There is no resident medical staff, but an American physician, who lives close by, is called in to attend cases when the patient does not have his own doctor, and the hospital makes no charge for his services.

PHILADELPHIA AND THE MIDDLE STATES.

New Buildings for the Episcopal Hospital.—Plans are out for the erection of a dwelling for the superintendent of the hospital, and for a building, 128 x 81.5 feet, to be used as an isolation ward, on the grounds of the institution.

Delaware Antituberculosis Society.—This association was formed last week and will represent the State of Delaware. The ground for a sanatorium has been donated by one of the Du Pont family. The St. Barnabas Guild is interested in the work. Patients will be accepted shortly and will be cared for in tents until the buildings are ready.

Instructions for the Poor in Taking Care of the Children During the Summer.—The department of health has issued a pamphlet containing all practical necessary information as to the proper precautions against disease among infants. Dr. Hollopeter is assisting the department. The circulars will be printed in Italian, Yiddish, and English.

Bequests.—By the will of the late Horace M. Potts $5,000 is bequeathed to the Hospital of the University of Pennsylvania for the endowment of a free bed, and $10,000 to the Orphans' Home and Asylum for the Aged Insane of the Lutheran Church. With the exception of a few bequests the remainder of his fortune was left to the Academy of the Natural Sciences and the University of Pennsylvania.

Glanders and Anthrax in New Jersey.—Recently Dr. Henry Miller, of the State Board of Health, has been extremely busy fighting outbreaks of glanders and anthrax. The first named disease broke out among the horses at Perth Amboy. Dr. Mitchell believes that it was brought to Perth Amboy by horses bought at "bargain" sales in New York city. The three most prolific sources of the contagion of glanders are tie posts, blacksmith shops, and public watering troughs. The disease is spread through the nasal secretion, and it is therefore obvious why the things named are sources of infection. The outbreaks of anthrax in New Jersey are practically confined to the marshy lands bordering creeks and rivers in South Jersey, chiefly in Cape May, Cumberland, and Salem counties. The present outbreak first appeared in Cumberland. The State Board of Health took hold with energy and induced all the cattle owners in that section to vaccinate their animals with antitoxine. Between eight and nine hundred were thus treated and about thirty head were destroyed. Another outbreak of the disease was discovered in Salem county, and here a thousand head were vaccinated, but latest reports show that a thousand more will need to be treated. It is thought that the outbreak has been stamped out for the present, but it is liable to break out again on those marshy meadows at any time. Its prevalence on the marshes bordering the streams in the counties named is due, it is thought, to the washings from infected South American hides used in large tanneries in Delaware, on the opposite side of the Delaware River.

The Health of Philadelphia.—During the week ending August 4th, the following cases of transmissible disease were reported to the bureau of health:

	Cases.	Deaths.
Malarial fever	1	0
Typhoid fever	99	10
Scarlet fever	25	0
Chickenpox	3	0
Diphtheria	41	6
Cerebrospinal meningitis	1	2
Measles	13	1
Whooping cough	58	10
Tuberculosis of the lungs	121	62
Pneumonia	19	23
Erysipelas	3	0
Puerperal fever	1	0
Mumps	3	0
Cancer	15	17

The following deaths from transmissible disease were also reported: Tuberculosis, other than tuberculosis of the lungs, 6; tetanus, 1; dysentery, 4; diarrhœa and enteritis, under two years of age, 99. The entire infant mortality amounted to 197; under one year of age, 171; between one and two years of age, 26. The total mortality was 511, corresponding to an annual death rate of 18.09 in a thousand in an estimated population of 1,469,126. There were 41 still births, 12 females and 29 males. The temperature was moderate, the humidity was quite high, and 3.97 inches of rain fell.

BOSTON AND NEW ENGLAND.

The Malden, Mass., Hospital.—Dr. Arthur T. Gage, of Winchester, Mass., has been appointed house physician to this hospital, succeeding Dr. W. W. Kingsbury, who will take up practice in Malden.

The Mortality of Boston.—The number of deaths reported to the board of health for the week ending August 4th was 238, against 234 the corresponding week last year, showing an increase of 4 deaths, and making the death rate for the week 20.5. The number of cases and deaths from infectious diseases reported was as follows: Diphtheria, 9 cases and 2 deaths; scarlatina, 3 cases and 1 death; typhoid fever, 10 cases and 1 death; measles, 10 cases and 1 death; tuberculosis, 26 cases and 19 deaths; cerebrospinal meningitis, 6 cases. The deaths from pneumonia were 14, whooping cough 12, heart disease 31, bronchitis 3, and marasmus 14. There were 12 deaths from violent causes. The number of children who died under one year of age was 76; the number under five years of age 94; the number of persons who died over sixty years of age was 40.

BALTIMORE AND THE SOUTH

Personal.—Dr. Louis Leroy, of Nashville, Tenn., State bacteriologist, has accepted the chair of the principles and practice of medicine, in the Memphis College of Physicians and Surgeons.

The Memphis and Shelby County (Tenn.) Medical Society.—The following programme was arranged for a meeting of this society, held at Memphis, on Tuesday, August 7th: The Treatment of Amœbic Dysentery, by Dr. J. L. Jelks; The Treatment of Facial Blemishes, by Dr. W. S. Lawrence.

The Alumnæ Association of the Memorial Hospital Training School for Nurses, Richmond, Va., was chartered on August 4th, by the State corporation commission. The association is wholly benevolent, being for the advancement of its members in their professional course, the promotion of the profession of trained nurse in the city of Richmond and in the State of Virginia, for the holding of meetings, the reading and discussion of papers pertaining to the work,

and for the cultivation of closer personal and professional relations between the members.

The Mortality of Baltimore During July, 1906.—There were 1,079 deaths in Baltimore in July, according to a report issued on August 2nd, by the health commissioner. For the same period last year there were 1,163 deaths in the city. The deaths in July last comprised 435 white males, 394 white females, 115 colored males, and 135 colored females. There were 494 deaths of children under five years of age, forming 45.78 per cent. of the total number of deaths. The following infectious and contagious diseases were reported during the month, as compared with the corresponding month of last year:

	1905.	1906.
Smallpox	0	0
Diphtheria and pseudomembranous croup	41	48
Scarlet fever	32	31
Typhoid fever	60	107
Measles	89	30
Mumps	3	2
Whooping cough	28	18
Varicella (chickenpox)	1	8
Tuberculosis	59	67
Totals	313	311

The following were the principal causes of death:

Typhoid fever	10	14
Malarial and intermittent fever	2	1
Smallpox	0	0
Measles	5	1
Scarlet fever	0	5
Whooping cough	6	9
Diphtheria and pseudomembranous croup	4	7
Influenza (la grippe)	0	1
Dysentery	16	11
Erysipelas	1	0
Septicæmia (blood poisoning)	2	1
Tuberculosis pulmonalis	105	102
Other tuberculous diseases	25	12
Cancers	50	36
Congestion of the brain (apoplexy)	17	35
Tetanus (lockjaw)	1	3
Heart diseases	64	63
Bronchitis	11	8
Pneumonia	49	35
Diarrhœa and enteritis, under two years of age	305	269
Diarrhœa and enteritis, over two years of age	24	15
Bright's disease	52	66
Puerperal septicæmia	2	2
Old age	19	16
Suicides	6	7
Accidents	37	54
Homicides	3	2

CHICAGO AND THE WEST

The Ohio Valley Medical Association will hold its eighth annual meeting at Louisville, Ky., on November 14 and 15, 1906. The address to the profession and the public will be delivered by Dr. J. Clarence Webster, of Chicago.

A Medical Building in San Francisco.—A steel and brick fireproof building, of the latest type, is to be erected at once at the northeast corner of Polk and Sutter Streets. The structure will be used as an office building. It will have a considerable area, as it will extend 110 feet on Polk Street and 120 feet on Sutter Street. As the offices are to be used by physicians and dentists, and nearly all the apartments are already engaged by applicants, the work will be rushed to completion as rapidly as possible, though the substantial character of the edifice will not be slighted. The company which is handling the building announces that it will be ready about October 6th of this year.

The Eastern Hospital for the Insane at Kankakee, Ill.—Several much needed improvements are to be made at this hospital, as a result of a conference held on July 31st by State officials interested in the institution. It was decided to begin at once improvements in the system of nursing, especially at night, the training school for nurses and attendants, and in the pathological service. Certain other changes are to be taken up at the joint meeting of the governor, hospital superintendents and trustees, the civil service commission, and others, to be held in October, under the call and direction of the State board of charities.

Statement of Mortality in Chicago for the Week Ending August 4, 1906, compared with the preceding week and the corresponding week of 1905. Death rates computed on U. S. Census Bureau's midyear populations—2,049,185 for 1906, 1,990,750 for 1905:

	Aug. 4, 1906.	July 28, 1906.	Aug. 5, 1905.
Total deaths, all causes	501	542	567
Annual death rate in 1,000	12.75	13.79	14.85
By sexes—			
Males	283	319	322
Females	218	223	245
By ages—			
Under 1 year of age	139	146	170
Between 1 and 5 years of age	49	56	47
Between 5 and 20 years of age	29	54	45
Between 20 and 60 years of age	187	202	214
Over 60 years of age	97	84	91
Important causes of death—			
Apoplexy	5	10	14
Bright's disease	34	34	38
Bronchitis	6	3	9
Consumption	58	55	71
Cancer	27	20	33
Convulsions	5	9	14
Diphtheria	9	5	3
Heart diseases	32	39	38
Intestinal diseases, acute	116	122	129
Nervous diseases	10	12	19
Pneumonia	32	37	30
Scarlet fever	7	11	1
Sunstroke	2	3	0
Suicide	7	4	5
Typhoid fever	4	4	6
Violence (other than suicide)	27	46	37
Whooping cough	2	3	0
All other causes	118	125	116

GENERAL.

Oriental Diagnostics.—According to the *Evening Sun*, a native doctor in India, in certifying to a death, wrote: I am of a mind that he died (or lost his life) for want of foodings, or on account of starvation. Maybe also for other things of his comfortables.

A New General Hospital at Washington.—Plans and specifications for the new general hospital at Washington have been completed and the contract will be awarded about October 1st, bids having been invited by the depot quartermaster. The building, which is to be on Brightwood Road, will cost about $300,000, and is to be of brick with a stone foundation. It will be the best example of military hospital construction and equipment in the world, as the surgeons who assisted in planning the building have inspected and investigated hospitals in all countries and have utilized this information in formulating plans for the new institution in that city.

Charged With Cheating in Examination for Promotion.—Two assistant surgeons of the navy have been ordered tried by courtmartial in Washington, D. C., on the charge of having cheated in their examination for promotion, which they recently took in Washington. The charges against these two assistant surgeons were preferred immediately after the conclusion of their examination for promotion. The charge of cribbing in an examination by an officer in the United States Navy, says the *Army and Navy Journal*, is most unusual, and it is sincerely to be hoped that a mistake has been made in this case and that the two assistant surgeons may be able conclusively to show that the charge preferred against them is groundless.

Cuban Pharmacies.—There are in Havana, according to Consul General Steinhart, 250 drug stores for the 250,000 inhabitants, and the same ratio may be accepted for the other cities of Cuba. There are also many organizations and societies which employ doctors and their own pharmacists and dispense medicine to the society members. Physicians, however, do not often dispense medicine. The average number of prescriptions compounded is less than in the United States. The pharmacist is not permitted by law to prescribe, and the relation between physicians and pharmacists is friendly. Doctors prescribe a great amount of ready made or patented medicine. Prescriptions are the best part of the drug business in Cuba, as pharmacists here sell less of toilet articles, cigars, etc., such as are sold in American drug stores. The customer is considered the proprietor of his prescription, which is returned to him after being entered in the prescription book. Pharmacists in the larger Cuban cities fill foreign prescriptions as well, consulting the foreign pharmacopœia of the country from which it comes. The Cuban pharmacists generally prepare their own tinctures and ointments. The supervision of pharmacies by the government is nominal. A pharmacist's license cannot be revoked. His store may be ordered closed or he may be punishd by a fine, but he has the right to open a new store. The standing of pharmacists socially is like that of any other professional men. The pharmaceutical boards consist of pharmacists only. The only board in Cuba at present is formed by the professors of the university. No Cuban pharmacopœia yet exists, but the Society of Pharmacists in Cuba is engaged in the translation of the United States Pharmacopœia from English into Spanish. When this is completed it will be put into use.

The Toronto Meeting of the British Medical Association.

THE approaching meeting of the British Medical Association, in Toronto, Canada, August 21st to the 25th, promises to be a red letter event in the history of the Queen City of Western Canada.

The whole meeting together with its many sections and allied events has been planned upon a vast and comprehensive scale. The City of Toronto, formerly called York, owing to its position on Lake Ontario, its wealth and influence, peculiarly lends itself to this the second meeting of the British Medical Association held in Canada. The first was held in the metropolis of Canada—Montreal—in 1897, under the able presidency of Thomas G. Roddick, M.D., LL.D., F.R.C.S., of that city.

A passing glance at Toronto and its recent history will be germane to the occasion. The city itself is the second in size of our good and enterprising neighbor to the North, the Dominion of Canada. Toronto is the capital of the Province of Ontario, the most populous of the several provinces in its Dominion. The population of the Province of Ontario is 2,200,000, its area in square miles is 260,862. Its situation on the lake is exceptionally fine for all the purposes of trade and residence. It is a railroad centre of the first magnitude. Its growth in manufactures and wealth in the last ten years has been truly phenomenal. Today, its output of manufactured goods equals in value that of the great wheat output of the Northwest of Canada, the same being estimated at from $65,000,000 to $70,000,000. A contrast will best develop this fact. In 1891 the total value of manufactures was but $45,000,000. Thus the increase has been fully fifty per cent. in fifteen years. It places the city of Toronto at the front as a manufacturing centre in the adjacent portion of Canada. The capital invested in the manufacturing industries is $60,000,000, as contrasted with $31,000,000 in 1891. Its supremacy as a manufacturing and shipping centre is unchallenged. Apropos of its railroads and their traffic, apart from endless passenger trains, over two hundred freight trains arrive and depart daily. In 1900 442,739 head of cattle were received and shipped, whereas in 1893 only 211,156 were shipped.

In education, trade, and general growth, its course has ever been upwards and onwards. The vistas of successes, past, present, and future, have an eloquence all their own—the whole a cause of a just pride to all Torontonians. While the successes of Toronto are due largely to her fine geographical position, the merchant princes, her leaders in the educational callings, must not be forgotten. It is an English city in a very just and perfect sense. To return to the measure of things material, what are her banks doing? That indeed tells a tale. The clearing house banks of the city of Toronto cleared in 1900 the vast sum of $513,696,401. In 1905 the clearings had risen to $1,047,490,701, an increase of over one hundred per cent. in just five years. What of her Custom House? It also has a tale of success and greatly increasing prosperity. The duties collected in Toronto in 1898 amounted to $4,533,005, while in 1905 the same had risen to $9,524,610, an increase of over one hundred per cent. in seven years.

University of Toronto.—Meeting place of the association.

So much for the commercial or trade view of Toronto, a picture in itself full replete with suggestion. What of Toronto as a centre of arts, science, music, and general teaching? In short, it is a typically English university town. Her institutions of learning are many—the museums and libraries make a noble background to the wealth and commercial activity along her water front. Among a few of many notable societies are the Ontario Society of Artists, the Woman's Art Association, the Central Ontario School of Art, the

Children's Hospital.

Canadian Historical Society, the Toronto Art League, the British Empire League, Wycliffe, Knox, and Trinity Colleges, not forgetting the Upper Canada College, and, last but not least, the University of Toronto. The leading educational colleges and schools are all affiliated with the Provincial University, or the University of Toronto.

THE UNIVERSITY BUILDINGS.

Within easy access of the busy portion of the town is the famous University of Toronto. The buildings indeed make a magnificent pile, built of Canadian limestone—a material that lends itself to all that is beautiful and lasting in Canadian architectural work and design. The buildings were erected during the period from 1854 to 1859. The university, in keeping with the university customs and traditions of its mother country, old England, has a quadrangle of about two hundred feet square. The south face of the main building extends two hundred feet; in the centre is a very effective Norman tower, with a height of one hundred and twenty feet. The lower floor of the main building is used for lecture rooms, and the upper floors for a museum and libraries. A number of subsidiary towers enhance the architectural beauty of its whole. The western end is fully two hundred and fifty feet in length. It is the residential part of the buildings, and is used by the hundreds of men in annual attendance.

Among other classical and beautiful buildings we find the Houses of Parliament. They have an extensive frontage of four hundred and thirty-five feet, by a depth of two hundred and sixty feet. The central façade measures one hundred and twenty feet by one hundred and twenty-five feet. The main entrance has three noble arches, eighteen feet wide by twenty-six feet high. This entrance is flanked by the great towers with their copper clad domes and wealth of stone design. The buildings were six years under construction and cost $1,250,000.

The new Upper Canada College, at the head of Avenue Road, is a stately edifice. The institution was founded in 1829; for many years the college premises occupied by it were on King Street, in an old time building of red brick.

THE ORGANIZATION.

The president elect for the Toronto meeting is Richard Andrew Reeve, dean of the medical faculty of the University of Toronto. He will be assisted by many local committees.

There will be thirteen sections, which will meet on Tuesday, Wednesday, Thursday and Friday, August 21st, 22nd, 23rd, and 24th, from 9.30 a. m. to 12.30 p. m. The president, vice-presidents, and

Toronto General Hospital.

New Medical Building.

secretaries of each section constitute a Committee of Reference for that section.

SECTION IN ANATOMY.

President: Professor Arthur Robinson, Birmingham.

Vice-Presidents: Professor Alexander Primrose, Toronto; David Edward Mundell, Kingston; David Waterston, Edinburgh.

Honorary Secretaries: Charles Buckingham Shuttleworth, Toronto; Gawn Shaw Cleland, Toronto; J. Herbert Sanders, Toronto.

SECTION IN DERMATOLOGY.

President: Norman Walker, Edinburgh.

Vice-Presidents: Graham Chambers, Toronto; Harry B. Anderson, Toronto; Ernest Solly, Harrogate.

Honorary Secretaries: David King Smith, Toronto; Donald Macgillivray, Toronto; John Campbell Rankin, Belfast.

SECTION IN LARYNGOLOGY AND OTOLOGY.

President: J. Dundas Grant, London.

Vice-Presidents: George R. McDonagh, Toronto; Herbert Stanley Birkett, Montreal; John Macintyre, Glasgow; Hugh Edward Jones, Liverpool.

Honorary Secretaries: David James Gibb Wishart, Toronto; Geoffrey Boyd, Toronto; Adam Brown Kelly, Glasgow.

SECTION IN MEDICINE.

President: Sir Thomas Barlow, London.

Vice-Presidents: Professor Alexander McPhedran, Toronto; Professor James Stewart, Montreal; Alexander Napier, Glasgow; William Calwell, Belfast.

Honorary Secretaries: Robert Dawson Rudolph, Toronto; John Taylor Fotheringham, Toronto; Robert Hutchison, London.

SECTION IN OPHTHALMOLOGY.

President: Robert Marcus Gunn, London.

Vice-Presidents: George Herbert Burnham, Toronto; John W. Stirling, Montreal; Joseph Nelson, Belfast; Arnold Lawson, London.

Honorary Secretaries: James Metcalf MacCallum, Toronto; Duncan Neil McLennan, Toronto; Frank P. S. Cresswell, Cardiff.

SECTION IN OBSTETRICS AND GYNÆCOLOGY.

President: A. H. Freeland Barbour, Edinburgh.

Vice-Presidents: Professor James Algernon Temple, Toronto; Professor Adam H. Wright, Toronto; Professor William Gardner, Montreal; T. Arthur Helme, Manchester.

Honorary Secretaries: Frederick Fenton, Toronto; Kennedy Crawford McIlwraith, Toronto; Cuthbert Lockyer, London.

SECTION IN PÆDIATRICS.

President: George Alexander Sutherland, London.

Vice-Presidents: Henry T. Machell, Toronto; Allan M. Baines, Toronto; Otto Jackson Kauffmann, Birmingham; H. Betham Robinson, London.

Honorary Secretaries: Edward Stanley Ryerson, Toronto; Joseph S. A. Graham, Toronto; Ralph Vincent, London, W.

SECTION IN PATHOLOGY AND BACTERIOLOGY.

President: Professor J. G. Adami, Montreal.

Vice-Presidents: Professor John J. Mackenzie, Toronto; Professor Walter Thomas Connell, Kingston; Ingersoll Olmsted, Hamilton; Professor Robert Fraser Calder Leith, Birmingham.

Honorary Secretaries: Gideon Silverthorn, Toronto; Harold C. Parsons, Toronto; Frank George Bushnell, Brighton.

SECTION IN PHYSIOLOGY.

President: Professor William Dobinson Halliburton, London.

Vice-Presidents: Professor Archibald B. Macullum, Toronto; Professor Wesley Mills, Montreal; Professor Charles Scott Sherrington, Liverpool.

Honorary Secretaries: Herbert E. Roaf, Liverpool; Gustav Mann, Oxford.

Normal School.

SECTION IN PSYCHOLOGY.

President: William Julius Mickle, London.

Vice-Presidents: Nelson Henry Beemer, Toronto; Charles Kirk Clarke, Toronto; Reginald Langdon-Down, London.

Honorary Secretaries: Alfred Thomas Hobbs. Guelph, Ontario; Goldwin Howland, Toronto; John Turner, Brentwood.

SECTION IN STATE MEDICINE.

President: Frederick Montizambert, Ottawa.

Vice-Presidents: E. P. Lachapelle, Montreal; Charles Sheard, Toronto; Peter Henderson Bryce, Ottawa; Joseph Groves, Isle of Wight.

Honorary Secretaries: Joseph D. Page. Quebec; F. G. E. Pearson, Brantford, Ontario; Edward Sergeant, Preston; Arthur A. Mussen, Liverpool.

SECTION IN SURGERY.

President: Sir Hector Clare Cameron, Glasgow.

Vice-Presidents: Fred. Le M. Grasett, Toronto; Francis J. Shepherd, Montreal; Alfred B. Atherton, Frederickton, N. B.; Tecumseh Kingsley Holmes, Chatham, Ontario.

Grace Hospital.

Honorary Secretaries: Harry A. Beatty, Toronto; Frederick William Marlow, Toronto; Sinclair White, Ranmoor, Sheffield.

SECTION IN THERAPEUTICS.

President: Donald MacAlister, Cambridge.

Vice-Presidents: John Lorenzo Davison, Toronto; Alexander D. Blackader. Montreal; Sir Alan Reeve Manby, East Rudham; Professor J. Rose Bradford, London.

Honorary Secretaries: Velyien E. Henderson, Toronto; Charles Potter Lusk, Toronto; E. R. Morton, London.

THE MEETING.

The meetings will be held mornings, afternoons, and evenings, and the programme, as it stands at present, is as follows:

PROGRAMME OF PROCEEDINGS.

TUESDAY, AUGUST 21, 1906.

9.30—12.30 a. m.—Meeting of Sections.
2.30 p. m.—Address of Welcome; Introduction of Guests, Delegates, etc., and President's Address.
4.30 p. m.—In the University Quadrangle a Reception and Garden Party by the President-elect and Mrs. Reeve.
8.30 p. m.—Address in Obstetrics, Dr. W. S. A. Griffith.
9.30 p. m.—Reception by the Lieutenant-Governor.

WEDNESDAY, AUGUST 22ND.

8.00 a. m.—National Temperance League Breakfast.
9.30—12.30 a. m.—Meetings of Sections.
2.30 p. m.—Address in Medicine, Sir James Barr. M. D.
4.30 p. m.—Garden Parties.
8.30 p. m.—Address in Surgery, Sir Victor Horsley, F. R. S.
9.30 p. m.—Reception.

THURSDAY, AUGUST 23RD.

9.30—12.30 a. m.—Sectional Meetings.
4.30 p. m.—Garden Parties.
7.30 p. m.—Annual Dinner.

FRIDAY, AUGUST 24TH.

9.30—12.30 a. m.—Sectional Meetings.
2.30 p. m.—General Meetings.
4.30 p. m.—Garden Parties.
Excursions.
8.30 p. m.—Soirée.

SATURDAY, AUGUST 25TH.

Excursions to the Niagara Power Company's plant, through the courtesy of Sir Henry M. Pellatt.
Excursion to Muskoka.
Excursion to Lambton, through the courtesy of the President, Mr. Austin.

Fully three hundred active members of the association from England, Scotland, Wales, and Ireland are now en route to Toronto. Fully one hundred American physicians, surgeons, and specialists will attend, many of whom will read papers, and the majority will take part in the discussions in their respective sections.

ENTERTAINMENTS.

In addition there will be the usual lunches, garden parties, and excursions to near and distant points. Special excursions have been arranged for the wives and families of the members of the British Medical Association, as well as for the guests of the same; half rates, it is hoped, will be granted by the railway and steamboat companies of Canada. Special lunches and excursions have been planned for the ladies. A special event will be the annual dinner of the association. At the last dinner, held in Montreal, in the year 1897, five hundred and fifty sat down in the main dining hall of the Windsor Hotel. On Saturday, the 21st, a special excursion will visit the Falls of Niagara and the power houses on the Canadian side. The party will be the guests of Colonel Sir Henry M. Pellatt, commanding the Queen's Own, of Toronto. His recent visit to this city, with his gallant regiment, left a most favorable impression.

In drawing this preliminary article to a close, the writer wishes to do, in the words of the late Rev. Dr. Edward H. Kraus, a gold medallist of McGill University, and formerly first president of the New York Graduates Society of McGill University, at a dinner given by the British Schools and Universities Club of New York City. He closed an eloquent address thus: "God grant that Uncle Sam and John Bull may walk down the avenues of the future arm in arm."

Pith of Current Literature.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

August 9, 1906.

1. Stokes-Adams Disease, with Report of Three Cases, By WALTER R. STEINER.
2. Introduction to the Study of the Fundamental Cause of Splanchnoptosis—Abdominal Incompetence: A Developmental Factor (*To be continued*), By AGNES C. VIETOR.
3. What Should Be the Attitude of Public Sanatoria Toward Cases of Tuberculous Laryngitis; with Suggestions as to the General Plan of Treatment of Such Cases in Sanatoria, By GEORGE L. RICHARDS.
4. Accident Litigation—The Popular "Graft," By FRANK C. RICHARDSON.
5. Typhoid Perforation: Operation: Recovery, By FREDERIC J. COTTON.

1. Stokes-Adams Disease, with Report of Three Cases.—Steiner says that Stokes-Adams disease is an affection which presents clinically the following features: (1) A slow pulse, usually permanent, but sometimes paroxysmal, falling to 40, 20, or even 6 per minute; (2) cerebral attacks which consist in vertigo of transient character, syncope, pseudoapoplectiform attacks or epileptiform seizures; and (3) visible auricular impulses in the veins of the neck, the beats varying greatly, a 2:1 or 3:1 rhythm being the most common (Osler). The malady is most commonly seen in persons beyond middle life. Males are more frequently affected than females by a ratio of 3:1 (Quinan). Syphilis and myocardial changes appear to be contributing factors, especially the former in the group of younger patients. Alcohol and hard work, favoring the onset of arterial sclerosis, should also be here mentioned. In two cases traumatism appeared to have played a part. By the work of His, Jr., Humblet, Hering, and Erlanger the affection appears to be identical with experimental heart block, and three cases have since exhibited pathological lesions which bear out the correctness of their views. The author has seen, during the last three years, three cases which he reports. The first patient suffered from syncopal attacks, recurring in the same month, at intervals of a year and more. He showed a slow pulse, venous pulsations in the neck, arteriosclerosis, cardiac hypertrophy, with gradual improvement during the further course of the disease. The second patient died suddenly, about two years after apparent onset of the disease, which was an epileptiform seizure and a syncopal attack; he showed a slow pulse, but no venous pulsations in the veins of the neck, there was slight arteriosclerosis, and cardiac hypertrophy. The third patient suffered from syncopal attacks, slow pulse, venous pulsation in the vein of the neck, and cardiac hypertrophy.

4. Accident Litigation. The Popular Graft.—Richardson states that the rapid and steady spread of the accident litigation mania is well illustrated by the somewhat startling statistics obtained by E. Parmelee Prentice, from an examination of the records of the Chicago courts. In 1875, there were altogether about 200 personal injury suits pending in Cook County. During the first six months of 1890 the number of these suits brought in Cook County was 346, the total damages claimed being $2,814,860. During the corresponding six months in 1896, the number of such suits brought in Cook County was 893, and the total amount of damage claimed was $13,510,000. It would be reasonable to assume from these figures that there are now pending in Cook County 3,600 of these cases, and that the damages claimed are between $50,000,000 and $60,000,000. Of course this enormous increase is out of all proportion to the increase in the number of accidents. The author wishes to point out the possibility and importance of differentiating "litigation psychoses" from what may be called true traumatic neuroses, and thus avoiding the danger of contributing to injustice either to claimant or defendant. For this purpose he has tabulated one hundred medicolegal cases which have come under his observation. He comes to the conclusion that without the corroborative proof of objective symptoms, we are, in the great majority of accident neuroses, justified in regarding the alleged injury as willfully exaggerated or as belonging to the so called litigation psychoses. There can be no more potent factor in influencing the process of litigation than the attending physician. It is to him that the patient turns from an importunate lawyer for advice. His testimony is a necessity in every court trial. Upon him rests largely the burden of correctly representing and interpreting the facts of the case. With such responsibility confronting him it is imperative that he should be most thorough in his investigations. He should keep constantly in mind that his function is scientific and not commercial. He must in all cases assume an attitude which is not sympathetic, but critical.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

August 11, 1906.

1. The Pædiatric Outlook. Chairman's Address in the Section on Diseases of Children at the Fifty-seventh Annual Session of the American Medical Association, Boston, By W. C. HOLLOPETER.
2. Some Unheeded Principles Involved in the Dietetic Management of Infants During Hot Weather, By GODFREY R. PISEK.
3. Indications for Surgical Intervention in Infections of the Biliary Tract, By JOHN B. DEAVER.
4. Capillarity in Intestinal Sutures, By F. GREGORY CONNELL.
5. The Differential Diagnosis and Prognosis of Tumors of the Uveal Tract. By H. V. WÜRDEMANN.
6. So Called Leucosarcoma of the Iris, By E. V. L. BROWN.
7. Injuries to the Eye with Birdshot, By WILBUR B. MARPLE.
8. Appendicostomy. By JAMES P. TUTTLE.
9. Sarcoma of the Nasopharynx. Treatment by Injections of Adrenalin. By JOHN EDWIN RHODES.
10. An Infectious Disease of Doubtful Nature. Preliminary Note, By LEONARD K. HIRSHBERG.

2. Some Unheeded Principles Involved in the Dietetic Management of Infants During Hot Weather.—Pisek gives the following eight rules for dietetic management of infants during hot weather: 1. In warm weather keep a light woolen garment over the abdomen to prevent sudden chilling of the skin and consequent retention of heat by suppression of perspiration. 2. Bathe the infant twice daily to remove fat and salts left by the evaporated sweat. These retard the evaporation of perspiration and thus partially prevent heat excretion. 3. Give plenty of cool boiled water to drink, so as to replace water lost as perspiration. 4. Pasteurize food of all well infants to retard decomposition. 5. If the weather is close or muggy, or the humidity is high, dilute the food to one half with boiled water. In very humid weather with high temperature stop milk altogether and feed gruels until the humid condition is passed. 6. On warm, humid nights do not give milk feedings, because the humidity is higher at night than in the daytime, although the temperature may be lower. Feed gruels or whey, which produce little heat. 7. For diarrhœa give castor oil or calomel to eliminate decomposing food. Stop all milk feedings temporarily. If the air is hot but dry, milk feedings may be resumed soon. If there is high humidity, feed gruels or whey to reduce heat production and also to starve out putrefactive bacteria, and very cautiously get back to milk feedings. 8. Provide a circulation of air, as stagnant air soon becomes saturated with water vapor and no more perspiration can evaporate and absorb heat.

3. Indications for Surgical Intervention in Infections of the Biliary Tract.—Deaver states that he is in favor of removing gallstones in every case in which they are known to be present, provided, of course, that there are no contraindications which would render any operation injudicious. Not included in this category is the large number of cases of noncalculous cholecystitis which are constantly seen by the physician. But when operation is done in the early stages of the disease, when inflammatory changes are merely catarrhal in character, and the stones are confined to the gallbladder, the operation is so free from risk and the results are so satisfactory that it appears to me to be courting disaster to postpone surgical intervention in the hope that the symptoms will subside and never again recur. When the attacks of cholecystitis are repeated, and especially when discomfort persists in the intervals, operation is demanded to obtain a cure. The frequency with which mild, but recurrent attacks of cholecystitis give rise to pericystic and pyloric adhesions is not duly appreciated by the profession. In the later stages of gallbladder disease operation is almost invariably demanded, but so long as the serious lesions are confined to the gallbladder the mortality due to the operation is small.

5. The Differential Diagnosis and Prognosis of Tumors of the Uveal Tract.—Würdemann follows La Grange in classifying the tumors developing in the iris, the ciliary body, and the choroid under the following heads: Cysts; angioma; myoma; sarcoma; and metastatic tumors. These are taken up separately, giving differential diagnosis and prognosis. Of the treatment the author says that, where positive diagnosis of benign tumor of the iris may be made and the growth threatens loss of function, iridectomy should be done. Enucleation with a long section of the optic nerve should be made in the early stages of sarcomatous growths, and the case should remain under observation for at least four years, when, if recurrence takes place in the orbit, exenteration should be performed. If the case be seen in the second or even in the third stages, exenteration of the orbit, with subsequent x ray exposures for many months, should be made. In the various forms of sarcoma we may hope to preserve life, but not the eye. There is more hope in the nonpigmented than in the pigmented form. In carcinoma there is only one case in which life has been saved. Young subjects certainly present a far less sombre prognosis than the aged.

6. So Called Leucosarcoma of the Iris.—Brown concludes his article as follows: Ribbert's theory of the origin of all uveal sarcomas from chromatophores is worthy of most careful further consideration. The analogy between the round, spindle, and star formed cells, which proliferate in sarcoma, and the spindle and star formed cells, found in the embryonic choroid, is incomplete, because a round cell first stage has not been proved to exist in the latter. It is more reasonable to suppose that the cell reversion takes place to any one of these forms of sarcoma, analogous to the relations which obtain between embryonal and pathological conditions in glioma, than it is to suppose that lower cell forms are transformed into higher cell forms. So called leucosarcoma of the iris offers a more favorable opportunity for the study of the chromatophore theory than does sarcoma of the choroid, because here the normal chromatophore is much less heavily pigmented than in the normal choroid, or than the chromatophore in the iris. Pressure, too, destroys the normal cell.

7. Injuries to the Eye with Birdshot.—Marple gives a review of the treatment of birdshot injuries to eye, which may be condensed as follows: If the eye is lacerated or badly torn by the entrance of several or numerous shot, immediate enucleation should be done. When there is a single perforation the important thing is to protect the eye from infection. The conjunctival sac should be cleansed if the swelling of the lids permit it and a bandage applied. If there is much swelling of the lids ice applications should be made and the patient should be put to bed. Of course, if there is prolapse of the iris, the wound should be freed from this by excising what is prolapsed. If there is much gaping of a scleral wound, conjunctival sutures should be introduced to close it as well as possible. One thing which should not be done is to introduce a probe, for this is a crude way of undertaking localization, and can only add to the risk of infection. An accurate x ray picture should be taken as soon as possible. If by this a double perforation is shown, the eye can probably be saved, provided the ciliary body is not lacerated and infection does not take place. When the vitreous is full of blood the iodids, either of strontium or potassium, have been usually given, and probably are useful in assisting absorption. If the shot is still in the eye the latter can be saved, as the history of a great many cases show. If the shot is in some position easily accessible, as in the anterior chamber, an attempt should be made to get it out. If, however, it is in the vitreous or other place not easy to get at, it should be left undisturbed in the hope that it would become encapsulated, as has often occurred.

9. Treatment of Sarcoma of the Nasopharynx by Injections of Adrenalin.—Rhodes remarks that the prognosis of sarcoma of the nasopharynx is so uniformly bad that any treatment that offers hope for either the amelioration of the symptoms or a possibility of cure deserves our attention. The treatment he employed was first suggested by Mahu, in 1903, and recently used in a case of carcinoma of the rhinopharynx by Berdier and Falabert with very marked benefit. It consists in injecting five to ten minims into the substance of the tumor the following: Adrenalin chloride, 0.12 gramme; boric acid, 0.6 gramme; chloretone, 0.025 gramme; distilled water, 15 grammes. The results were good, consisting in immediate reduction in size of the sarcomatous mass and temporary alleviation of pain, although patient died from exhaustion due to the inroads of the disease.

MEDICAL RECORD.

August 11, 1906.

1. Does the Drinking of Water Give Typhoid Fever? By R. G. Eccles.
2. The Proper Limitations of the Medical and Surgical Treatment of Gastric Ulcer. By G. W. McCaskey.
3. The Health and Mortality of the Cotton Mill Operatives of Blackburn, Eng., By Frederick S. Crum.
4. The Puerperal Types of Sepsis, By William S. Stone.
5. A Study of Seventy Cases of Brain Tumor, By Arthur Conklin Brush.
6. Air Dilatation in the Treatment of Chronic Constipation, By Louis J. Hirschman.
7. The Treatment of Injuries to the Extremities by Mechanotherapy. A Report of Cases Treated at the Roosevelt Hospital, By William O. Rau.

1. Does the Drinking of Water Give Typhoid Fever?—Eccles says that the development of typhoid fever is connected with the use of infected water there is no reasonable room to doubt. The facts substantiate this hypothesis too firmly for it to be likely ever to be seriously shaken. That typhoid fever results from the *drinking* of infected water is quite a different proposition, and one that there are many reasons for doubting. The general belief among medical men, at present, is that the drinking of polluted water gives this disease. Since the polluted water does, somehow, give the disease, the assumption has been made that it results from the drinking of such water. There is no recognition of the fact that other explanations are possible and may be better. Our soldiers in the Spanish-American war were ordered to drink only boiled water. Probably many of them disobeyed the order, but a large

proportion of them obeyed it. There was no diminution in the proportion of diarrhœal diseases. The British soldiers during the South African war had a like experience, so had the Russians in the Russo-Japanese war, while the Japanese army had no such experience. The author calls the attention to the fact that water is also used for cooking, washing of cooking utensils, bathing, etc., and that flies are carriers of germs, which are also found in dust. He thinks a great deal depends on the dose or amount swallowed of the germs. The swallowing of these germs at their successive stages of multiplication would do no harm until they had reached a number and virulence capable of overcoming every protective force of the body. On passing that dose they could continue their multiplication until enough were produced to create an epidemic. No other rational explanation, the writer says, of epidemics of cholera, diarrhœal diseases, or typhoid fever has ever been advanced, and yet this one is not generally accepted, because it disagrees with the utterly unfounded theory which so many entertain, that these diseases can be given to people by the mere drinking of water. Not only the water, but also milk and food can be carriers of typhoid bacilli. He cites the Russian and Japanese armies in the last war: In the care and character of food the two armies were quite unalike. In the care and character of the water there was little or no difference between them. All food eaten by the Japanese soldiers who used the creosote pills was treated to preservatives so that to the disinfecting action of the gastric juice was added the disinfecting action of the creosote.

3. **The Health and Mortality of the Cotton Mill Operatives of Blackburn, Eng.**—Crum calls the attention to the annual reports of the medical officer of health of Blackburn, Eng., which city is in the very heart of the cotton mill district of England. It seems that the Cotton Cloth Factories Acts of 1889 and 1897, now incorporated in the Factory and Workshops Act of 1901, have been extremely beneficial to the health of the working people. In conclusion, the author thinks that the mortality returns of Blackburn deserve fuller notice in this country than they have thus far obtained. There are numerous localities in the United States where industries more or less inimical to health and longevity are centered. If the local health authorities of such trade communities were to profit by this example, their efforts would undoubtedly ultimately conduce to the benefit of both employers and employees, and therefore to the public generally.

5. **A Study of Seventy Cases of Brain Tumor.**—Brush reports seventy cases of brain tumor, forty-one occurring in male, twenty-nine in females. As to the real cause for the occurrence of most of the tumors found in the brain, medical science is as ignorant today as it is regarding the ætiology of growths in other parts of the body. This fact is supported by the evidence furnished by the author's cases, as fifty-three of them occurred without known cause. In only one class of tumors can it be said with certainty as to the real cause; that is, those due to bacterial or parasitic infection. From a study of these growths, however, it seems probable from the facts in evidence that some of the other forms may also be due to the presence of organisms. Heredity does not seem to play a rôle, neither does injury, while later it may aggravate the growth of a tumor of the brain. As to the diagnostic points, convulsive disorders seems to be very important, next comes defective vision, severe headache, sometimes ataxic gait, with increased knee jerks and vertigo. The nature of a brain tumor is, during life, unless the case comes to operation, merely speculative. It is a reasonable probability in patients suffering from a malignant tumor in some other part of the body, that a subsequent brain tumor is of the same nature, and also, when the patients are suffering from tuberculous deposits in other parts, that it is tuberculous. The existence of a syphilitic infection is, as a rule, competent evidence as to the nature of the tumor, but it is not conclusive, as a syphilitic may suffer from tumors of other kinds. The results obtained by treatment in the author's cases show that: Fourteen recovered under medical treatment, nineteen were improved by surgical means, thirteen died, twenty-six passed from observation as unimproved, and eight are still under observation. The only drugs which are known to influence favorably the growth of a tumor are potassium iodide, mercury, and arsenic.

BRITISH MEDICAL JOURNAL.

July 28, 1906.

1. The Borderland of Medicine and Surgery as Exhibited in the Stomach, By G. A. GIBSON.
2. Infantile Scurvy, By G. F. STILL.
3. Errors of Refraction Among Children Attending Elementary Schools in London, By A. H. THOMPSON.
4. The Varieties of Ringworm and Their Treatment, By J. H. SEQUEIRA.
5. The Electrical Resistance of the Blood and Urine as a Test of the Functional Efficiency of the Kidney, By D. TURNER.

2. **Infantile Scurvy.**—Still states that the onset of infantile scurvy is almost limited to the later half of the first year of life, and in three fourths of the cases the disease begins between the age of six and ten months. A history of tenderness in the limbs in an infant between those ages should at once suggest scurvy. The onset of scurvy is probably never really sudden, but the more pronounced symptoms may appear quite suddenly. Among the preliminary insidious symptoms are failure of appetite, loss of weight, and fretfulness. The most striking feature of the disease is the tenderness of the limbs and loss of movement. These symptoms occur much more often in the lower limbs than in the upper. With the tenderness there is sometimes associated some visible or palpable swelling of the affected limb. As this is the result chiefly of subperiosteal hæmorrhage, it may be detected only by careful palpation of the bone as a vague deep thickening. It is not limited to the epiphyseal region, but extends some distance along the shaft. The loss of movement in the affected limbs is so marked that the disease has been mistaken for infantile paralysis. This due to pain, to infiltration of the muscles in severe cases and occasionally to separation of the epiphyses by extensive hæmorrhage at the epiphyseal line. Œdema occasionally occurs over the thickened part of the limbs, thus suggesting suppurative periostitis. The gums are not always swollen or discolored; there may be only a thin purple line at the free edge of the gum. Very rarely the gums are markedly affected when there is no other obvious symptom of scurvy. A not infrequent manifestation is hæmorrhage into the mucous membrane of the hard palate. The discoloration occupies the middle part of the vault, and varies in color from bright red to purplish black. "Black eye" in an infant, without a history of traumatism, should suggest scurvy. The diagnostic importance of the urine is very great: Urinary changes are more constant than gum affections. But while blood is often present, yet in many the amount is so small that it can only be demonstrated by the microscope. Fever in infantile scurvy, although rather the exception than the rule, is by no means a rarity. There are few diseases in which the effect of treatment is so striking as in infantile scurvy: under efficient antiscorbutic diet the tenderness and pain on movement is lessened within forty-eight hours. Indeed failure to improve on proper diet within four days should throw doubt on the diagnosis of scurvy. But the other symptoms persist much longer: The deep thickening, if extensive, may remain for two or three weeks.

5. Electrical Resistance of Blood and Urine.—Turner has investigated the resistance offered by blood and urine in health and disease, to the passage of the electric current. He found that the specific resistance of normal urine amounts to about forty-five ohms and that the resistance is a measure of the salts, chlorides, phosphates, sulphates, etc., present in the urine; the greater the concentration the less the resistance, and vice versa. In disease the resistance was found to be increased chiefly in acute croupous pneumonia (due to the diminution in the chlorides), in diabetes mellitus, acute and chronic Bright's disease, and in pernicious anæmia. As it is believed that the glomeruli are mainly responsible for the presence of salts in the urine, a high electrical resistance, other things being equal, would indicate an impairment of the function of the glomeruli. The average specific resistance of normal blood was about ninety ohms. In pernicious anæmia the blood resistance is reduced fifty per cent. in contrast to the high urinary resistance. The blood contains an abnormal amount of salts, the urine too few. This is a clear case of renal inefficiency.

THE LANCET.

July 28, 1906.

1. Head Nodding with Nystagmus in Infancy, By G. F. Still.
2. Pericarditis in Childhood, By A. Morison.
3. Appendicitis and Gangrene of the Vermiform Appendix Considered as Separate Diseases, By J. D. Malcolm.
4. Flagellated Protozoa in a Perineal Abscess, By E. H. Hunt.
5. A Few Suggestions for the Future of Consumptive Patients of the Working Classes, By M. S. Paterson and F. C. Shrubsall.
6. The Passage of Spirochæta Duttoni from Mother to Fœtus, By A. Breiul and A. Kinghorn.
7. A Case of Cardiac Syphiloma with Bradycardia and Obstruction of the Inferior Vena Cava. The After History and a Post Mortem Record, By C. W. Chapman.
8. Gangrene of Both Feet and Legs, Due to Embolism and Thrombosis of the Abdominal Report in Its Entire Extent, the Result of Mitral Stenosis and Consecutive Cardiac Thrombosis, By H. W. Syers.
9. A Case of Gallstones of Large Size Passed by the Rectum. By W. E. C. Dickson.
10. The Electrical Resistance of the Blood and Urine as a Test of the Functional Efficiency of the Kidney, By D. F. Turner.
11. The Possible Importance of Earth Worms as a Factor in the Spread of Disease, By C. F. Fraser.
12. Notes on Rheumatic Complications. By A. D. Pithie.
13. A Case of Tabes Dorsalis in Which Widespread Cutaneous Sensory Manifestations Completely Disappeared, By F. W. Peirce.

1. Head Nodding.—Still states that three symptoms constitute the characteristic features of spasmus nutans—the head nodding, the tendency to look out of the corner of the eyes, and the nystagmus. The rhythmic movement of the head is not necessarily anteroposterior. It occurs only when the child is sitting with the head unsupported, so that it is overlooked when the child is lying down. Head rolling, which only occurs when the child is lying down, must be distinguished from spasmus nutaus. Contrary to some observers the writer has never seen the least tendency to epilepsy. Remarkable and characteristic is the habit the infants have of looking out of the corner of the eyes while the face is turned in the opposite direction and slightly downwards. The nystagmus is peculiar in certain respects: (1) It is almost invariably much more marked in one eye than in the other; which is a very rare condition apart from this disorder. (2) It comes on without apparent cause in an infant a few months old, and disappears completely within a few weeks or months. It may precede the head shaking by several weeks. The author regards the irritation of dentition as the usual exciting cause of spasmus nutaus, but other forms of peripheral irritation may also act as exciting causes. The theory that it is due to living in ill lighted dwellings seems unsatisfactory to the author. The malady usually passes off after a few months, leaving no ill effects. There is a rare congenital permanent condition of nystagmus with head nodding from which spasmus nutaus must be distinguished. Such children should be kept out of doors as much as possible, and attention paid to their general nutrition. The use of sedative drugs is sometimes followed by improvement.

3. Gangrene and Inflammation of the Appendix.—Malcolm attempts to show that in a considerable number of cases of affection of the vermiform appendix, the initial lesion is a formation of a gangrenous patch in the wall of that part of the intestine, a condition which is frequently asssociated with an appendicitis beginning in the mucous membrane, but which may arise independently. Such gangrenous patches forming in the wall of the appendix may bring about three well defined conditions which are quite independent of inflammation beginning in the mucous membrane, though this may also be present: 1. An escape into the peritoneal cavity of microorganisms which excite a serous, a seropurulent, or a purulent exudation unlimited by adhesions. 2. The adjacent peritonæum may become adherent over a gangrenous patch and the latter separate and be discharged through the appendix, recovery taking place. 3. A gangrenous patch may thus become sealed off, but when it separates the adhesions may also give way and a localized abscess form or a rupture into the peritoneal cavity take place. As the pathology and consequences of gangrene formation are so different from those of inflammation beginning in the mucous membrane, it is most important that the two conditions should be clearly differentiated.

LYON MEDICAL.

July 3, 1906.

1. Tuberculous Glands Forming a Tumor in the Region of the Pancreas. By F. Mouisset and Georges Mouriquand.
2. Diastolic Cardiopulmonary Murmur at the Base of the Heart, with Autopsy, By Louis Gallavardin and Charles Beutter.

1. Tuberculous Tumor About the Pancreas.—Mouisset and Mouriquand report the case of a man, thirty years old, who died of nephritis associated with many complications. On autopsy the mesenteric glands about the head of the pancreas were found to be massed and in a state of tuberculous caseation.

2. Diastolic Murmur at the Base of the Heart.—Gallavardin and Beutter report a case of inconstant murmur in the preaortic region which was heard more clearly and sometimes exclusively during inspiration. On autopsy it was found that the anterior face of the base of the heart was covered by a portion of the left lung, which was secured in this position by a triple adhesion, pleural, pleuropericardic, and pericardic.

July 22, 1906.

A Rusty Pin in the Medulla Oblongata, By Devic and Nordmann.

A Rusty Pin in the Medulla.—Devic and Nordmann report the case of a woman, forty-eight years old, who had suffered from delirium tremens a year before, and had had a painful paresis of the lower limbs for two years. She had marked jaundice, enlarged liver and spleen, pleurisy, and pulmonary tuberculosis. On autopsy a rusty pin was found in the medulla.

LA PRESSE MEDICALE.

July 21, 1906.

The New Pasteur Institute in Tunis, By Charles Nicolle.

July 25, 1906.

1. Purpura Hæmorrhagica and Tuberculosis, By R. BENSAUDE and L. RIVET.
2. Tuberculosis and Toxic Obesity, By R. ROMME.

1. Purpura Hæmorrhagica and Tuberculosis.—Bensaude and Rivet state that these two diseases coexist very frequently, and urge that in cases of purpura associated with marked anæmia of which the cause is not evident, especially when the purpura is recurrent or chronic, the physician should try in every possible way to search out what chronic pulmonary, glandular, or other form of tuberculous lesion acts as its origin.

LA SEMAINE MEDICALE.

July 25, 1906.

1. Functional Mitral Pseudostenosis, By Professor L. BARD.
2. Is Disinfection an Efficacious Measure to Reduce the Morbidity Due to Transmissible Diseases?

1. Functional Mitral Pseudostenosis.—Bard presents the theories which have been advanced to account for the murmur heard in this condition, and describes the physical signs by means of which true mitral stenosis can be differentiated from functional.

2. Is Disinfection Efficacious to Reduce the Morbidity Due to Transmissible Diseases?—To judge from the figures presented as taken from the statistics during the year 1895 to 1905, inclusive, it does not appear that the number of patients who suffer from variola, scarlatina, diphtheria, and typhoid fever has decreased in spite of the improvements which have been made in measures of disinfection.

MUENCHENER MEDICINISCHE WOCHENSCHRIFT

July 17, 1906.

1. A Simple Method of Demonstration of the Proteolytic Actions of Ferments (with Some Results, Especially in Leucæmia), By EDUARD MÜLLER and GEORG JOCHMANN.
2. The Part Played by Mine Infection in the Ætiology of Cerebrospinal Meninigitis, By LUDWIG JEHLE.
3. Pyocyaneus Sepsis in Adults, By ROLLY.
4. Hemiplegia with Intact Pyramidal Tracts (Intracortical Hemiplegia), By W. SPIELMEYER.
5. Prognosis of Pulmonary Tuberculosis, By E. RUMPF.
6. Suicides, By R. ROTHFUCHS.
7. The Application of Hyperæmia According to Bier's Method in Some Diabetic Affections, By KARL GRUBE.
8. Electrotherapy in Circulatory Diseases, By LUDWIG RAAB.
9. The Romanowsky Stain According to May, By VIERECK.
10. A Case of Ganglion of the Interarticular Fibrocartilage of the Knee Joint. By ERHARD SCHMIDT.
11. A Simple Method of Extension, By ARTHUR HOFMANN.
12. Bier's Stasis.
13. The Activity of the Kidneys. By Professor R. MAGNUS.
14. How Do We Protect Ourselves and Our Assistants at Autopsies? By CH. THOREL.

2. Mine Infection and Cerebrospinal Meningitis.—Jehle concludes after an investigation of epidemics of cerebrospinal meningitis in two mines that (a) the mines were the foci whence the miners were infected and whence they carried the infection to their families, as the disease extended epidemically only by way of the mine and the infection of the miners corresponded almost exclusively with their place of work. (b) To prevent the extension of cerebrospinal meningitis it is necessary, first of all that the fathers of sick children should not be allowed to work in the mine until such time as they can no longer be carriers of the disease. (c) Miners who come from infected mines should be regarded as disease carriers and treated accordingly. (d) Pyocyanasis has proved a quick, certain, and harmless means of prophylaxis.

3. Pyocyaneus Sepsis in Adults.—Rolly gives in minute detail the clinical history of and the autopsy on a case of this nature, which occurred in a woman, twenty-eight years old, and concludes that the bacillus pyocyaneus may act in adults as an independent producer of infection and play the part of an invading pathogenic bacterium.

4. Hemiplegia with Intact Pyramidal Tracts.—Spielmeyer reports a case which was diagnosticated as genuine epilepsy with total paralysis of the left side. On autopsy the pyramidal tracts were found to be intact, but the entire right hemisphere was diminished in size and weighed two hundred grammes less than the left. The convolutions were small and crested, particularly in the middle and anterior portions, while their arrangement did not differ from that on the sound side. The right thalamus and red nucleus, and also the left hemisphere of the cerebellum, were reduced in size. Under the microscope the appearances were those of secondary atrophy.

7. Hyperæmia in Diabetic Affections.—Grube reports cases of furunculosis and of gangrene of the foot in patients suffering from diabetes in which he successfully employed hyperæmia by Bier's method.

8. Electrotherapy in Circulatory Diseases.—Raab declares that no degree of cardiac insufficiency is a contraindication to the use of electricity in diseases of the circulatory organs, any more than it is to the use of digitalis, and that the principle which underlies the use of both of these remedies is the same.

ZENTRALBLATT FUER CHIRURGIE.

July 28, 1906.

1. Exposure of the Heart in Injuries to This Organ, By WILMS.

1. Exposure of the Heart.—Wilms says that the ordinary plastic operation done to expose the heart is satisfactory for wounds of the anterior part of the organ, but is not useful when the posterior part of the organ is injured. In a recent case in which a bullet had perforated the heart from backwards he made a long incision between the fourth and fifth ribs, and after opening the pericardium, had an excellent view of the posterior surface of the heart. He sutured the wound in the heart, closed the pericardium without drainage, and a perfect recovery followed.

ZENTRALBLATT FUER GYNAEKOLOGIE.

July 28, 1906.

1. A Contribution to the Study of Mechanically Producing Abortion, By F. HEHL.
2. Breus's "Hæmatom" Mole, By A. ZINSSER.
3. Credé's Pelvioplastic Operation, By R. KLIEN.

1. Abortion.—Hehl discusses the forensic relations of fatal cases due to mechanical interference with pregnancy. Two cases which he reports showed, respectively, a perforation of the uterus and a perforation of the bladder. In neither case could it be positively stated that death was due to the use or insertion of an instrument to produce abortion, as in both cases there was stated to be a retention of the placenta after miscarriage had taken place, the instruments having been employed in the effort to empty the uterus of the retained products of conception. When physical conditions are found which, although suspicious, are not certain proofs of guilt, accusation of crime had better be withheld.

2. "Hæmatom" Mole.—Zinsser discusses the well known case of Breus, and concludes that the mole as described by the latter may be found in embryos older than Breus's. The advanced stage of the embryo shows that the insufficiency of development is not due alone to a defect in the "anlage" of the heart. The disproportion between the embryo and its membranes compels one to think of an hydramnios as its cause. The

hæmatomata arise in the intervillous spaces, and may be better described as aneurysms.

3. **Crede's Pelvioplastic Operation.**—Klien considers the suggestion of Credé's to relieve pelvic contraction by a plastic operation on the pubes (*New York Medical Journal,* June 30, 1906). He considers it a dangerous and unnecessary operation because it is a superfluous procedure in a pelvis only moderately contracted, and in a strongly contracted pelvis it does not fulfill the purpose expected of it. Further, if performed on both sides—as suggested by Credé in some instances—the operation will interfere with the solidity of the pelvis.

GLASGOW MEDICAL JOURNAL.

July, 1906.

1. Postgraduate Demonstration in Ward I, Glasgow Royal Infirmary, By J. W. Allen.
2. The Surgical Aspect of Anuria, By C. G. Cumston.
3. Death by Lightning, By D. C. Watt.

2. **The Surgical Aspect of Anuria.**—Cumston refers to various cases in which this condition was present a longer or shorter time. The term is made to refer to all abnormal conditions in which the urine is prevented from reaching the bladder. Of the cases of anuria resulting from reflex action, the irritation being primarily in another organ, and being carried by the nerves to the kidney, the author considers an anuria of hysteria and toxic anuria arising from the intestinal canal. Irritation in one kidney, with suppression of urine, may also lead to a similar suppression in the other kidney. The anuria of pregnancy is also possibly a reflex anuria. In the second group of cases of anuria are those which occur in nephritis, with renal calculi, and in torsion or compression of the ureter. In anuria from renal calculi either both kidneys with perfect functional integrity are arrested in their secretion by the impaction of a calculus in one ureter and then in the other, or one kidney is physiologically useless on account of previous lesions, while the other becomes clogged by the occlusion of its ureter, or there may be but one kidney, the other being congenitally absent, or having been removed. Catheterization of the ureters and radioscopy are not regarded as infallible in detecting the presence of calculus as a cause of anuria.

3. **Death by Lightning.**—Watt reports such a case occurring in Natal. It was a matter of importance, as it was necessary to differentiate between death from the alleged cause, and death at the hands of blacks who were suspected of murder. The lightning seems to have entered by a front window, passed through the house and out by the open back door, killing the man in its course, and shocking to unconsciousness a servant who was near a stove in the kitchen. There was a tear in the clothing on the right side of the body of nine inches. His watch had stopped at the moment the thunderstorm was reported to have occurred. Rigor mortis was marked twenty-two hours after death when the writer saw him. The pupils were dilated. There was an extensive and gaping wound of the scalp on the left side of the occipital region. The occipital, temporal, malar, parietal, and upper and lower maxillary bones on the left side were fractured. There was also fracture of the base of the skull on the right side and the right lower jaw. Under the torn clothing of the left arm were two extensive skin wounds, and above the right nipple the skin was scorched, and there were five small circular wounds. The case was unusual from the extent of fracturing, and the duration of rigor mortis.

THE PRACTITIONER.

July, 1906.

1. The Treatment of Sleeplessness, By W. Broadbent.
2. The Distribution and Treatment of Epithelioma of the Lower Lip, By G. L. Cheatle.
3. The Causation and Treatment of Headaches,
   a, Introduction, By H. C. Thomson.
   b, Headaches of Renal Origin, By R. Saundby.
   c, Intracranial Disease as a Cause of Headache, By J. Taylor.
   d, Migraine and Toxæmic Headaches, By W. Harris.
   e, Eye Strain as a Cause of Headache, By W. H. Jessop.
   f, Headache of Nasal Origin, By H. L. Lack.
4. Myomectomy, By P. Honocks.
5. Frontoethmoidal Sinusitis. Three Cases in Which Spontaneous Evacuation Took Place in the Region of the Orbit, By St. Clair Thomson.
6. On Opsonic Factors. Their Estimation and Use in Therapeutics, with Some Illustrated Cases, By R. E. French.
7. Bronchitis and Bronchopneumonia, By C. H. Cattle.
8. Afebrile Typhoid Fever, By J. P. Parkinson.
9. The Ætiology of Eczema, with Special Reference to the Recent Literature of the Subject, By J. M. H. Macleod.
10. A Simple Operation for Piles, By R. M. H. Randell.
11. The Treatment of Hæmorrhoids, By W. G. Sutherland.

1. **The Treatment of Sleeplessness.**—Broadbent says that in the prevention and cure of sleeplessness, the object of treatment should be the removal of the obstacle to sleep, not simply to compel sleep, while leaving the disturbing influence in operation, and perhaps working harm in other ways. Thus, when sleeplessness is due to pain, morphine is given to relieve the pain, sleep following as a consequence. So in itching of the skin a sedative lotion is applied, and the obstacle to sleep removed. When high arterial tension causes sleeplessness a mercurial aperient is indicated, also careful regulation of the diet, and occasional use of chloral. In pyrexia, especially with low pulse tension the tonic effect of cold sponging will often induce sleep. With low tension sleeplessness one will often fall asleep in a chair, but will be wide awake as soon as he lies down. The remedy is not a narcotic, but a cardiovascular tonic. The most common cause of sleeplessness is gastrointestinal derangement. Treatment means simplification of diet, prevention of dilatation and fermentation, and use of salol, naphthol, creosote, carbolic acid, sulphocarbolates, or calomel. A caution is sounded against the use of sedatives and narcotics in the young.

4. **Myomectomy.**—Honocks thinks this the ideal operation when its performance is possible. He includes by this term only the removal of interstitial fibroids from the wall of the uterus through an abdominal incision. The cavity of the uterus need not, as a rule, be opened in this operation. The body of the uterus is incised until the capsule of the tumor is reached; the tumor is then enucleated and removed. If several tumors are present they are thus treated in succession. Hæmorrhage can usually be arrested by carrying a ligature around the bottom of the cavity with a curved needle and tying it securely. The uterine wound is then carefully sewed together, chromicized catgut being used for all ligatures. If a tumor is so large that only a thin shell of uterine tissue would remain after its removal, it would be better to remove the entire uterus. Ligatures must be absolutely aseptic and absorbable, hence only catgut can be used with safety. The cavities left in the wall of the uterus after the removal of tumors do no harm if the technics has been correct. This operation leaves a patient unmutilated, entirely competent for child bearing, and the change of life will occur in the normal way. Subsequent pregnancies will not become more dangerous than if the tumors had not been removed. But the operation should not be attempted for large interstitial fibroids if their removal leaves a mere shell of uterine tissue, nor if there is necrobiosis or any septic condition.

5. **Frontoethmoidal Sinusitis.**—Thomson finds of common occurrence cases in which chronic suppuration in the frontal and ethmoidal cavities empties into the nose. But cases are rare in which the pus reaches the face by perforating the bones, appearing as an abscess on the faces. The author has lately seen three such cases, each differing as to its after history. In the first case a simple incision of the abscess of the face resulted in cure. In the second case the abscess was incised and the sinus drained. A cure resulted, the case being analogous to a retroauricular abscess of mastoid origin in which the mastoid antrum is opened and drained without disturbing the tympanic cavity. The third case required a complete postaural operation, and was comparable with cases of chronic otorrhœa of antroattic origin.

9. **The Ætiology of Eczema.**—Macleod affirms that almost all writers on this subject agree that a particular tendency on the part of the individual is a prerequisite before the various causative agents can produce eczema. Thus hereditary delicacy of the skin, enfeebled health from alimentary disease, kidney, or nerve disorder may lower the resisting power of the skin and make it more liable to react to irritants. Various pathological conditions of the skin, like xerodermia, icthyosis, and senile skin predispose to eczema. If the predisposition referred to exists there are various irritants which may cause eczema. Opinions differ as to whether these are external, internal, or both. Followers of the diæthetic theory, and of the view that eczema is caused by toxines from the alimentary tract deny that external irritation will produce the disease, while others believe it can be produced only by such an agency. Thus in infantile eczema Hall believes that the predisposing cause is the instability of the neurocutaneous apparatus, owing to change of residence from a subtropical to a temperate climate, the actual cause being external irritants such as cold, imperfect drying of the skin, soap, dust, etc. In the adult the predisposing cause might be irritability or overstimulation of the nervous system, the actual cause being friction, irritating fluids, sunlight, etc.

10. **A Simple Operation for Piles.**—Randell has tried his method of ligation with catgut and then cutting away the pile in three hundred cases and has observed quick and satisfactory recovery. The following are his reasons: 1. The catgut ligature is tied so tightly that it ruptures the internal coat of the included vessels, hence there is no hæmorrhage when the ligature falls away. 2. There are no ligatures in the rectum to act as irritating foreign bodies. The clean wounds resulting from the fall of the ligatures heal rapidly. 3. A saline aperient the morning after the operation washes away any blood that may be in the rectum, and prevents hyperæmia. 4. No opiates or astringents are used, hence enemata with their pain and discomfort are unnecessary, and there is no inhibition of micturition. As a rule there is no hæmorrhage after this operation. The author had one case in which it was necessary to plug the rectum for twenty-four hours. There is no tendency to recurrence after this operation; the author has not yet been obliged to operate a second time upon a case.

ANNALS OF GYNÆCOLOGY AND PÆDIATRY.

July, 1906.

1. The Treatment of Suppurative Conditions in the Abdominal Cavity, General and Local, By J. DOUGLAS.
2. Review of Obstetrical Literature, By H. E. PLUMMER.
3. Review of Pædiatry, By R. W. HASTINGS.

1. **Suppurative Conditions in the Abdominal Cavity.**—Douglas thinks the treatment and mortality of general peritonitis have undergone marked improvement in recent years, also the methods in general of dealing with suppurative conditions in the peritoneal cavity. Diversity of opinion still prevails on the following subjects: 1. The use and manner of drainage. 2. The use of irrigation. 3. Eventration and removal of lymph from the surface of the intestines. 4. Enterotomy and enterostomy. 5. Postoperative treatment, especially with reference to facilitating peristalsis, and as a consequence the disuse of opium. It is thought that drainage is now used less frequently than formerly, even in pus cases, hence the indication lies principally in the mind of the surgeon. Gauze is thought ineffective for drainage purposes, unless surrounded with rubber tissue. Tubes do not drain unless the fluid is forced out by gravity or by abdominal pressure. If drainage is desired it may be influenced by the position of the wound and the posture of the patient. Speed in operating is desirable, and handling the viscera or disturbing them by any method decreases the chances of recovery. Statistics concerning irrigation are practically valueless. The indicating conditions, the method of irrigation, the substance to be used are variable. Vaginal drainage is of value in certain pelvic operations, though certain well known authorities consider this as useless as drainage of every other form. Enterotomy or enterostomy is advocated by Lund for paralysis of the intestine, but increases the danger from infection. Catharsis after operation is approved by most surgeons, and opium is still advocated by some as a preventive to the spread of infection. Peristalsis may be favored by calomel and salines, by atropine and physostigmine salicylate. The rectal use of saline solutions is believed to be superior to the intravenous use of such solutions.

THE DUBLIN JOURNAL OF MEDICAL SCIENCE.

July, 1906.

1. A Further Series of Enucleations of the Prostate. By Sir WILLIAM THOMSON
2. Notes on the Training of the Voice, By H. LAW.
3. The Treatment of Eustachian Deafness, By A. GRESSWELL and G. GRESSWELL.

1. **Enucleation of the Prostate.**—Sir William Thomson reiterates the opinion which he has long held that the suprapubic method is the most desirable, in most cases, for the removal of the enlarged prostate. His cases number eighteen, and five of them were fatal. He found a tendency to the deposition of phosphates upon the capsule of the prostate, which is not usually removed, this capsule being often bruised, and occasionally undergoing necrosis. This is a reason for shaping the opening into the bladder by a tube at least three quarters of an inch in diameter, through which irrigation may be freely accomplished. In addition to irrigation from above the bladder should be washed out daily by way of the urethra with an abundance of boric acid solution. Sloughing of the abdominal wound and infection of the contiguous cellular tissue must be guarded against. In cases of hæmorrhage from the prostate, which is continuous and uncontrollable, the author believes there is an indication for immediate removal of the prostate. The conditions which cause the bleeding cannot, as a rule, be overcome by any other procedure. The possibility that the prostatic tumor may be large and irregular, and even extend into the abdominal cavity, shows the necessity of extreme care in diagnosis. The dangers of the operation are usually exaggerated by the age and broken down condition of the patient. Constant irrigation will tend to prevent infection of the tissues by putrid urine, and the edges of the bladder should be united to the rectus muscle as a further safeguard. The danger of breaking into the rectum must be remembered when enucleating the prostate; in fact, this accident is not of infrequent occurrence. The use of the Trendelenburg position must be avoided if possible. Primary hæmorrhage is seldom of an alarming character. Continuous

drainage follows the operation until healing is well advanced.

2. **Notes on the Training of the Voice.**—Law mentions as mistakes on the part of the singer: 1. Explosive commencement, the vocal cords being firmly contracted. 2. Tremulous voice from want of control of the respiratory muscles or from forcing the lower register upward. 3. Inability to produce certain notes. 4. Quavering on a particular note as often as it recurs. 5. Loss of the upper notes. 6. Loss of evenness in the middle register. 7. Difficulty of singing with the half voice. Mistakes which are attributable to the teacher are: 1. Training the pupil to keep the larynx and tongue in unsuitable positions. 2. Training a voice for one division when it should be in another. 3. Training the pupil to change from one register to another at a note which is not suitable for that voice. 4. Allowing a pupil to attack a note, at the beginning of a period of singing, in any way he may choose. 5. Neglect of the breathing and exercises connected therewith. 6. Not recognizing the breaking of a voice at its commencement, or allowing a pupil to commence too soon.

3. **The Treatment of Eustachian Deafness.**—Gresswell considered this as occasioned by influenza and other diseases. Mere dilatation of the tubes with the Politzer bag or the Eustachian catheter may be helpful, but vaporized medicaments are better. They may be used with the aid of the Politzer bag, and should be infused four times at a sitting, every other day. Various substances are mentioned which have been found serviceable. Even though the tubes are entirely occluded, they may often be made pervious by the exercise of patience, and much relief be given.

REVUE DE CHIRURGIE.

July, 1906.

1. The Surgical Treatment of Aneurysms of the Subclavian Artery, By M. Savariaud.
2. Note on a Deformity of the Spine of the Scapula, By C. Féré.
3. Gastrocutaneous Fistula Following Ulcers of the Stomach, By M. Patel and R. Leriche.
4. Femorotibial Osteoplastic Amputation, Sabaneieff's Method. Study Upon the Cadaver, By L. Chevrier.
5. Incomplete Enucleation of the Scaphoid, By C. Capillery and M. Ferron.
6. Operative Technics of Pylorogastrectomy for Cancer. Application of Mobilization of the Duodenum to Gastric Resection, By R. Leriche.
7. Contribution to the Study of Treatment of Cancer of the Rectum, By Martin du Pan.

1. **The Surgical Treatment of Aneurysms of the Subclavian Artery.**—Savariaud divides these aneurysms into two groups; in the first are those which are extrascalenic; in the second those which are both extrascalenic and intrascalenic. Those in the first group are essentially suitable for surgical treatment. They may be extirpated, or they may be ligated, the ligature being placed as near the aneurysm as possible, according to Anel's method. In some cases it may be practicable to apply the ligature, and then extirpate the tumor. In the second group the method of Anel is the more dangerous the nearer the ligature is applied to the heart. In such cases the method of Brasdor is preferable, the immediate mortality from which is almost *nil*, and the remote results of which are often remarkable. Medical and dietetic treatment of this condition is usually futile. Electrolysis may be tried in desperate cases if other methods are impracticable. Compression is usually impossible. The Lancereaux-Panlesco method, consisting in subcutaneous injections of a two per cent. solution of gelatine, has had some cures and some improvements as to its results, and is recommended for those cases in which the bloody method is too severe.

2. **Deformity of the Spine of the Scapula.**—Féré observed in a man with abnormal sexual condition, bony projections resembling symmetrical exostoses, half as large as a pigeon's egg at the junction of the inner with the two external thirds of the spine of the scapula. Subsequently examining 300 imbeciles and epileptics he found this deformity present, bilaterally, in eleven per cent. of them. The frequency of this anomaly in degenerates led him to the conclusion that it was a stigma, which develops slowly during the early period of life.

3. **Gastrocutaneous Fistulæ Following Ulcers of the Stomach.**—Patel and Leriche offer the following conclusions: 1. Fistulæ which result from ulcer of the stomach and establish communication between the cavity of the stomach and the external world are relatively infrequent. They may be due to a suppurative perigastritis opening spontaneously or by surgical means, or there may be no precedent formation of abscess which is clinically appreciable. In the latter case there is a progressive condition which has resulted from infectious processes. The point of election for these fistulæ is the upper portion of the stomach which has little mobility and hence can readily form attachment to the abdominal wall. 2. These fistulæ show varying symptoms according to their situation. When contiguous to the cardiac end they have an intermittent discharge, but a continuous one when contiguous to the pylorus. The general condition may not suffer, in the first instance, for a long time, but in the second it rapidly deteriorates. 3. The treatment is governed by the location of the fistulæ. If the fistula is high up, medical measures may be used, surgical intervention being adopted if spontaneous cure does not come about. If such treatment becomes necessary it should take the form of resection of the ulcer, with subsequent suture of the stomach. If the fistula has a low situation its obturation should be attempted in place of the radical measure mentioned. Direct suture of the wound should be resorted to, and this measure is not always a successful one.

4. **Femorotibial Amputation.**—Chevrier details the steps of his study upon the cadaver for modifying the operation of Sabaneieff. He uses Delitzine's method of ligating the arteries, and follows Jacobson in his care for the muscles and periosteum. The original features which he proposes consist in his method of forming the flap, the diminished section of the bones, the preservation of the capsule and the corresponding portion of the menisci, the luxation, and external fixation of the patella, the transverse adaptation of the divided bones by sutures very carefully applied to the muscles and tendons. The author thinks this operation indicated for many of the cases in which, heretofore, disarticulation of the knee, the Gritti operation, or amputation of the thigh at its lower portion, has been the method of choice.

7. **Treatment of Cancer of the Rectum.**—Du Pan discusses this subject, and presents the statistics of a number of surgeons of great experience. The cause of death in most cases was attributable to the use of the circular suture in operations for resection. Czerny lost six cases out of thirty-eight from this cause, and had no deaths in the six cases in which he sutured the anterior wall of the rectum, leaving a provisional sacral anus. Kraske, on the other hand, had better results with the circular suture, though his cases of this voriety numbered only fifteen, of which seven died. He has abandoned the method, however, and now practises that of Hochenegy, which he has performed nine times without mortality. The author concludes that it is better to abandon resection of the rectum and practise amputation, which gives results which are functionally as good as by resection while the operative mortality is lower.

Letters to the Editors.

INFECTION BY WAY OF THE TONSIL.

BOLTON LANDING, LAKE GEORGE, N. Y.,
July 29, 1906.

To the Editors: Permit me to direct the attention of your readers to pages 486 and 488 of the July number of the *Archives of Pædiatrics,* which contains my address on The Tonsil as a Portal of Microbic and Toxic Invasion. What I wish to avoid is the impression that I deny the *possibility* of such invasions through the tonsil; what I mean to deny, fortified by clinical experience and anatomical data, is the justification of the modern custom of making the tonsil exclusively responsible for the admission into the system of microbes or toxines.

Most's statement is as follows: "When an injection was made near the pharyngeal tube orifice, it would run in both directions, both backwards and forwards; when in the region of the tonsil, to the anterior parts of the fauces only." This suggests limited or absent absorption posteriorly. Thus, even near the tonsil, not to speak of the tonsil itself, there is less lymph circulation than posteriorly. Under very favorable circumstances, however, there must be, and surely is, a possibility of the contents of the lymph circulation getting away from the tonsil.

Among my conclusions (page 488) there are the following: Invasion into the normal tonsil is possible. The lymph current near the tonsil is less active than that of the pharynx at some distance. There is a system of closed canals *in the follicles* (of the tonsil) which *do not open* into the connective reticulum (Retterer, Hodenpyl). While the normal infantile tonsil which has not suffered from previous exposure or disease may or must be believed to permit *some* invasion into the tonsil and structure, and sometimes *beyond* it, microbic invasion through the tonsil is *not predominant over that which takes place through the lymph apparatus of the pharynx.* A. JACOBI.

WAS NAPOLEON EPILEPTIC?

SONYEA, N. Y., *August* 1, 1906.

To the Editors: The editorial in your issue of July 28th, The Neurotic Napoleon, brings up a question or two in connection with epilepsy, irrespective of the question as to whether Napoleon had epilepsy or not, that are of much interest. You say: "Napoleon's pulse was habitually very slow, ranging ordinarily between 30 and 35, and never mounting above 55, *and this slowness of the pulse is reputed to be common in epileptics.*" The italics are my own, and are used to call attention to the statement that I doubt has been established as a fact. In *Epilepsy and Its Treatment,* page 271, under the heading Effects of Epilepsy on the Circulation, there is the following: "In 284 cases in which the pulse beat was noted it was found to run uniformly above the normal in 189—64 per cent.; in 20 cases it was below 70; in 74 cases from 70 to 80; in 161 cases from 80 to 100, while the remaining 29 cases it was 100 or over. It was counted in every instance during an interparoxysm period, the patient being entirely free from any immediate epileptic influence. The cause of this apparent phenomenon is uncertain."

I made a study of the pulse of epileptics, of which the foregoing is a part, about five years ago, and I reached the conclusion that as a rule the pulse of the epileptic was habitually higher than that of other persons. On the other hand, I have come across several cases of epilepsy in children in which the pulse varied from 35 to 50, and I had reason to believe that the slow pulse in these particular instances had some direct causal relationship with the type of epilepsy from which the child suffered. I should be glad if you would give the authority for the statement that "slowness of the pulse is reputed to be common in epileptics."

Professor William N. Sloan, whose admirable work on the life of Napoleon many of us have so greatly admired, is probably as competent to speak on the question as to whether or not Napoleon had epilepsy as anyone living at the present time. Some years ago I sought his opinion on this point and he wrote me as follows: "I see no reason to question the fact that Napoleon was an epileptic. There were, I think, two instances when he had seizures which did not amount to fits, but were regarded by contemporaries as symptoms of epilepsy." Sir Lauder Brunton has published the statement more than once that Napoleon's defeat at Waterloo was due to the fact that he was in an epileptic state on that occasion and that his condition during and just after the battle was not due to indigestion as it has been commonly reputed, but to epilepsy. W. P. SPRATLING.

* * * Our remark concerning the pulse of epileptics was qualified by the word "reputed." In M. Cabanès's essay the unqualified statement was made that slowness of the pulse was common in epileptics.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN GENITOURINARY DISEASES.
Meeting of April 18, 1906.
Dr. G. K. SWINBURNE in the chair.

Election of Officers.—Dr. Follen Cabot was elected chairman and Dr. Martin W. Ware secretary.

Atrophy of the Testicle.—Dr. L. BOLTON BANGS read this paper. The chief cause of orchitis was said to be mumps, but in his experience most cases were due to traumatism, suppurative inflammation, syphilis, and varicocele. The case reported was that of a young man of twenty-one, who for several years had complained of an aching and dragging down sensation in the right testis. He had had the veins tied at the age of twelve. Later the scrotum was ablated, and he was circumcised. The vessels were again ligated, and the patient came near dying of hæmorrhage. Afterward he had frequency of urination, turbid urine, and at times blood in the urine. A diagnosis was made of pyelitis. The right testicle had atrophied and almost entirely disappeared, the portion remaining not being larger than a pea. He appeared again fourteen years later, saying that ten years before he had had bloody sputum and had been sent south for pulmonary tuberculosis. This had apparently disappeared. In 1895 he had had mumps, lasting two weeks, complicated by orchitis on the left side. Ten days previous to his coming under the care of Dr. Bangs the pain in the left testicle had recurred. The right testicle was of about the size of a pea. The left was normal in size, but soft and extremely tender. The epididymis was also sensitive. Rest in bed and warm applications caused a diminution of the pain. The normal density of the left testicle was lost. After the subsidence of the orchitis the left testicle remained tender. Dr. Bangs believed that there was at present a beginning atrophy and tuberculosis of the left testicle. Usually atrophy did not begin until two or three months after an orchitis. He spoke of the various theories as to the pathogenesis of the orchitis complicating mumps. He thought the best was the theory of Kocher, that the causative organism of mumps set up a primary inflammation in the urinary tract, and that this inflammation extended from the posterior portion of the urethra to the testicle by way of the vas deferens.

Dr. Martin Ware agreed with Dr. Bangs as to the relative rarity of orchitis following mumps. He had recently seen a case of mumps in which the first symptom was trouble in urination. On the second day of his illness the patient had double parotiditis. Orchitis then developed. The epididymis was not inflamed. He had also recently seen an infant with double orchitis resulting from mumps. Occasionally inflammation of the testicle followed an attack of typhoid fever. It was not usual, however, for infection to result, as the typhoid infection of the urinary tract was a simple bacteriuria.

The Three Glass Catheter Test.—Dr. Abraham L. Wolbarst demonstrated this test. The anterior urethra was washed out with plain water. A catheter of small calibre was inserted into the bladder while the latter was full. The bladder was then emptied and washed out *via* the catheter until the washings come away perfectly clear. The bladder was then filled with plain water, the catheter was withdrawn, and the patient emptied the bladder, when any secretion that might have been in the posterior urethra would be passed out.

Dr. Winfield Ayres thought there was a chance for error in this test, because it was well known that pus which accumulated in the posterior urethra would flow back into the bladder. The test was of considerable value, and he had used it for some time in determining whether or not pus came from the prostate and seminal vesicles.

The Ætiology, Clinical Significance, and Treatment of Paranephritic Sclerosis.—This paper was read by Dr. Albert A. Berg. The condition was defined as a more or less chronic adhesive inflammation of the fibrous and fatty capsules of the kidney. Nonsuppurative paranephritis was totally ignored in the literature. The causes were traumatism and diseased conditions of the kidney, the infections reaching the paranephritic tissues through the lymphatics or the blood channels. The diseases of the kidney that most frequently caused this condition were those due to the pathogenic bacteria and their toxines, especially the pyogenic bacteria. These latter did not necessarily cause a macroscopic suppuration. In some cases the lesions of the primary nephritis had disappeared. The symptoms were a dull, dragging pain in the affected side and possibly fever. There might be tenderness over the kidney, and the kidney was fixed and could not be ballotted. He outlined the history of several of the cases he had studied. In one of them the patient had suffered from paroxysmal pain in the loin for ten months, fever, and chilly sensations. Had lost thirty-five pounds in weight. There was tenderness in the right lumbar region. X ray examination was negative. There were a few pus cells in the urine. The preoperative diagnosis was that of pyelitis, possibly a stone. The kidney was cut down upon, and there was found simply a marked paranephritis. He thought that the marked paranephritis which was always found in cases of nephralgia, pointed to a preexisting affection of the kidney, the lesions of which had disappeared with the removal of the exciting cause. The treatment was by nephrolysis.

Dr. F. Tilden Brown said that this was a form of renal trouble that had baffled clinicians for a long time, and would continue in the future to do so. The diagnosis was made more by exclusion than from the symptoms themselves, though the symptoms brought out by Dr. Berg were important. In Dr. Brown's experience the paroxysms of pain had been quite as severe as, or more so, than in many cases of renal lithiasis, tuberculosis, or severe infections. It was important at the time of ureteral catheterism to make cultural tests.

Dr. George Emerson Brewer had had a case in which there was renal colic radiating down the course of the ureter. He thought some of the cases that Dr. Berg had reported were cases of mild septic infarcts of the kidney.

Dr. L. Bolton Bangs said that in the patients he had operated on the operation had been done more in the nature of an exploratory operation, and he had been pleased to find that incising the true capsule of the kidney had given relief from the pains of which the patients had complained. He now saw the scientific reason for the results obtained.

Dr. Berg said the points brought out about the severity of the pain in this condition were important. The diagnosis between renal calculus and this condition did not depend so much on the severity as on the character of the pain. In stone the pain was of a cutting nature, whereas in the other condition it was a dull, aching pain. He had found in all his cases that the pain was not of that sharp, intense character common in stone. There were not the intestinal symptoms that were found in stone. Cultural tests of the urine should be made in all cases. Rovsing divided his cases into septic and aseptic. In some of the aseptic cases there was a previous history of typhoid fever, or some other infective disease, and it was possible that the infecting agents had disappeared from the kidneys when these patients came under observation. He was in accord with Dr. Brewer in believing that these cases belonged to the less severe grades of bacterial infection of the kidneys.

Multiple Septic Infarcts of the Kidney.—Dr. George Emerson Brewer read a paper with this title. He discussed at length the predisposing and exciting causes. Thirteen cases were reported in detail, with a summary of the symptoms in these cases. He also reported experiments made on animals in this connection, and exhibited photographs of kidneys from patients and from animals experimented on.

Dr. Berg had had five cases, during the last four years, of unilateral septic infarction of the kidney. Three of the cases were due to osteomyelitis of the phalanges. The question of nephrotomy or nephrectomy should be decided by the severity of the toxic symptoms. Nephrectomy was a life saving measure in the very severe cases.

New Inventions.

A PROSTATIC FINGER HOOK.*

By Follen Cabot, M. D.,
New York,
Attending Genitourinary Surgeon, City Hospital; Adjunct Professor Genitourinary Surgery, Postgraduate Medical School; Consulting Urological Surgeon, White Plains Hospital.

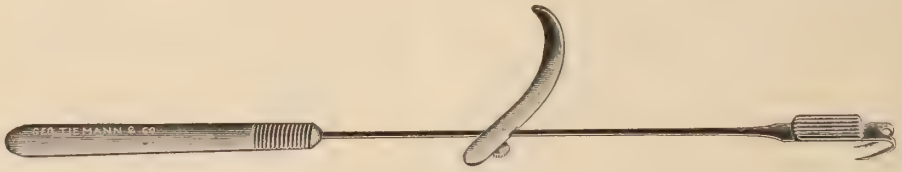
In forty-one personal cases of prostatectomy, twenty-nine of which were by the perineal route, I have always felt the need of an easily manipulated retractor. This has been particularly the case in perineal enucleations. While the ingenious retractors or depressors of Young, Ferguson, Sims, and others have helped in some instances, they have not been to me entirely satisfactory. They are more for use in the early stage of the perineal operation during the "shelling out" part of the procedure. I have found in my operations that the time consumed in removing the lobes after enucleation is considerable. For example, in a recent case the time from the first incision to a complete enucleation was ten minutes. The time of removing the freed lobes was ten more minutes, when it should have not taken more than half that time. The difficulty of steadying and firmly grasping the friable tissue is con-

* Presented at the fifth annual meeting of the American Urological Association, Boston, June, 1906.

siderable, owing partly to the fact that with the usual retractors both hands are required at the wound for their proper manipulation.

The instrument I have devised and which is shown in the accompanying illustration can be readily managed with one hand while the forefinger of the other hand is in the rectum steadying the enucleated lobe we are attempting to remove. The retractor is composed of a steel shaft six inches long, one thirty-second inch in the narrowest, and one sixteenth inch in greatest diameter. It bends readily and springs back into place when pressure is removed. Attached to the sheath at one end is a handle, three inches long, to be used when the double claw at the other end has firmly secured the loose or semiloose lobe. Attached to the shaft is an adjustable curved support to fit in over the base of the thumb and index finger. This support can be moved back and forth according to the length of the surgeon's finger. On the distal end of the shaft and opposite to the double claw is a small support to steady the instrument against the ball of the index finger. The whole instrument is thus held steadily in place in front of the finger, and takes up little more room than the finger when introduced without it. The tip of the index finger should extend beyond the end of the instrument, so that by the sense of touch the best place for grasping the lobe can be readily determined.

With this retractor firmly grasping the prostate and the index finger of the other hand in the rectum the lobe to be withdrawn is firmly anchored and drawn down into the perineal wound. Here if it is large it is grasped by a double tenaculum and completely removed by more subdivision if necessary.



I have used this retractor in two cases with gratifying results. In the last case fully five minutes, I believe, were saved, and the operation was done with much more ease and accuracy.

The instrument is made in two sizes, one about twice as heavy as the one described here in case a deeper grip of the prostatic tissue is desired. With one finger in the rectum and the other hand guiding the retractor in the wound there is no danger of wounding the rectum or other tissues in the region of the prostate. The instrument can also be used in operations by the suprapubic route, but here it is not as necessary.

In addition to using this instrument in my prostatic work I am planning to employ a rubber protector which fits loosely in the rectum and is secured by guy strings outside. This is done to avoid infection of the wound by the rectal contents. With the ordinary rubber glove or cot, and in attempts at cleansing the finger each time it is introduced into the rectum, the dangers of contamination are not practically obviated. By the method I speak of we have a perfect rubber dam which is thin enough not to interfere with the sense of touch, and with a lubricant on the finger no difficulty should be encountered on introduction. I find in my cases the value of the finger in the rectum, as suggested by Guiteras, becomes more and more a decided help, and in some instances has to be placed there almost continually as a guide and aid in the enucleation of the hypertrophied prostate.

129 EAST THIRTY-FIRST STREET.

Book Notices.

Technique du traitement des tumeurs blanches. Par le Dr. F. CALOT, Chirurgien en chef de l'hôpital Rothschild, etc. Avec 192 figures dans le texte. Paris: Masson et Cie, 1906. Pp. 272.

This brochure is a delightfully written account of the injection treatment of joint tuberculous disease, which Dr. Calot has done so much to perfect. The author believes that tuberculous abscesses and joints should not be opened, but should be aspirated and injected. He uses a mixture of iodoform and creosote or an emulsion of camphorated naphthol in glycerin in small repeated doses, and according to a precise technique. The results reported leave nothing to be desired. The book is indispensable to those who wish to familiarize themselves with this method.

The Diseases of Infancy and Childhood. Designed for the Use of Students and Practitioners of Medicine. By HENRY KOPLIK, M. D., Attending Physician to the Mount Sinai Hospital, ex-President of the American Pædiatric Society, etc. Second Edition, Thoroughly Revised and Enlarged. Illustrated with 184 Engravings and 33 Plates in Color and Monochrome. Philadelphia: Lea Brothers & Co., 1906. Pp. 13-885.

This work has become widely known through its first edition. It is eminently a personal book, although it contains many references in the text as well as references to other authorities for collateral reading. The book reflects largely the author's personal views and experience.

It is noteworthy for the comparatively great attention given to infancy and the diseases of the first three or four years of life, while the chapters on the physiology and pathology of the new born are unusually extensive. The diseases of the new born are considered in an especially thorough manner. This portion of the work deserves special mention, for it is one of its prominent features.

The section on infant feeding has been remodeled and largely rewritten. It presents a decided advance over what was taught a few years ago. But it must be said that in this book, as in every other work on pædiatrics, the section on infant feeding leaves much to be desired. It is a difficult subject, and the general practitioner who has not time or inclination to make an extended study finds it a confusing and trying one. Our knowledge of the subject is still far from that perfection which is so much to be desired. Until its exposition can be made more definite and less intricate, many practitioners will turn to proprietary foods which can be prescribed with little or no mental exertion.

The specific infectious diseases receive a large proportionate amount of attention, and on the whole are well handled. The articles on meningitis and typhoid fever have been extensively changed, evidently as the result of the author's recent experience.

The book is one that is to be classed as clinical in type, for it does not enter extensively into the pathology and the speculative portions of medicine. It is, therefore, practical in character and must be considered as a valuable addition to pædiatric literature.

Miscellany.

Conservative Surgery of the Uterine Annexa.—West, in the *American Journal of Obstetrics*, June, 1906, in a review of this subject, seeks to ascertain the number of pregnancies which have followed resection of the tubes, the number of operations required on account of recurrent troubles, the number of operations required upon those tubes from which pus had been removed, the tubes cleansed and in which a new opening was made. He believes that if a benign tumor of one ovary is present the entire ovary should be removed. If the patient has passed the menopause both ovaries should be removed. If sterility exists and a condition interfering with fecundation is found one or more conservative operations may be performed. A portion of a diseased ovary may be removed if circumstances seem to justify it, with the chance that a second operation may be required. If an ovary is carcinomatous uterus and ovaries should be removed as thoroughly as possible, exception being made in the case of papillomatous cysts. If there is double pyosalpinx and one ovary seems to be healthy it may be retained. In hysterectomy for fibromvoma the ovaries should be retained if healthy.

A Pedunculated Fibroid.—Dr. W. H. Jefferys, of Shanghai, writes in *The China Medical Missionary Journal*, July, 1906: Large tumors are old stories in China and fibroids even larger than that which I present have been reported, though most of our very large tumors are ovarian. Yet each of these cases has its own points of interest. My patient was in his fifties and a coppersmith by trade. He had first noticed the growth sixteen years previously as a small movable nodule on the right side of the chest and about the fifth rib. It grew steadily and slowly through the years, becoming finally pedunculated and interfering considerably with his work. It was punctured at various times by native practitioners, and the scars of these punctures and of the local inflammation they had set up could be clearly seen. In walking, the patient carried the tumor on his right hip posteriorly and leaned far to the left, and when seated he placed it on a low table at his side. When stretched, the neck was only about half the size it showed when relaxed. He wore one pair of trousers of the ordinary variety and another huge pair to include the tumor, and one day, in crossing from the hospital to the out patient department, he was arrested by a zealous policeman under suspicion of removing hospital property under his voluminous garments. His joy on being searched in our presence and being the innocent cause of complete loss of face on the part of the policeman was delicious to behold. It almost made up to him for having the tumor. In June last he appeared, but refusing operation was lost sight of till October, when he again presented himself, having made up his mind "to have it taken off, though he believed it would kill him." At least he had been so assured "by every one in his village." In this connection I remember that "his village" came to visit him on the day of the operation, and although it seemed cordially glad to see him recover alive from his anæsthetic, it, like the policeman, did seem a trifle "m-mien-khong tse." The removal of the tumor was easy, hæmorrhage being controlled by hip pins with a large rubber tourniquet about them. There was an extensive hypertrophy of the pectoral muscles, which humped itself into an unsightly lump in the healing process and finally suppurated, requiring removal en masse at a later anæsthetization. Otherwise recovery was satisfactory. The tumor weighed, after removal and exsanguination, sixty pounds; was pretty healthy throughout, skin and all, though the centre was the object of calcareous degeneration. There was a large quantity of oily serum throughout the subcutaneous tissues. The body of the tumor was fibroid.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending August 10, 1906:

Places.	Date.	Cases.	Deaths.
Smallpox—United States.			
Florida—Duval County	July 28-Aug. 4	1	
Florida—Escambia County	July 28-Aug. 4	1	
Illinois—Galesburg	July 21-28	3	
Louisiana—New Orleans	July 21-28	12	
Maine—Blaine	July 30	Present.	
Maine—Mars Hill	July 30	Present.	
North Carolina—General	June 1-30	172	
North Dakota—General	May 1-31	24	
North Dakota—General	June 1-30	36	
Ohio—East Liverpool	July 1-31	2	
Oklahoma—Oklahoma City	July 21-Aug. 4	3	
Tennessee—Knoxville	July 21-28	1	
Tennessee—Memphis	July 28-Aug. 4	1	
Wisconsin—Appleton	July 21-28	3	
Smallpox—Foreign.			
Africa—Cape Town	June 23-30	2	
Chile—Antofagasta	June 10-24	27	9
Chile—Iquique	July 7	Present.	
Gibraltar	July 8-22	2	
Great Britain—Hull	July 7-14		1
India—Calcutta	June 16-23		8
India—Karachi	June 24-July 1	2	1
India—Madras	June 23-29		2
India—Rangoon	June 16-23		5
Nicaragua—Bluefields	Aug. 6	1	
Panama—Colon	July 18-21	5	
Russia—Odessa	July 7-14	9	
Siberia—Vladivostok	June 10-14	2	
Spain—Barcelona	July 10-20		12
Yellow Fever—Foreign.			
Cuba—Matanzas Province	Aug. 2		1
Mexico—Vera Cruz	July 21-28	1	1
Cholera—Insular.			
Philippine Islands—Manila	June 9-23	23	17
Philippine Islands—Provinces	June 9-23	100	58
Cholera—Foreign.			
India—Calcutta	June 16-23		31
India—Madras	June 23-29		8
India—Rangoon	June 16-23		2
Plague—Insular.			
Hawaii—Honolulu	Aug. 7		1
Plague—Foreign.			
Australia—Brisbane	July 9	1	
Australia—Fremantle	July 9	2	1
Australia—Sydney	June 9-16	1	
Chile—Antofagasta	June 10-24	10	2
India—General	June 16-23	1,130	952
India—Calcutta	June 16-23		29
India—Karachi	June 24-July 1	21	21
India—Rangoon	June 16-23		94

Public Health and Marine Hospital Service:

List of Changes of Stations and Duties of Commissioned and Non-commissioned Officers of the Public Health and Marine Hospital Service for the seven days ending August 8, 1906:

ALLEN, G. C., Pharmacist. Granted leave of absence for twenty-three days, from August 4, 1906, and excused for further period of one month, from August 27, 1906.

CHENEY, E. L., Acting Assistant Surgeon. Granted leave of absence for ten days, during month of August.

FOSTER, J. P. C., Acting Assistant Surgeon. Granted leave of absence for twenty-four days, from August 3, 1906.

GUITERAS, G. M., Surgeon. Directed to proceed to Ceiba, Honduras, for special temporary duty.

GUSTETTER, A. L., Acting Assistant Surgeon. Granted leave of absence for thirty days, from August 16, 1906.

HICKS, W. R., Acting Assistant Surgeon. Granted leave of absence for six days, from August 7, 1906.

KEATLEY, H. W., Acting Assistant Surgeon. Granted leave of absence for two days, from July 18, 1906, under paragraph 210 of the Regulations.

KENNARD, KARL S., Acting Assistant Surgeon. Granted leave of absence for thirty days, from August 27, 1906.

KERR, J. W., Assistant Surgeon General. Granted leave of absence for fourteen days, from August 9, 1906.

MAGUIRE, E. D., Pharmacist. Granted leave of absence for thirty days, from August 6, 1906.

STILES, CH. W., Chief Division of Zoology, Hygienic Laboratory. Granted leave of absence for nineteen days, from August 6, 1906.

SLAUGHTER, A. W., Acting Assistant Surgeon. Granted leave of absence for five days, from August 11, 1906.

TROXLER, R. F., Pharmacist. Relieved from duty at Chicago, Ill., and directed to report at Bureau, Washington, D. C., for temporary duty.

Board Convened.

A Board of Medical Officers convened to meet at Port Townsend, Wash., for the purpose of making physical examination, under immigration laws, of certain persons who shall appear before the board. Detail for the board: Passed Assistant Surgeon J. H. Oakley, chairman; Acting Assistant Surgeon L. T. Seavey, and Acting Assistant Surgeon R. Lyall, recorder.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army for the week ending August 11, 1906:

BAKER, DAVID, Captain and Assistant Surgeon. Left Fort Bliss *en route* to Camp of Instruction, Austin, Texas.

CLAYTON, J. B., Captain and Assistant Surgeon. Unexpired portion of leave revoked, and ordered to proceed to Camp of Instruction, Fort Riley, Kansas.

CORBUSIER, WILLIAM H., Lieutenant Colonel and Deputy Surgeon General. Left Vancouver Barracks, Wash., *en route* to Camp of Instruction, American Lake, Wash., for duty as chief surgeon.

CROSBY, WILLIAM D., Major and Surgeon. Assumed the duties of Chief Surgeon, Headquarters, Department of the Columbia, in addition to his present duties as surgeon, Vancouver Barracks, Wash.

FLAGG, CHARLES E. B., Captain and Assistant Surgeon. Left Vancouver Barracks *en route* to Camp of Instruction, American Lake, Wash.

FORD, CLYDE S., Captain and Assistant Surgeon. Relieved from duty at the Medical Supply Depot, New York city, and ordered to the Philippines Division for duty.

GRAY, W. W., Lieutenant Colonel and Deputy Surgeon General. Granted leave of absence for ten days, to take effect upon the expiration of his present sick leave.

HANSELL, H. S., First Lieutenant and Assistant Surgeon. Left Presidio, San Francisco, Cal., *en route* to Camp of Instruction, American Lake, Wash.

HARTNETT, E. H., Captain and Assistant Surgeon. Left Fort Hancock, N. J., on ten days' leave of absence.

HEYSINGER, JAMES D., First Lieutenant and Assistant Surgeon. Assigned to duty as surgeon of the transport *Sherman.*

KEEFER, FRANK R., Major and Surgeon. Left Presidio, Monterey, Cal., *en route* to Camp of Instruction, American Lake, Wash.

LAMBERT, SAMUEL E., First Lieutenant and Assistant Surgeon. Reports arrival at Camp of Instruction, American Lake, Wash.

LEWIS, WILLIAM F., Captain and Assistant Surgeon. Ordered to report in person on October 16, 1906, to Major William H. Arthur, surgeon, president of the examining board, Army Medical Museum Building, Washington, D. C., for examination to determine his fitness for promotion.

LITTLE, W. L., First Lieutenant and Assistant Surgeon. Ordered to report in person to Major William H. Arthur, surgeon, president of the examining board, Army Medical Museum Building, Washington, D. C., for examination to determine his fitness for promotion.

LYNCH, CHARLES, Major and Surgeon, general staff. Detail to attend Ohio National Guard encampment revoked.

MONCREIF, W. H., First Lieutenant and Assistant Surgeon. Ordered to report in person to Major William H. Arthur, surgeon, president of the examining board, Army Medical Museum Building, Washington, D. C., for examination to determine his fitness for promotion.

NEWGARDEN, GEORGE J., Major and Surgeon. Relieved from duty in the Philippines Division, to take effect at such time as will enable him to comply with the order, and will proceed on the first available transport sailing after November 1, 1906, from Manila, P. I., to San Francisco, Cal., and upon arrival will report by telegraph to the Military Secretary for further orders.

PALMER, FREDERICK W., First Lieutenant and Assistant Surgeon. Ordered to report in person, October 16, 1906, to Lieutenant Colonel George H. Torney, deputy surgeon general, president of the examining board, Army General Hospital, Presidio, San Francisco, Cal., for examination to determine fitness for advancement.

PURNELL, HARRY S., First Lieutenant and Assistant Surgeon. Granted leave of absence for one month.

PYLES, WILLIAM L., First Lieutenant and Assistant Surgeon. Leave of absence extended fifteen days.

REED, HOWARD A., First Lieutenant and Assistant Surgeon. Assigned to temporary duty, Presidio, Monterey, Cal.

RHOADS, THOMAS L., Captain and Assistant Surgeon. Left West Point, N. Y., *en route* to Camp of Instruction, Fort Riley, Kansas.

RICHARDS, R. L., First Lieutenant and Assistant Surgeon. Reports departure from Vancouver Barracks, *en route* to Fort Columbia, Wash., for temporary duty.

SHOOK, JAY R., Captain and Assistant Surgeon. Arrived at Camp of Instruction, Fort Riley, Kansas.

TEFFT, WILLIAM H., First Lieutenant and Assistant Surgeon. Arrived at Camp of Instruction, Fort Benjamin Harrison, Ind.

VEDDER, E. B., First Lieutenant and Assistant Surgeon. Relieved from further duty as surgeon of the transport *Sherman,* and assigned to duty in the Philippines Division.

WEBB, W. D., Captain and Assistant Surgeon. Arrived at Camp of Instruction, Austin, Texas.

WOLFE, E. P., Captain and Assistant Surgeon. Granted thirty days' leave of absence.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy for the week ending August 11, 1906:

JONES, A. MCK., Acting Assistant Surgeon. Appointed an acting assistant surgeon, from August 7, 1906.

LONGABAUGH, I., Acting Assistant Surgeon. Appointed an acting assistant surgeon, from August 7, 1906.

MOORE, J. M., Surgeon. Ordered to the *Puritan.*

SMITH, H. L., Acting Assistant Surgeon. Ordered to the Naval Hospital, Philadelphia, Pa.

Births, Marriages, and Deaths.

Married.

BROGAN—MCCUE.—In Brookline, Massachusetts, on Sunday, August 4th, Dr. William N. Brogan and Miss Ella Genevieve McCue.

CALDWELL—TRYON.—In Oakland, California, on Monday, July 16th, Dr. E. J. Caldwell and Miss Annie Tryon.

GARY—BOLLINGER.—In Kahoka, Missouri, on Wednesday, August 1st, Dr. Isaiah Gary and Miss Emma C. Bollinger.

STRICKLAND—AMBROSELLI.—In Crystal Springs, Virginia, on Wednesday, August 1st, Dr. James T. Strickland and Miss Evangeline Ambroselli.

Died.

BURNELL.—In Holbrook, Long Island, N. Y., on Friday, August 3rd, Dr. Sereno Burnell, aged eighty-seven years.

CLASS.—In Benton Harbor, Michigan, on Thursday, August 9th, Dr. W. J. Class, of the Chicago Board of Health.

FRANK.—In Baltimore, on Friday, August 3rd, Dr. Samuel L. Frank, aged sixty-four years.

GREENFIELD.—In Rockland, Massachusetts, on Thursday, August 9th, Dr. M. L. Greenfield, aged forty-seven years.

INGALS.—In Denver, Colorado, on Thursday, August 2nd, Dr. Edmund Ingals, of Chicago, aged thirty-five years.

MARTINE.—In Glens Falls, N. Y., on Wednesday, August 8th, Dr. Godfrey R. Martine.

SHOMAN.—In Findlay, Ohio, on Thursday, August 2nd, Dr. Charles M. Shoman, of North Baltimore.

WEIR.—In Owensburgh, Kentucky, on Thursday, August 9th, Dr. James Weir, aged fifty years.

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Original Communications.

STEREOSKIAGRAPHY.

By G. H. STOVER, M. D.,

Denver, Colo.,

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Since the discovery of the Röntgen ray there have been many improvements in the apparatus used, and also in the technics employed with the apparatus. Perhaps one of the greatest improvements in technics is that which has been called stereoskiagraphy by myself, and to which others have applied various other names; it consists in making a pair of skiagrams of the part under examination, in such a way that by means of a special stereoscope the observer obtains from this pair of skiagrams a view conveying perfect perspective. I consider the stereoskiagram to be a most useful means of Röntgen diagnosis. Expressing its value in mathematical terms, I would use the following equation: the stereoskiagram is to the plane skiagram as the plane skiagram is to the fluoroscopic image.

It needs no elaborate argument to set forth the superiority of the plane skiagram over the fluoroscopic image. The fluoroscope, with its faint light, necessarily varying from second to second, its lack of sensitiveness in the fluorescent screen, combined with the imperfection of the human retina for recording details during a transitory view under these handicaps, is a most unsatisfactory instrument.

The sensitive film of the photographic negative which catches so many details beyond the ken of the fluorescent screen, which records them permanently so that they may be examined at leisure under varying illuminations, or compared with skiagrams of normal parts, and which gives a record that may be filed away to be referred to at any time needed, is certainly a more useful means of information than any fluoroscope can possibly be. Yet, I must not be understood as saying that the fluoroscope is a useless instrument. Certainly, as a general rule it is of very limited application when complete information is desired; however, in one department of radiodiagnosis it is of much value; I refer to radiodiagnosis of the chest and its contents; here we have in the fluoroscope an instrument that gives us information which it is as yet impossible to obtain in any other way, in studying the movements and position of the heart, the excursion of the diaphragm, etc.

The plane skiagram, however valuable it may be, yet falls considerably short of giving full information; remember, that it is a shadow—something more than a shadow as ordinarily understood, it is true, because it gives more or less idea of structure—but a shadow composed of the combined shadows of an innumerable number of planes perpendicular to the plane of the plate; but of the planes lying parallel to the surface of the plate, we are given almost no information. It is true that the expert often finds in the plane skiagram facts regarding objects lying in the various parallel planes, but this is usually true only with those objects whose sizes are known, and also when the distance of the tube from the part and the plate are also known. For instance, in a skiagram showing a fracture of the femur, with overriding of the fragments, if the end of one fragment shows a clearer shadow than the other, that end is apt to be the one nearest the plate; yet this may not be so if the fragment farthest from the plate is thicker than the other, for it will then cast the deeper shadow. In the case of a bullet of known size, one may judge by the amount of enlargement made by the skiagram, as to the distance of the bullet from the plate. Of course these are not finely accurate evidences, but roughly they are often true.

One way of gaining information regarding the contents of planes parallel to the plate is to take a second picture with the tube and plate at right angles to their position when making the first exposure. This is often hard to do, and at times by reason of the nature of the part examined, impossible, as in the chest, abdomen, and pelvis. Even when two skiagrams at right angles to each other are obtained, it is not so easy to get the image of the condition of the parts into the mind by mentally combining the facts as revealed in the two, as it is to gain the information wanted by looking at the stereoscopic pair, thus having the actual relationships in the pictures presented at once to view, without the labor of working over two skiagrams of widely different appearance.

Every one remembers the stereoscopic views once so popular that they were to be found on all parlor tables. These gave a much better idea of the perspective relationships existing between the different objects shown than could be gotten from a plane photograph; long acquaintance, however, in every day life with the objects shown

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in photographs enables one to elaborate in his own mind an ordinary print, unconsciously perceiving with the eye of the mind the perspectives and relationships not shown in the plane print, until it is almost as clear as a stereoscopic view of the same scene would be. But the stereoskiagram has a proportionately greater advantage over the plane skiagram in the fact that the scene which is here depicted is not one with which the observer is daily familiar, and it is usually an exhibit of abnormal conditions and relations, made so by traumatism or disease.

The stereoskiagram gives to the mind in one picture a view of all relations existing in the part examined, anteroposterior, lateral, and all intermediate planes.

The desire that all of us have felt so many times when examining an obscure condition for some means of "seeing what it looks like inside" is in a large measure realized by stereoskiagraphy, the deeper parts standing out every plainly in their true relations, surrounded by the semi-transparent veil of soft parts.

In the production of the stereoskiagram but little special apparatus is absolutely necessary, but a good deal of pains must be taken in making the exposures in order to be successful. A powerful coil is indispensable in order to obtain a sufficient quantity of Röntgen rays for the production of a skiagram in a very short time. A strong rigid table or other support is needed in order that the position of the patient may not be changed during the exposures.

The plateholder is of wood, with a sheet of metal fastened to the surface on which the plate is to be placed, and over this is stretched a strong sheet of canvas, so that the plate may be slipped in or out of the plateholder without disturbing the patient or moving the plateholder. Fibre is not a good cover for these plateholders unless very carefully selected, for the reason that it is apt to contain small bits of substance opaque to the Röntgen ray, and the shadows of these substances may be confusing at times.

It is well to have the tube suspended from a rigid support which is graduated to a scale, but in practice this may often be dispensed with, using simply the ordinary tubeholder.

In making a stereoskiagram, the patient is placed on the table with the part to be examined on the side of the table nearest to the coil. The plateholder is placed under the part to be examined in such a way that the centre of the plate will be directly under the centre of the part, and the plate is inserted into the plateholder. The tube is suspended above with its anode in a line perpendicular to the centre of the plate and about twenty inches from the plate. It is then shifted a distance of about one to one and a half inches in a line perpendicular to the axis of the part, and in a direction away from the coil; it is best to make the first exposure with the tube at its farthest distance from the coil, so that when the tube is shifted to its second position it will be moved toward the coil, thus avoiding the danger of breaking the terminals from the tube or disturbing the relative position of the tube by pulling against the connecting wires, as might happen if the reverse movement were carried out in coming to the second position. In the location of foreign bodies we may sometimes rely on the natural landmarks to guide us in making an incision for their removal, but as a rule it will be well to place some sort of a marker on the skin in the near neighborhood, something that will show plainly in the skiagram; pieces of wire such as are used for fusing electric circuits I have found to be best for this purpose; if the body under investigation is a fragment of needle I bend the wire into a circular form; a coin may be used as a marker, but not in places where its shadow may resemble the shadow of the object sought for, as a bullet, or a swallowed coin, etc. A good mark made on the skin with a stick of lunar caustic will sometimes show in the skiagram. The location of the marker should be indicated on the skin by silver nitrate, or indelible ink, or some substance which will not be removed in the preparation of the patient for surgical removal of the foreign body.

After the tube has been placed in position, an exposure is made, the plate slipped out of the plateholder without moving the patient or plateholder, the plate taken to the dark room, and another plate brought in and inserted into the plateholder. The tube is now shifted toward the coil—or in a direction opposite to that toward which its first movement was made—to a distance (one to one and a half inches) from the perpendicular erected from the centre of the plate in a line at right angles with the axis of the part, equal to the amount of its first displacement beyond the perpendicular from the plate, and the tube must remain in the same plane parallel with the surface of the plate in these movements. A second exposure is then made.

One of the compression diaphragms so useful to the specialist in skiagraphy has a means of setting the tube for these exposures, using a pointer set above the tube in the axis of the direct rays; certain lines on a dial above the tube indicate the position which the pointer should occupy when the tube and cylinder are correctly placed.

After the photographic manipulations of the plates are completed place them side by side in a proper light with the film side toward the observer, and the plate first made to the observer's right hand. As a rule the best illumination is obtained from a clear north sky (no direct sunlight), or an illuminating box containing incandescent lamps and having a ground glass side, against which the negatives are placed. In an illuminating box the light should be diffused from many sources and not from only one or two lamps. The box I have devised contains twelve lamps of sixteen candle power, and will illuminate two 18 by 22 negatives side by side. The plates may now be studied by the use of a special stereoscope or by the naked eye if the muscle balance of the recti is good, and the sight in both eyes is good. An observer blind in one eye cannot use a stereoscope. The common parlor stereoscope is of no use, as it has convex prisms of short focus. I made the stereoscope I use by taking the hood of an ordinary stereoscope, removing the lenses from it and replacing them with plane prisms of

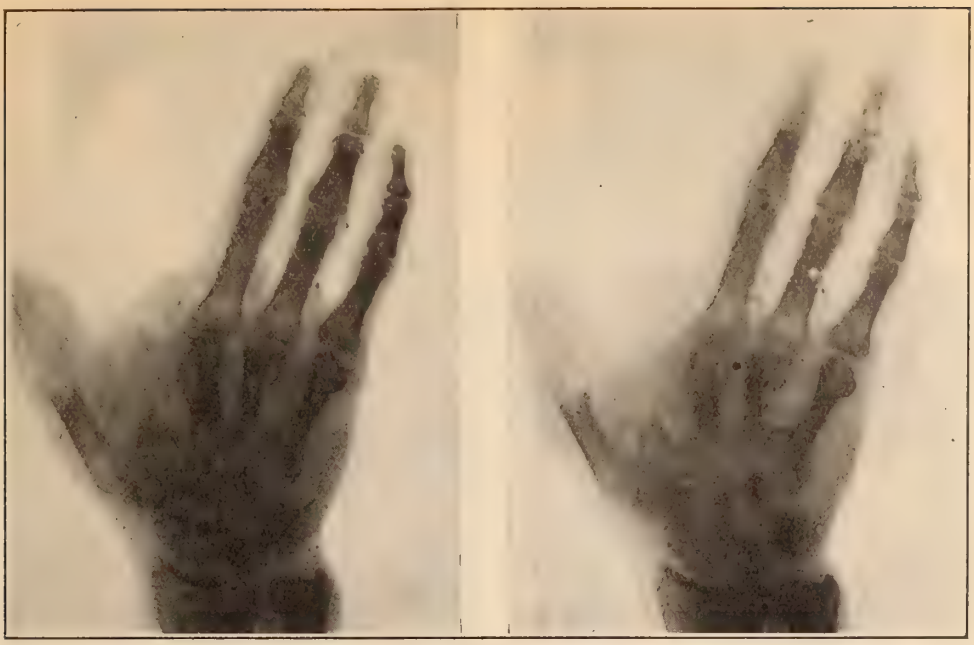


FIG. 1.—Dynamite injury of hand; view from dorsum.

twelve degrees with bases out. (This is used by the gentlemen who consult me, more than by myself, for by practice I have acquired the ability to diverge the eyeballs, and in this way can get a stereoscopic view of my largest plates without the use of the lenses. This is a trick that can easily be learned by a moderate amount of practice in the following manner: Place the plates just as I direct for use with the stereoscope; stand before them at a distance of from three to six feet, according to the size of the plates; select a point at the middle of the line where the edges of the plates touch; focus the eyes upon this point and then begin to look through it and beyond it toward a point farther and farther distant; as this is done the two plates and their images will begin to come together, and after a time a critical point will be reached at which the two images will fuse into a central image, which will give the desired stereoscopic effect. After one has practiced this manœuvre for a time he will be able to get the stereoscopic view by simply diverging the eyeballs without consciously going through the performance of focusing through the plates for distance. If the observer will use the common "stereoscopic views" for practice objects, discarding the stereoscope itself, he will soon get the idea.)

FIG. 2.—Dynamite injury of hand; view from palm.

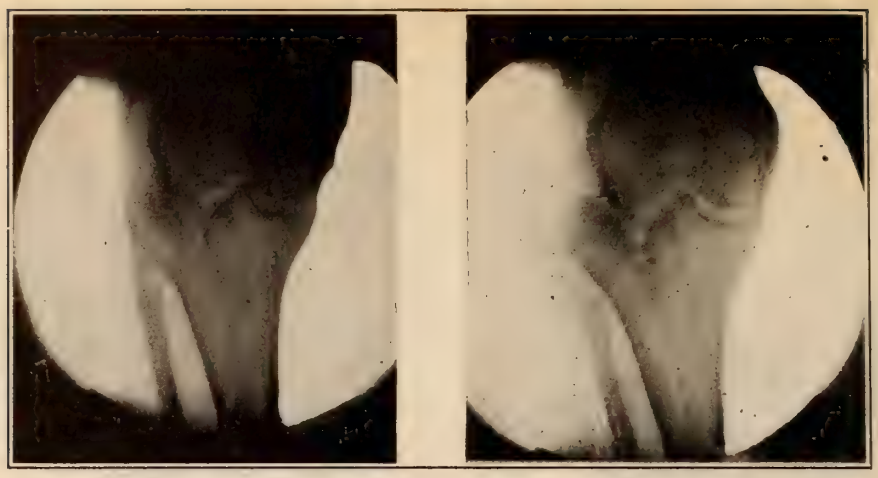


FIG. 3.—Longitudinal fracture of tibia.

If the technics in making the exposures has been correctly carried out, corresponding points on the two skiagrams will be on the same horizontal plane; if this is not so they should be leveled by raising one of them upon strips of pasteboard. Eight by ten plates may be viewed from a distance of from one to three feet, and larger ones from a greater distance. The observer should stand before the plates so that the line where the plates meet is directly in front of him; then looking at them, or rather at the line between them, from the proper distance, he will see three negatives instead of two, and he should vary his distance until this occurs; then let him study the negative which appears to be in the middle, disregarding the other two, and soon he will perceive the beautiful details of perspective; let him direct his view from one point to another of that middle negative, and no further argument will be needed to convince him of the superiority of this method. With the negatives placed as just directed the part will be viewed as if the observer were looking toward that side of the part which was nearest the plate when the exposures were made, but right and left are reversed, that is, a right hand, for instance, looks like a left hand. After studying the plates in this position, shift them, that is, keeping the film side still toward the observer, put the first plate made on the observer's left; then the view is as if one were looking at the part from the side which was farthest from the plate when the exposures were made; in this instance, right and left are shown correctly.

The directions for placing the negatives which have just been given are intended to be followed when the plates are wet; since time is often an important element in skiagraphic examinations, the plates must often be examined while wet, or even as soon as "fixed." In such a case it would not be wise to place the film side of the plate close to the ground glass under which is a number of incandescent lamps giving off heat; if the plates are dry they may be placed with the glass side toward the observer, and the one first made toward the observer's left hand; this will give a view as if one were looking at the part from the side nearest the plate when the exposures were made, and the right and left relations are shown correctly. Then turn them film side out (with the plate first made still on the observer's left hand), and the view is as if one were looking from the side that was farthest from the plates when the exposure was made, and the right and left relations are still correctly shown.

Thus from one set of plates we are given perfect stereoscopic views of the part from either side, truly a remarkable thing.

There are few if any skiagraphic examinations that will not be increased in value if the stereo-

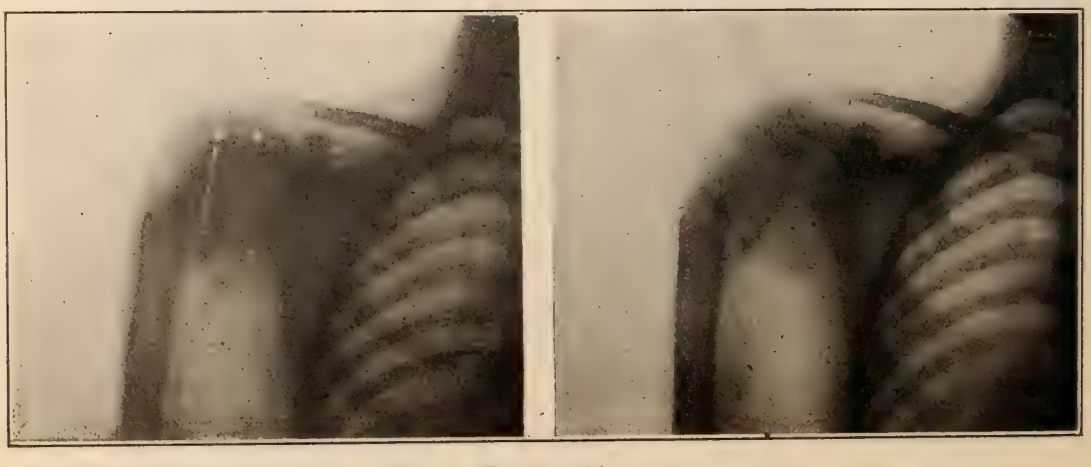


FIG. 4.—Fracture of humerus.

skiagraphic method is used: In the case of foreign bodies, one sees the relations existing between foreign body, natural landmarks, and artificial landmarks in a clear manner that is not easily forgotten, and makes it much easier for the operator to proceed successfully in their removal with this picture in his mind than if he were compelled to follow mentally a number of imaginary lines to their intersection. In some lesions the stereoskiagraphic method affords information that could not be gained by any other method, either by a single ordinary plane skiagram or by two skiagrams at right angles to each other. I have stereoskiagrams of two cases of pathological dislocation of the head of the humerus in which I am confident the diagnosis could not have

Fig. 5.—Fracture of humerus after wiring.

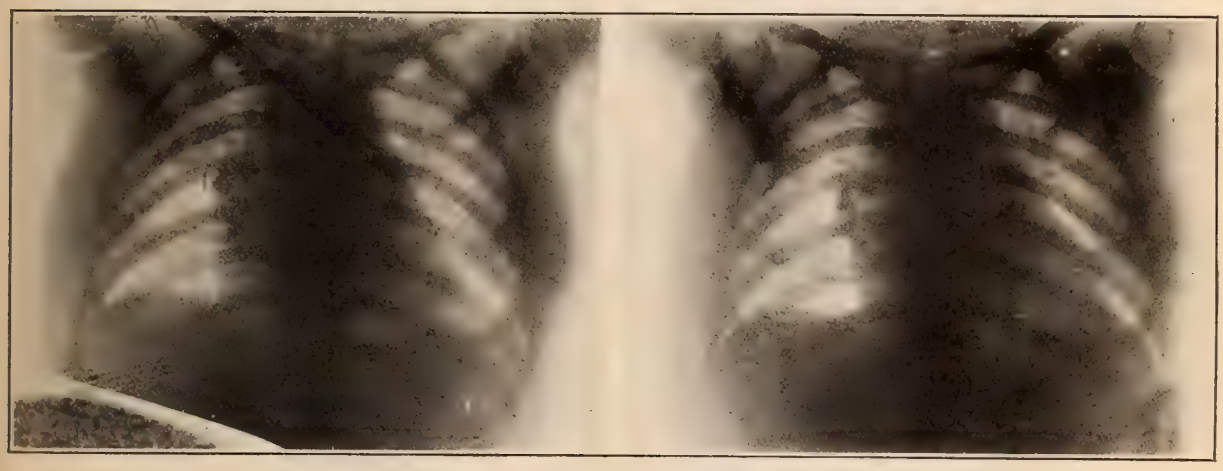


Fig. 6.—Chest; rear view; acute focal pneumonitis of right lung.

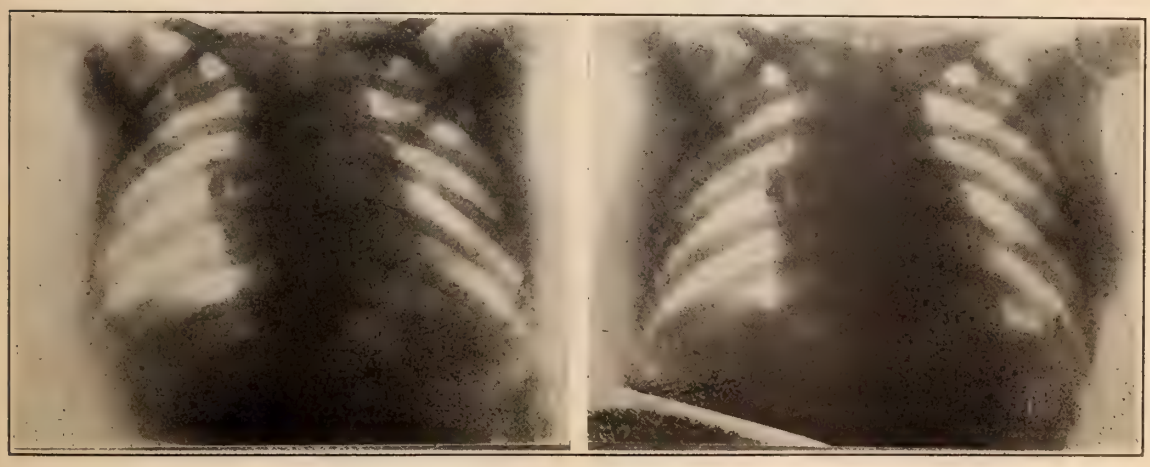


Fig. 7.—Chest; front view; acute focal pneumonitis of right lung.

been made otherwise. In case of aneurysm of the aorta, the stereoskiagram brings the tumor into relief in a way that will absolutely prevent confusing it with another growth. In fracture cases, the stereoskiagram shows so clearly the amount and kind of displacement that valuable suggestions are afforded as to details of manipulation in reposition and dressing.

In the stereoskiagram of the chest, where information as to pulmonary conditions is sought, the perspective of the contents of the thorax is a most beautiful picture; shadows which in the

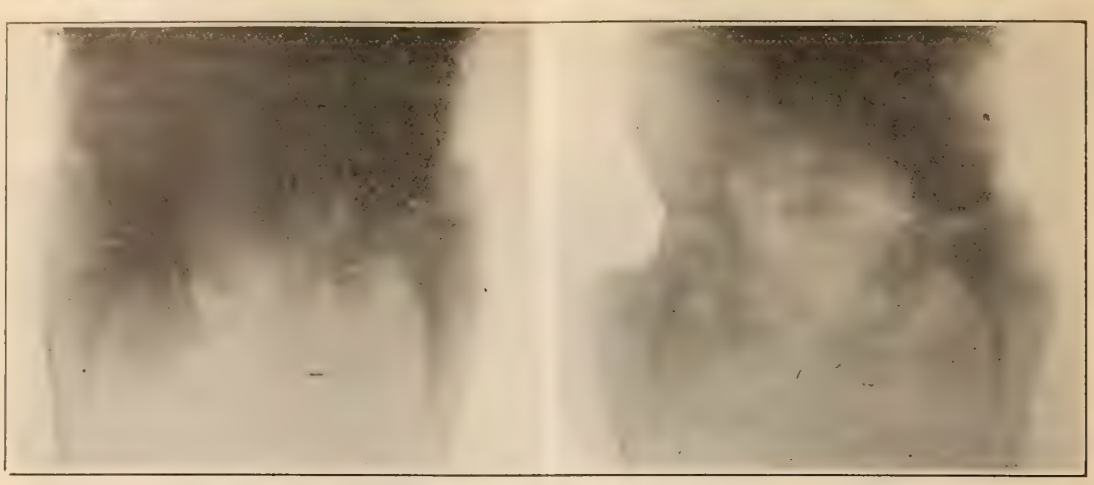


FIG. 8.—Tuberculosis of hip; rear view.

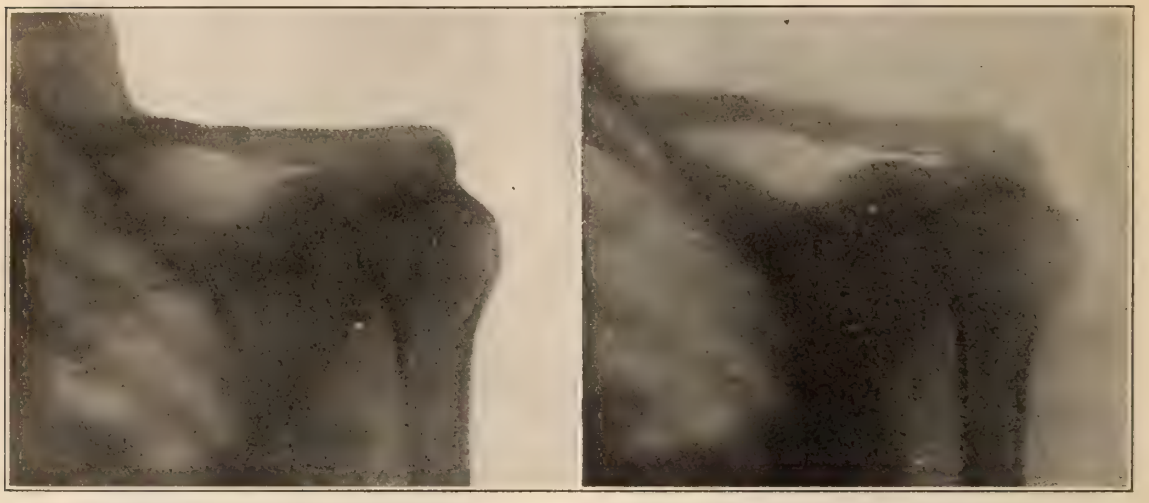


FIG. 9.—Tuberculosis of acromion; dislocation of head of humerus by accumulation of pus.

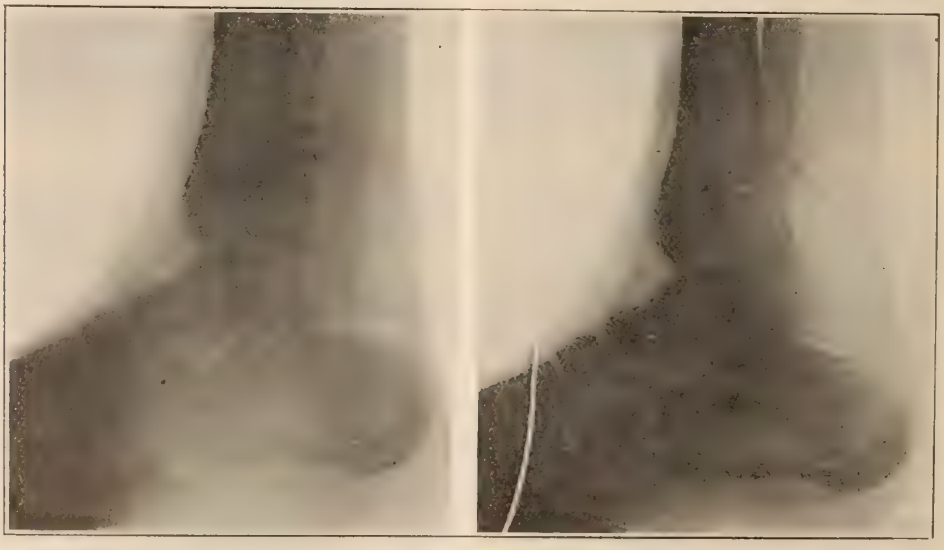


FIG. 10.—Gunshot wound of fibula; bullet in tibia.

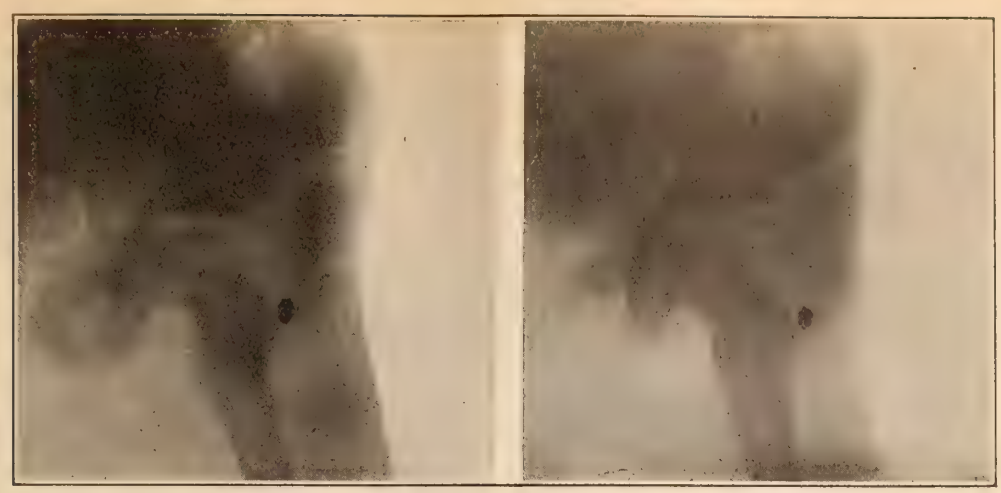


FIG. 11.—Bullet near great trochanter; front view.

plane skiagram fuse into one mass can be in the stereoskiagram distinguished from one another and differentiated into pleuritic thickenings, pulmonary consolidations, patches of fibrosis, enlarged glands, fluid effusions, and the exact location of concretions, can be made in a manner impossible by any other means. In case where there is doubt as to whether a foreign body is in the trachea or œsophagus, the stereoskiagram readily differentiates; a bougie in the œsophagus when the exposures are made will add to the certainty sometimes.

In examining for stone in the kidney, bladder, or ureter, there are times when a knowledge of the exact location of the position of a foreign body whose shadow is seen may prevent serious mistakes. The phleboliths which are so annoying sometimes when one is searching for a suspected ureteral stone could often be positively identified if a bougie were placed in the ureter and a stereoskiagram made.

In ophthalmological skiagraphy I prefer the method of Sweet for locating foreign bodies. The field of examination is so limited, the offending body so small, and the structures in which it lies so delicate that I believe the mathematical method to be superior to the stereoskiagraphic, though the Sweet negatives may be made in such a way that they will also be stereoskiagrams; but I prefer to form my opinion and give my report to the oculist from the calculations made by the Sweet method.

The illustrations accompanying this article are reduced in size so that they may be viewed through an ordinary stereoscope, or with the naked eyes as described.

1443 GLENARM STREET.

UNUSUAL SUCCESS FROM IRIDOTOMY IN EYES PRACTICALLY BLIND FROM IRIDOCYCLITIS AND COMPLICATED CATARACT.*

BY WILLIAM CAMPBELL POSEY, M. D.,
Philadelphia.

A. L. G., female, sixty-two years of age, consulted the writer in April, 1903, upon account of poor sight. She said that she had worn glasses since childhood, having inherited myopia, but that she had had satisfactory vision with her glasses until two years before she came to consultation. At that time both eyes became the seat of a rheumatic iritis, for which she was treated by a colleague. The inflammation was, however, very intense, so that vision was much impaired after the acute symptoms subsided. Upon this account an iridectomy had been performed upon both eyes, but without avail, vision still remaining low.

When examined by the writer, both eyes were practically quiet, though the results of iridocyclitis were very evident, the irides being plastered down to the partially cataractous lenses. The attempts at the previous iridectomies were plainly visible, a small opening in the irides of both eyes about two mm. broad, representing the colobomata. Tension was full in each eye, and the sclera was rigid. Vision equalled 1-70 in the right eye and $\frac{7/2}{70}$ in the left. No view of the fundus was obtainable, on account of the opacity in the lenses. There was a full candle field in both eyes.

The eyes being quiet and the fundi being evidently healthy, the removal of the lenses was advised, though a guarded prognosis as to the possibility of procuring useful vision was rendered, owing to the density of the capsule and the adherence of the iris in both eyes. The consent of the patient to the operation was accordingly obtained, and both lenses were removed, under cocaine, that of the right eye a month later than the left. Healing was prompt, but the small colobomata which remained were so filled in with dense capsular and lenticular debris that vision was but little improved. Repeated needlings with a Hay's knife, at different sittings upon both eyes, were attended with but indifferent success, the pupillary areas still continuing blocked. It was finally determined, therefore, to make an attempt to establish new pupils by iridotomy, though it was realized that on account of the thickness of the irides and the quantity of plastic material which had been thrown out by the previous inflammation the results of the operation might be disappointing.

This procedure having been decided upon, a careful study was made of the irides with a strong magnifying power, in order to ascertain the direction of greatest traction upon these membranes in both eyes, as it seemed desirable that the section of the iris should be made directly at right angles to this axis. As this study indicated that the iris of the right eye should be incised horizontally and that of the left vertically, the corneal incision and the division of the iris tissue were accordingly performed in these meridians. Both irides were incised as freely as possible, in the hope that the gaping of the wound might be so great that in the

* Read before the Ophthalmological Section of the College of Physicians of Philadelphia, April 17, 1906.

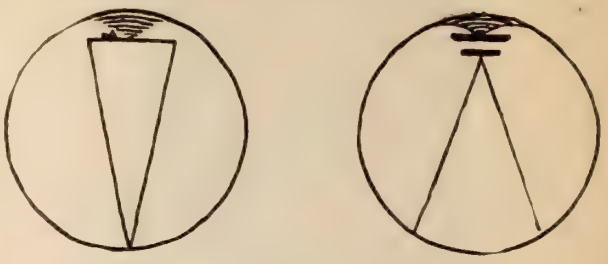
event of much plastic matter being thrown out after the operation, a small aperture might perhaps remain unblocked.

The result of the iridotomies exceeded the most sanguine anticipations, for under the constant application of ice, with atropine and boric lotions, and high doses of sodium salicylate internally, the effects of the operation were rapidly recovered from, and clear pupillary areas remained, so large in extent that three months after the operation corrected vision in each eye equalled 3-60, and at the last testing a few days ago, two years after the operation, O. D. V. with + S. 7 D. ⌒ + C. 1. D. ax. 170° = 5-36; O. S. V. with + S. 5 D. ⌒ + C. 6 D. ax. 10° = 5-36; but + S. 4 D. additional type 1.5 D. was read in each eye.

Both eyes are now and have been entirely free from irritation for a year or more. The fundi are healthy, and there is every reason to suppose that as time elapses vision will continue to improve, as a consequence of the lessening in the amount of astigmatism occasioned by the corneal sections and of further clearing of the media. As shown by the sketch (Fig. 1), in the right eye, the large irregular horizontal pupil stretches almost from the nasal to the temporal limbus of the cornea, and is perfectly clear and free in a central area of at least six mm. in breadth and three in height. The pupil in the left eye, which is almost equally large, is triangular in form, the apex being situated not more than 3 mm. from the lower corneal limbus, while its base extends to the limbus above, and corresponds to an enlargement of the original coloboma, which was made at the time of the removal of the lens.

Iridotomy was first introduced into ophthalmology as early as 1728, by Cheselden, but as the procedure was largely employed for purposes which were later attained much more satisfactorily by iridectomy, it fell into disuse until 1873, when De Wecker adapted it to the treatment of conditions in which iridectomy was either insufficient or entirely valueless. This distinguished operator pointed out that in cases of pupillary occlusion after cataract operation, or after injury, and occasionally in congenital dislocation of the lens, or *in fine* in any condition in which the pupillary area was blocked and the lens absent, by the free incision of the iris fibres, which he performed with his iris scissors, that pupillary areas of large magnitude might be obtained and might be kept permanently free from inflammatory debris, with excellent visual results.

The operation was performed after either one of two methods, which were designated by De Wecker as iritoectomy or iritodialysis respectively. The accompanying diagrams, which were copied for the



A. FIG. 2. B.

writer by his assistant, Dr. Swindells, from *La Manuel d'ophthalmologie,* by De Wecker and Masselon, p. 311, indicate the points of differences between them, and demonstrate the manner in which the iris was incised in both forms of procedure. As may be learned from Fig. 2 A in iritoectomy the cornea and iris are incised near the limbus above, by a keratome, following the withdrawal of which the iris scissors are introduced into the eye in such a way that the iris is included between the blades. Two incisions are then made across the iris with the scissors, the triangle of iris tissue which is freed being removed from the eye by forceps. De Wecker employed this method under most circumstances, but in cases where inflammation had preceded the pupillary occlusion, and there was reason to suppose the formation of dense connective tissue or the presence of much debris, he resorted to iritodialysis. In this procedure (Fig. 2 B) a small incision is made into the cornea, to avoid prolapse of vitreous, and a triangular flap excised from the iris in such a way that the base of the flap is opposite the corneal wound. The resulting flap is then removed from the eye by forceps, De Wecker asserting that this is never difficult, and is accomplished without traction upon the base of the iris, owing to the atrophic condition of that membrane.

In many cases, however, it will be found that a double incision across the iris is not necessary, as the tension upon the tissue is so great that the gap-

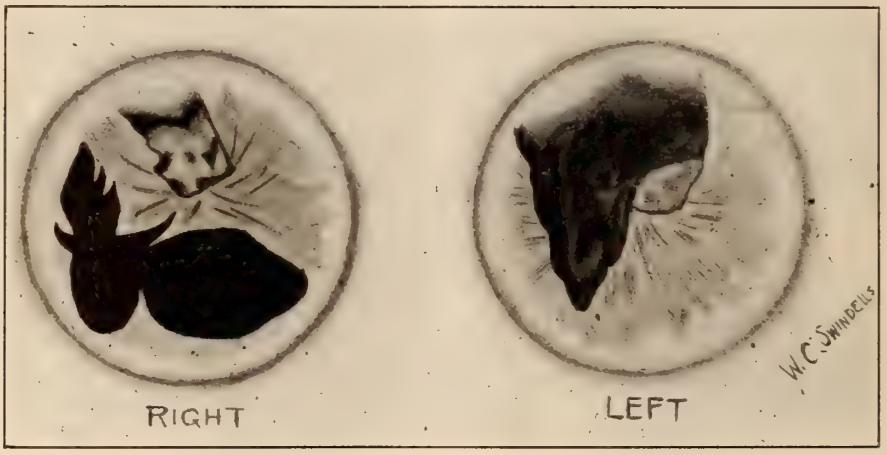


FIG. 1.

ing which follows a simple section gives a sufficiently large pupil. In such cases, the scissors should always be introduced that the iris may be incised at right angles to the direction of greatest traction. Ice compresses should be maintained upon the eye until the reaction occasioned by the traumatism of the operation has subsided, and systematic treatment should be prescribed with a view to absorbing inflammatory products.

1835 CHESTNUT STREET.

RESUME OF RECENT WORK IN CLINICAL PATHOLOGY OF THE BLOOD.

BY T. W. HASTINGS, M. D.,
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Cornell University Medical College.

Aside from methods of diagnosis, the literature concerning the classification and origin of leucocytes and the origin of erythrocytes in health and disease has grown largely through the attention bestowed upon it by Pappenheim (1), Grawitz (2), Löwit (3), and Hirschfeld (4) on the one hand and Türk (5), and Levaditi (6) on the other, the last two writers upholding vigorously the original or slightly modified views of Ehrlich, the former under the leadership of Pappenheim endeavoring to make acceptable a unicyst theory not compatible with clinical observation.

Whatever view we may entertain as a theorist concerning the origin of the white cells, the classification as laid down by Ehrlich and as borne out by blood changes in disease has come to stay, apparently, since this classification offers definite aid in the differential diagnosis of various conditions. Arneth (7), has given us observations quite original in regard to variations in relative percentages of neutrophilic elements with different nuclei, from the mononuclear neutrophiles (or neutrophilic myelocytes) through the neutrophilic transition forms to the neutrophilic cells containing polymorphous nuclei with five, six, or even eight or nine lobes—observations suggesting that such neutrophilic variations may be of help in diagnosis. What Arneth has done is to call attention to the fact that two types of transition cells exist as originally stated by Ehrlich, one possibly an end state of a large mononuclear cell, the other with a neutrophilic granulation representing a developmental stage from the neutrophilic myelocyte, a cell now recognized by Cabot (8) as "the transitional neutrophile" and by Türk (9) as "neutrophiles with lobed nuclei," a cell which places its fortune with the polynuclear neutrophiles (as claimed by Arneth), while the other type without neutrophilic granulation varies with the large mononuclears, statements readily verified by the careful study of blood from the severe acute infections on the one hand and blood from pertussis, smallpox, malaria and typhoid on the other; so that to-day in differential counting we should at least separate the neutrophilic transition forms from the large mononuclears, which vary slightly in adult blood in health and in the more common infectious diseases, classifying the absolutely and relatively scarce nonneutrophilic transition form with the large mononuclears. Wood (10) recommends classifying the polynuclear neutrophiles and these neutrophilic transition of forms in one group. If all the transition forms are classed with the large mononuclears results are not infrequently misleading in respect to an increase of the latter. The nonneutrophilic transition forms constitute so small a percentage of the white cells that it is not necessary to separate them as a class in differential counting.

In disease, and more rarely in health, we must recognize the existence of Türk's (11) "stimulation form" (a large mononuclear cell with abundant densely basic protoplasm), although its occurrence is so scanty that it need not be classed in the leucocytic percentage, but may be noted as are the erythroblasts or may be classed with the large mononuclears. In acute leucæmia and in infants' blood, Türk's lymphoid marrow cells (cells similar to lymphocytes in staining reaction but larger in size and some of them containing azure granules in the protoplasm) are readily distinguished from the other types of mononuclear cells, viz., small lymphocytes, the large mononuclears, and the myelocytes. Türk (12) did not find azure granulation in these cells according to his publications up to 1905, but cells answering to his description for "lymphoid marrow" cells do contain such granules, particularly in acute lymphatic leucæmia. The lymphoid marrow cells without azure granules are to be distinguished with difficulty from large lymphocytes.

The azure granulation is now considered as a characteristic brought out by the modified Romanowsky dyes in certain mononuclear forms and by most hæmatologists considered not a true granulation, since it is not demonstrable in fresh material unfixed and unstained as are the neutrophilic and eosinophilic granulations, but the result of senile changes, may be degenerative, in the proteid constituents of the protoplasm, of both lymphocytes and mononuclears or possibly fragments of nuclear material having an affinity for "Roth aus Methylenblau" in the alkalinized mixed dyes. Certainly some of the smaller cells with azure granules and a single nucleus arise by a breaking off or budding off process of portions of the protoplasm of large mononuclears, these budded portions occurring as large false plates, while the large often hydropic lymphocytes are as a rule without azure granules although the nucleus be clearly degenerating and the protoplasmic rim ragged and these two facts suggest that the lymphocytelike cell with a narrow rim of light blue protoplasm and azure granules is not a true lymphocyte, but a result of changes in the large mononuclear cells.

Many of the large mononuclear cells are without an azure granulation and we may find such cells hydropic and undergoing disintegration without development of a granulation. Possibly there are two types of large mononuclears with and without azure granules, the former from endothelial cells, since such cells in degenerative processes show particles taking an azure dye in the protoplasm; and it has been suggested that these particles are of "cement substance."

The affinity of the chromidien of protozoa for the red or azure dyes suggested at one time that azure granules might not be degenerative, but since the affinity is purely a chemical one and not dependent upon recent viability such a suggestion is chimerical. The red reaction of eosin in normal healthy cells, e. g., erythrocytes and other tissue cells, and also

to hyaline material exemplifies this oneness of chemical staining affinity for a certain dye by a recently functionating or a viable tissue and a dead degenerated tissue.

The nature, origin, and significance of the azure granulation are, with the origin of the large mononuclears unknown outside of theory. Most if not all of the mononuclear cells with azure granulations are to be classed, however, as large mononuclears.

Although some confusion in cells differentiation has resulted from the use of the newer staining methods they are to be recommended since they stain all the formed elements, erythrocytes and leucocytes, and plates, in normal and in pathologic blood, differentiate well the pathologic changes in red cells and stain perfectly and characteristically the blood parasites. Whether one uses Romanowsky's, Nocht's, Wright's, Leishman's, or Giemsa's methods for preparing a stain matters not since all such preparations are azure dyes, with similar staining properties.

BLOOD PLATES.

Disregarding the contributions to the origin of blood plates by Hayem (13), Arnold (14), Deetjen (15), none of which agree, it is of interest to note that Pratt (16) has devised a simple method for counting plates, based on Deetjen's discovery that when blood is drawn through a 2 per cent. solution of sodium metaphosphate the plates are preserved isolated. Pratt's method consists of making preparations of fresh blood drawn through sodium metaphosphate solution, estimating the number of plates to the number of erythrocytes by means of an Ehrlich's eye piece, counting the erythrocytes and thus by calculation obtaining roughly the total number of plates per c.mm. Pratt's observations are as yet incomplete, but from his cases and our own it seems that the estimation of plates is to be of service in separating the so called primary anæmias, chlorosis and progressive pernicious anæmia, from the puzzling secondary pernicious and secondary chlorotic anæmias, the primary conditions showing a marked scarcity of plates, the secondary conditions showing an increase of plates. Peculiarly enough, lymphatic leucæmia (chronic) shows a marked reduction in plates, myelogenic leucæmia (chronic) and increase. Intercurrent infections in these primary anæmic and lymphatic leucæmic conditions cause an increase in plates.

Blood in Acute General Tuberculosis. In 1895 Warthin (17) reported a case of miliary tuberculosis, in which the blood showed a progressive leucopenia with a progressive polynucleosis, during the course of the infection and we have been unable after a careful search of literature to find any other reference to the subject than that in textbooks, and these are indefinite and incomplete. Polynucleosis with no leucocytosis may be found in single or few blood counts in fulminating cases of peritoneal infection, in overwhelming pneumonias and similar severe infections, in conditions in which the leucocytogenetic mechanism does not respond—particularly in uncomplicated conditions producing a leucopenia and lymphocytosis, but with secondary infections a polynucleosis with no leucocytosis—but in no other disease or condition of any duration does there occur the combination of progressive leucopenia with a progressive polynucleosis up to 95 per cent. to 97 per cent. than acute general tuberculosis, excepting possibly in the involution psychoses as noted by Adolf Meyer (18). During the last few years we have seen seven such tuberculous cases with autopsies.

Observations upon the alkalinity of the blood have led to speculation in respect to its value in diagnosis in such conditions as leucæmia and diabetes mellitus, but the conditions in which these variations are at all constant as in the two diseases mentioned furnish clinical signs and symptoms and changes in blood and urine which may be detected by simpler well established methods, more satisfactory than those suggested for alkalinity determinations. Henri Labbe (19) has called attention to the fact that the alkalinity of the blood is due to two classes of chemical bodies, the mineral salts as the carbonates and monacid phosphates, and the alkaloidal bases as guanidin and creatinin, and suggested that these two classes should be determined separately, and he has devised simple methods for this, if investigations of any value are to be carried out in regard to alkalinity. The method of obtaining several c. c. of blood for such a determination would for diabetes allow of withdrawal of sufficient blood to determine the sugar content of the same, a determination which would be of much greater value than the alkalinity, since hyperglycæmia is a constant accompaniment of diabetes mellitus, and then unfortunately not in the earlier stages of the condition.

For the presence of cholin in the blood one is referred to a consideration of the cerebrospinal fluid.

Studies in immunity although they have greatly advanced knowledge and science have produced little of use to the clinical laboratory. For a time suggestions of the possibility of diagnosis through production and employment of sera immunized to carcinoma and sarcoma gave some hope of a method of earlier diagnosis for hidden malignant growths, but investigations in this line have proven failures. Whether or not the late work on agglutinins and agglutination will be so elaborated as to be made use of remains to be seen. No one to-day can assail the positive value of a Widal reaction against typhoid and possibly the paratyphoid infection, certain forms of dysentery, and Malta fever, but infections such as with tubercle bacilli and with pneumococci are not by any means within sight of diagnosis by means of agglutinins in a patient's serum and the methods of physical diagnosis, tuberculin injections, and bacteriology prevail. Wadsworth (20) and Hiss (21) in this country have had some degree of success with agglutination tests with the pneumococcus, yet their methods are not readily applicable for clinical work.

The methods of carrying out the serum reactions for typhoid have been much studied during the last three years and may be divided, first, into the microscopic methods which are familiar and in general use to-day and the macroscopic methods and the latter should be again subdivided into the formaldehyde methods advocated by Ruediger (22) in this country and the carbolic-glycerin method of Ficker (23). The method of the bacteriologists of making fresh suspensions of agar cultures in salt solution or dis-

tilled water with or without the addition of formaldehyde are too laborious when quicker "emulsion" methods are at hand. Ruediger's method of preparing a permanent suspension of bacilli in salt solution and formaldehyde or both and formaldehyde is not to be recommended, for formaldehyde in the faintest acid solution will precipitate most readily albumin bodies, particularly serum albumin and serum globulin of blood serum, a fact pointed out by Introna (24) and recommended by him as a test for albumin in the urine, and formalin upon standing by combination with oxygen gives rise to sufficient formic acid to produce an acid medium.

Ficker's suspension, the composition of which Ficker has not made known, but which is simulated closely by Borden's (25) emulsion of bacilli in carbolic acid, glycerin and 0.8 per cent. salt (sodium chloride) solution, eliminates the false reactions from precipitation of albumin possible with Ruediger's method. But even with such an emulsion the serum must be free from hæmoglobin since the globin in hæmaglobin will precipitate in neutral (or alkaline) salt solution. To eliminate this one source of error the serum used must be free from hemaglobin and a control emulsion of carbolic acid and glycerin and 0.8 per cent. salt solution without bacteria should be prepared and mixed with a portion of the diluted serum. The advantages of this macroscopic method are three: 1. Positive reactions are found early with dilutions of 0.01 serum and at this dilution are diagnostic. 2. Does not require repeated observations of the preparation, for a positive reaction may occur within two or three hours, as a rule occurs within six hours, rarely not until eighteen to twenty hours have passed, and if allowed to stand for forty-eight hours even, agglutination and precipitation do not take place with negative sera as a rule. 3. The emulsion for typhoid and paratyphoid and allied bacteria will keep well without precipitation for months and are always ready for use and one does not handle live cultures. The bacilli live for several days in the fresh emulsion, but after one week no growth can be obtained from the emulsion.

The fact that the agglutinability of the emulsion increases after a few weeks suggests an extraction of nucleoproteids from the bodies of the dead bacilli and a reaction similar to a precipitin reaction and the possibility of preparing a nucleoproteid solution for agglutination after filtration through a Chamberland filter.

Wright's (26) method of observing the opsonic power of the leucocytes of tuberculous patients for tubercle bacilli and the methods of estimating the bactericidal power of the serum in tuberculous and typhoidal infections, both result in interesting observations which have certainly not yet proved adequate when compared to methods in use.

Wright has undoubtedly come upon another phase of immunity and has applied his theory and expanded his investigations to infections due to various bacteria with apparent success. The value of obversations in this line will lie not so much in diagnosis as in the development of a method by which the response to Wright's methods of treatment, which is essentially an active immunization, and progress in an infectious condition may be intelligently followed.

Of more practical value have been the observations of Haldane (27) and Lorraine Smith upon the oxygen combining capacity of the blood and the total amount of blood in the body, for the former has furnished a basis other than arbitrary comparison of colors for hæmoglobinometers, and the latter has furnished definite knowledge in regard to such conditions as chlorosis and pernicious anæmia, and the method employed is one available for exact observation in investigating disease, although of little use in diagnosis. Their method of determining the oxygen combining capacity of the blood by setting free from a given amount of blood the oxygen or carbon monoxide by means of potassium ferricyanide in presence of ammonia and reading the amount of gas collected in a eudiometer tube furnishes a simple method for testing and standardizing hæmoglobinometers and for basing the standard colors upon a definite physiological fact, viz., the normal oxygen combining power of 100 c.c. of blood which is 19.5 to 20.5 c.c. of oxygen or carbon monoxide. Thus 100 per cent hæmoglobin means something more definite than color and something readily terminable.

Sahli's (28) instrument, providing it be from Büchi and not one of the many manufactured for the market, is as satisfactory as any hæmoglobinometer in use to-day, since its principle of converting the diluted blood into acid hæmatin renders it reliable for cyanotic blood, the deepened color of which interferes with accurate determinations with the instruments employing colored glass for a standard as do von Fleischl's, Miescher's, and Dare's. No other instrument or method is so accurate as Miescher's and no instrument so convenient for general work as Dare's.

Breyer (29) and Grützner, after discussing the methods of hæmoglobinometry in use, described a new instrument—the *Keilhämometer*—differing markedly from the well known instruments and suggesting some of the colorimeters, as Du Bosque's, in principle. While the apparatus gives good results and is readily used, it will not replace the satisfactory methods in common use. The reader is referred to the excellent article of these authors.

Little is to be said for the new instruments and methods for counting blood cells. Bürker's (30) instrument is based upon the well known methods and his apparatus, which consists of a divided counting chamber which is covered with a glass slip extending not quite to the edges of the rule center piece, so that one may fill the counting chamber by capillarity has nothing to recommend it and nothing against it. Türk before Bürker had suggested this method of filling the ordinary counting chamber and for some months "by capillarity" was one subject of the controversy between Türk and Pappenheim. Bürker's counting chamber is ruled on each of the two central, depressed, rounded end portions which are one tenth of a millimeter below the surface of the lateral oblongs, and each ruling covers an area of four square millimeters, so that two countable areas may be prepared at the same time. The ruling divides this area of four square millimetres into small squares of $1-\frac{1}{4000}$ of a c.mm. capacity in which are counted the red cells and large squares of $\frac{1}{250}$ c.mm. capacity in which are counted the white cells. For the red cell determina-

tion the blood is diluted 1 to 200, with Hayem's solution and eighty small squares are counted, when the total red cells counted in eighty squares multiplied by .01 expressed in millions will give the number of red cells per c.mm. To obtain the white cells per c.mm. the blood is diluted 1 to 10, the leucocytes in one hundred large squares are counted and the total number in one hundred squares multiplied by 0.025 expressed in thousands, which gives the number of white cells per c.mm. For details and for the advan-

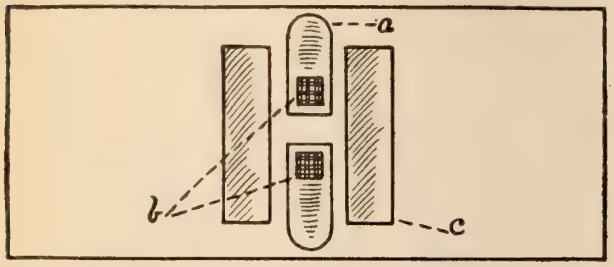

FIG. 1.—Diagram of Bürker's counting chamber; a, central depressed, rounded portion; b, ruled areas, 4 sq. mm.; c, lateral oblongs, 0.1 mm. above central portions.

tages for this method claimed by Bürker one is referred to Bürker's article.

While there is nothing new in the methods of making cultures from the blood it is interesting to note that the increased frequency of making such examinations has resulted in reports of several cases of recovery from anthrax and gonorrhœal septicæmia.

A résumé of the pathology of the blood is incomplete without reference to reports upon parasitic invasion particularly protozoan of the blood.

The discoveries of two parasites have not been

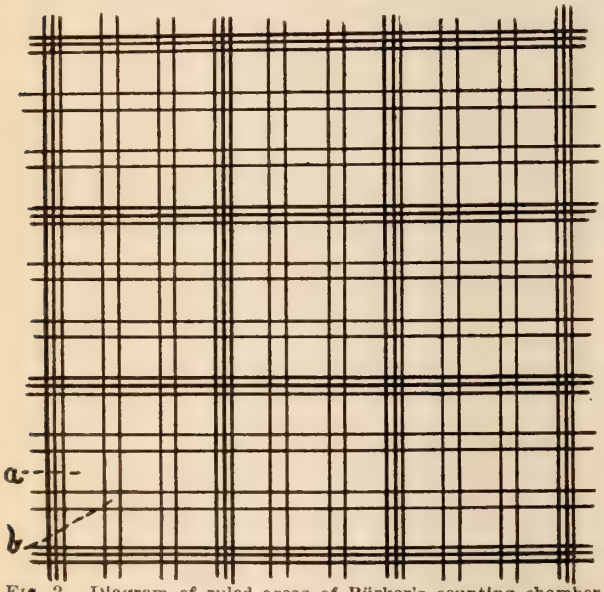

FIG. 2.—Diagram of ruled areas of Bürker's counting chamber; a, large square; b, small square, mag. x 25.

borne out by more careful work than that exhibited in the first articles, viz., of the *Piroplasma hominis* of Wilson (31) and Chowning in spotted fever of the Rocky Mountains and of the yellow fever parasites of Parker (32), Beyer, and Pothier and more recently of yellow fever bodies of Pothier (33), Hume, Watson, and Couret in New Orleans. Unfortunately both of these false observations are accredited to America.

The Trypanosomes, the Leishman-Donovan bodies, and the *Spirochæta pallida* (or *Spironema*)[1] of Schaudinn (34), whatever their casual relation to syphilis, have come to stay, for these are parasites to be found by any one looking for them properly.

For practical methods and for observations of practical value for diagnosis from the blood we must still give thanks to the clinicians, the microscopists, the cytologists, and the bacteriologists.

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[1] Since the name spironema has been used by Klebs in 1893 (35), Schaudinn has proposed the type name *Treponema* for the organism found in the lesion of Syphilis. Stiles (36) suggested the name *Microspironema pallidum*, since *spironema* had been used by Meek in 1864.

STERNOMASTOID BREATHING.*

A Study of the Dying State.

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For many years past I have given attention to the symptoms and conditions relating to the dying state. The physicians whose practice is chiefly confined to hospitals and similar institutions doubtless have opportunities for observing the dying, opportunities which are not usually shared by physicians exclusively in private practice. In the latter instance it is rare for the practitioner to be continuously present at the bedside of the dying patient, while in the former it is the exception for him to be absent. My records of deathbed studies comprise about fifteen hundred personally observed cases.

The sentimental side of the subject has for every one a common interest. It has always been inculcated that a religious life tends to smooth the pillow in the hour of death. I make no issue with religious thought and teaching. No one surely could contend that the consolations of religion do not greatly mitigate through life one's view of the final end, or that they do not serve to allay the apprehensions that are prone to arise from time to time in timid persons who are accustomed to look into the future with vague feelings of doubt and fear. While this assurance fortifies the mind of the believer during health, it cannot be affirmed that it totally brings him into a separate class from the unbeliever at the crucial moment, so far as it concerns the mortal fear and dread of death. Death being a natural process, "the wind is tempered," as it were, "to the shorn lamb." There seems to come upon the sensibilities of persons generally approaching a normal death, irrespective of social or religious conditions, a sort of benumbing or becalming influence, which settles, as it does in a large majority of cases, into a peaceful sleep, deepening as the end comes near, into a state of profound unconsciousness. It has been aptly said that we come into this life in a stupor and in a stupor we depart. In man's physical death, the comparison of the sons of men to beasts by the preacher in Ecclesiastes—"As the one dieth, so dieth the other"—is calculated to wound one's pride, yet it is not so far from the truth after all. Respecting the modes of death and the sensations of the dying, I have seen two cases in whom an extreme terror wrought the mind of the sufferer into painful evidences of fear, one in whom an ecstasy of joy seemed to translate the spirit into a heavenly bliss, and one in whom remorse was plainly dominant. In the greatest number of the dying, however, the closing lines of Bryant's *Thanatopsis* fitly describes the scene in which the sleeper is "Like one who wraps the drapery of his couch about him and lies down to pleasant dreams." At least ninety per cent. of my cases died in an unconscious state.

Early in these studies I was attracted by a phenomenon that is a conspicuous one, which consists of an up and down rocking movement of the head due to sternomastoid breathing. While this sign is so common that every one probably has noticed it repeatedly in the dying, no reference to it can be found in textbooks or in descriptive accounts of the numerous symptoms attending the dying state.[1] After grave symptoms have set in, and generally not very long before death supervenes, it will be seen that the head of the patient moves up and down in a rocking fashion, synchronously with the breathing; or rather it may be better described as a forcible raising of the head and chin, giving a fanciful beckoning motion to the head. This action, a veritable death's call, is brought about by the strong contraction of the two sternocleidomastoid muscles, in an effort to facilitate breathing. You will remember that the sternocleidomastoid groups are accessory muscles of breathing, and are brought into activity whenever there is unusual stress in the respiratory function. This is not necessarily a conscious act; in fact, it seems to me that the movement is less restrained when entirely freed from the control of the will, as in the unconscious state. It may be stated in passing that sternomastoid breathing may be seen in dying animals as it is in humans.

For purposes of study and observation I have been in the habit of dividing the dying state into three stages. This is but an arbitrary division, for Nature in this, as in other manifestations, seldom makes sharp boundaries by rigid demarcation. The division line of the first two stages is not only ill defined, but it is not marked by any particular kind or set of symptoms. We recognize the presence of the second stage simply when the exhaustive symptoms of the first stage have deepened into a more intense degree of gravity, together with the advent of new symptoms of like import. The onset of the third stage is on the contrary easily recognized. It begins whenever sternomastoid breathing sets in, irrespective of the presence or absence of other symptoms. In fact, it will be noted that this sign is always accompanied with indications of the gravest character. Every other symptom of the dying state may at times improve or even pass off, but after sternomastoid breathing has once begun the patient never revives, passing at varying rates into the decline surely and progressively to the end. One may see whimsically in it the portal to the valley of the shadow of death, that once entered no one ever turns back. Truly can it be said: "And there is no healing when a man cometh to (this) end, and none was ever known that gave release from Hades."

By the aid of a number of my hospital medical friends, I have endeavored recently to ascertain the average duration of sternomastoid breathing, or the last stage of dying, a point hitherto unsettled. The

* Read before the Bucks County (Pa.) Medical Society, May 9, 1906.

[1] Other signs of the dying state, not that all occur in any individual case. Some are antagonistic, while others are local symptoms of a more general condition mentioned:

Extreme general exhaustion (adynamia); general muscular relaxation (collapse); cold perspiration, local or general; cold blue extremities; mottled skin; purpuric extravasation, local or general; delirium; coma (coma vigil); insomnia; characteristic odor; convulsive twitching (subsultus tendinum); convulsive seizures; involuntary discharges, including semen in men; general spasticity of muscles; legs rigid; motor reflexes abolished; picking at bed clothes (carphologia); subnormal temperature, elevated temperature (calormordox); cachexia; pallor or flushing; color of face brown, black, livid, or lead color; skin of forehead rough, distended, and parched; collapsed temples, and in infants sunken anterior fontenelle; sharp nose; Hippocratic facies; loss of facial expression; cyanosed gums, lips and skin; tongue dry, brown and fissured; ears cold, contracted, and lobes turned out; grinding of teeth; tongue and lips tremulous; falling lower jaw; relaxed lips; masticatory efforts; inability to swallow; hollow eyed; failing sight; immobile eye; glassy eye; eyeballs elevated; eyelids only partly closed in sleep; dilated pupils; strabismus; conjugate turning of eyeballs; finger nails discolored; finger tips shriveled; feeble heart sounds; feeble or running pulse; dyspnœa; shallow breathing; spasmodic breathing; rapid or slow breathing; Cheyne-Stokes breathing; weak voice; mumbling speech; death rattle.

results of the inquiry are interesting; the records cover one hundred cases. There was a wide range of latitude between the extremes; the longest time noted was seven hours, and the shortest time one minute. Between these extremes considerable variation was shown, although the largest number fell into the period between ten and forty-five minutes. The median length of time that it lasted before death was *twenty minutes*. Formerly, I had the impression that this important sign was never absent in the dying, being present even in cases of sudden death, appearing in the one or two final gasps. In recent years this belief, however, had to be modified, for I am assured by a longer experience that there is a small proportion (from five to ten per cent.) in which it may not be detected. Curiously enough, in one or two instances I have known it to cease for a few moments only to be promptly resumed. While it is a conspicuous feature which is commonly unmistakable, which may be recognized even by the most casual observer, in some cases it may be overlooked because the nurse or watcher at the bed side may not understand just what she is expected to look for, and it may thus escape her notice. Sometimes it may possibly be absent owing to the resistance given to it by the restrained position of the patient's head, or by the unusual way the head is pillowed.

Aside from its scientific value as an observed fact in disease the question may be asked concerning its practical bearing.

We may say, then, of sternomastoid breathing in this connection that it is a reliable sign of approaching death, and one which may serve the purpose of the physician in forming an estimate of the length of time the patient may live, without depending on signs of less value; its onset indicates that death is probably very near at hand, generally within half an hour; it is a definite symptom on which the physician may predicate his instructions or advice; it is a sign to mark the time when the family may be summoned to the bed side, or one which may regulate the other details of the death chamber. These and other practical purposes which it may serve will readily suggest themselves to the thoughtful practitioner.

A CONTRIBUTION TO THE STUDY OF THE SPANÆMIC HEART.*

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The spanæmic or anæmic heart finds scant mention in the literature of medicine. Even the masterly works of Babcock, Gibson, and other specialists accord to it no place such as it intrinsically deserves. It seems as though the spanæmic heart were a thing so well understood, whose essentials had been so fully dilated upon, so firmly fixed, that to mention it were superfluous; but still the facts are different.

Colbeck, in his recent work, agrees with most modern clinicians in believing that mitral regurgitation is due commonly to relative or muscular incompetency of the valves, brought about by dilatation of the left ventricle and gives among the causes muscular enfeeblement consequent on anæmia. Anders, Osler, and other recent writers mention dilatation of the heart in chlorosis, but after a most exhaustive search of the literature, embracing textbooks on medicine, physical diagnosis, special works, and articles on the heart and the various anæmias, I am unable to find the spanæmic heart separately dealt with in a manner deserving of its importance. Many authors ignore the subject entirely; some speak vaguely of it, but leave much to the imagination as to its symptomatology, diagnosis, treatment, and prognosis.

Speaking with many experienced clinicians about it, I have been more and more impressed with the varying answers received, and the utter lack of proper appreciation of the seriousness of this most interesting and most important clinical entity. Influenced by the meagreness of definite literature on the subject and by the lack of definite conceptions regarding this condition of the heart, I became deeply interested in it some years ago. Enough time has now elapsed to make the observations sufficiently complete to embrace a study of the outcome of the graver cases, and to permit of some basis other than theory for the prognosis.

As a starting point in considering a subject of this kind it becomes necessary to define one's conception of the condition.

The spanæmic heart is one which, by reason of deficient nutrition of its muscle, is dilated or dilatable. I believe it to be of three varieties: 1st. The heart, which is insufficiently nourished on account of general anæmia. 2nd. The heart insufficiently nourished indirectly because of more or less persistent vasomotor failure; the blood being normal. 3rd. The insufficiently nourished heart from a combination of blood disease and vasomotor instability.

At this point it must be remembered that the hearts which receive a deficient blood supply, owing to permanent local conditions, such as coronary sclerosis, or atheroma, or malformations of the aorta about the coronary opening, etc., are, according to our late views, classified most often as senile hearts, and are not to be embraced in the subject of this paper.

In considering the first variety of spanæmic heart, we must realize that while anæmia in its various forms usually tends to weaken the heart muscle, and to bring about, directly or indirectly, irregular action of that organ, still anæmia by no means always gives rise to clinical evidences of cardiac weakness and dilatation. Much will depend upon the grade of blood changes, the method of treatment, and upon the amount of exercise taken. Those cases of anæmia in which the spanæmic heart is best studied are the ones in which the blood changes are found to be of comparatively moderate degree, and in which, for this reason, the patients find it possible to take considerable exercise, thereby calling for cardiac work out of proportion to what should be done.

The severer grades of anæmia in which the patient takes to bed and in which convalescence, if it occurs, is carefully watched, do not, in my experience, run the circulatory danger and show

* Read before the West Side Clinical Society of New York, April 12, 1906.

the later clinical evidences of the spanæmic heart with any great degree of frequency.

The patient with a chronic anæmia, with moderate oligocethæmia, and with a corresponding oligochromæmia, or the patient with a typical chlorosis with comparatively high erythrocyte count but moderately low hæmoglobin, say fifty per cent., is particularly liable to develop the full clinical picture of the spanæmic heart. This occurs by reason of the patient being fully able to do work, and being prone always to overexert. In the majority of these cases of anæmia the heart will be found rapid and the pulse of varying tension. There is a dyspnœa, due to the small oxygen carrying power of the blood, but there is also a complicating dyspnœa from the weak heart.

We have a heart muscle partaking in the lack of nutrition of the general system and consequently weakened, which is yet called upon to pump the blood more rapidly than normal to satisfy the cry for more oxygen to the system. Continued acceleration of the pulse soon develops an exhaustion of the limited heart power, and the general arterial or aortic supply becoming inadequate, the individual is weakened in a manner perceptible to all. While the spanæmia of the heart has not yet led to dilatation, it does do so in short order, if the anæmia is not conquered, or if measures are not taken to conserve the cardiac power. Observation has led me to the firm conviction that in order to avoid some degree of dilatation, cardiac tonics are strongly called for in many ambulant cases of anæmia.

How often, indeed, we see a case of anæmia cured, yet still detect the varying dyspnœa on exertion, the rapid pulse, and the general weakness. We discover no kidney changes, no lung disease, and frequently the diagnosis of neurasthenia is made. But if we examine the heart carefully we find the apex beat more diffuse than normal, also sharper. It has not the short sound of great dilatation, but percussion and auscultation locate the apex of the heart slightly to the left of the normal, perhaps in the nipple line, perhaps not quite there, but outside where it should be. The right heart is not always measurably affected, owing to the difficulty of mapping small changes of its area, but the position of the apex, the sounds, and the rapidity, tell of dilatation of the organ. And all this we discover after our patient has been cured of the anæmia.

While curing that affection we forgot, perhaps, that the weakened and poorly nourished heart was the danger point. Its rapidity was regarded as due to anæmia alone, and the "you'll be all right when the anæmia is cured" has been a false promise. Now we are face to face with the reminder that the spanæmic heart, which is anæmic no longer, has been overworked when it should have been favored.

This is the usual form, and by no means a severe picture. I have not infrequently seen slow dilatation of much graver character follow too much freedom in exercise during or following anæmias, and the pity of it is that it is all so preventable.

The so called neurasthenia following anæmia masks many overlooked spanæmic hearts. If one doubts this, it will be easy to demonstrate the truth by paying attention to the rapidly acting organ, slowing and toning it by special therapy. The blood will thus be forced properly through the capillaries, nourishing the nerve centres vigorously, and the neurasthenia often quickly disappears. If, on the other hand, one attempts to benefit the irritable nervous system by ordinary treatment, utterly ignoring the weakened heart, as is so often done, results will, according to my experience, be anything but brilliant.

In the textbooks on medicine we find under "Chlorosis" that palpitation of the heart and throbbing of the arteries are frequently mentioned. The similarity of certain other conditions of this state to those of organic disease is likewise commented on, basic and even apical murmurs being spoken of freely in comparatively recent works, and some authorities mention that the heart is usually somewhat dilated. But few consider the actual cardiac condition with the seriousness that it deserves. It is my opinion that clinicians are but beginning to realize that this is a condition worthy of more careful notice with a view to its possible ultimate effects.

The first form of spanæmic heart under consideration in this paper is well illustrated by the two following examples, taken from my private practice and selected from seven cases of this variety which I have studied:

Case I.—Miss Bertha M., seventeen years of age, came to me four years ago with marked breathlessness and palpitation. She also complained of headaches and constipation. She was very evidently suffering from chlorosis, the blood showing erythrocytes 4,200,000, hæmoglobin 40 per cent., leucocytes 8,500. Examination showed the heart to be strong in its action, apex in normal position, about three quarters of an inch within the nipple line in the fifth space, and the pulse large, soft, and irregular. There was a marked aortic systolic murmur, and also a pulmonic systolic whiff occasionally. Both of these were attributed to anæmia. The venous hum was also quite pronounced, and there was the characteristic slight ankle œdema of this disease. Lungs and kidneys were normal.

The patient was placed under treatment, and was also repeatedly cautioned against the danger of too much exercise. In six weeks the pulmonic whiff had gone and the systolic aortic murmur was heard only occasionally. The general condition was much improved, and the œdema was scarcely demonstrable. The treatment was pursued and the same caution given. She steadily improved, and six weeks later was well.

Two weeks after she came back with marked dyspnœa and general weakness, and with the statement that she had walked a mile to business every morning for a week because she felt so well. She had walked particularly fast that day and had been seized with faintness. Examination of the heart showed the apex beat to be very feeble and about half an inch outside the nipple line. The first sound was the characteristic one of marked dilatation. No murmurs could be differentiated, the heart beating at 136.

She was ordered to bed and a vigorous line of cardiac treatment instituted. When the pulse slowed no murmurs were found save a systolic whiff at the apex, carried to the axilla. The blood was found to be normal. After a protracted course of treatment the dilatation was largely overcome, and the systolic mitral whiff disappeared. It had evidently been due to leakage from poor valvular approximation, dependent upon tension

in the chordæ tendineæ from ventricular dilatation, or to the stretching of the auriculoventricular ostium.

Although this girl recovered, and has now a heart free from murmurs and a fairly strong systole, still she is decidedly weaker in her circulation than she should be, and she may ultimately see a cardiac breakdown. The dilatation was doubtless due to the vigorous exercise before the myocardium had had a chance to recover from its poorly nourished condition. This case taught me a lesson of great value—to treat the heart itself during convalescence, a thing very rarely done.

CASE II.—The second case illustrative of this cardiac condition also occurred in my practice in a man of thirty-eight, who had made a poor recovery from an attack of tonsillitis. After a week's illness he returned to important business affairs against my advice. At the time of doing so his pulse was 84 while in the sitting position, and his heart free from murmurs or signs of dilatation.

Three weeks later he came to my office with a pulse of 130, with a marked pallor, and a great degree of weakness. His blood revealed an ordinary secondary anæmia, but no leucocytosis. The possibility of a mistake in diagnosis as to tonsillitis was not to be entertained, as repeated bacteriological examinations had been made. His anæmia had been caused as much by an utter lack of appetite and inattention to his food as by his original disease. His heart was dilated considerably, the apex being outside the nipple, and he had a systolic pulmonic and aortic murmur. Under treatment the murmurs, which were evidently anæmic, disappeared. His apex beat is now well inside the nipple line.

In this case the spanæmic heart manifested itself with the rapidly developing anæmia after an illness, and was aided in its progress by the patient's own neglect.

Coming after an attack of tonsillitis, one at first might easily have mistaken this condition for one of endocarditis; but the state of the blood and the location of the murmurs pointed to anæmia as the cause; and the result of treatment, the present absence of murmurs and dilatation, prove the case to have been one of spanæmic heart.

In the second form here classified, general anæmia is not essential in my opinion, but the primary cause is a general loss of vascular tone. At first thought it seems difficult to understand how a loss of vascular tone can bring about the clinical phenomenon of the spanæmic heart, but when we remember that an advanced debility of the vascular system causes a rapid, irregular heart, and a lowered aortic tension, we may understand that the blood supply to the myocardium through the coronary arteries is necessarily greatly interfered with. Both the coronary tension and the capillary flow through the heart must be greatly changed if the tension in the aorta is such as to render a proper and sustained filling of the coronaries an impossibility.

The results must be an under supply to the heart, a degree of cardiac ischæmia. If the condition of loss of vascular tone persists we have a poorly nourished heart working rapidly and subject to great variations of blood supply. Undoubtedly nerve influences are brought to bear in the changed rhythm, and sooner or later the overworked and underfed ventricles develop a slowly ingravescent asystole, with residual accumulation and sequential dilatation. In this case hæmic murmurs in the aortic and pulmonic areas are not found, but mitral regurgitation develops just as in the first form. I have seen but two cases of this variety, one in a man and one in a girl, and have watched them for a period of years. The condition is a difficult one to cure, as nervous influences are at work, and the factors producing the loss of vascular tone are more or less uncontrollable.

CASE III.—The first case was that of a young man who came to me four years ago for failing health. He was organically sound, and although pale, his blood was normal. His heart was not enlarged, but was one of the palpitating variety, with that peculiar metallic booming first sound so frequently found in cases of continued sexual excesses. His pulse was rapid and showed the characteristic loss of tension. He continued to lead a life of the same sort despite my advice, and one year later had a feeble apical impulse half an inch outside the nipple, and a weak, low tensioned pulse of 126. A systolic apical whiff could be heard laterally and posteriorly. His blood remained normal.

Vigorous treatment aimed at his nervous system and his habits accomplished nothing, but he began immediately to improve when cardiac tonics and arterial constrictors had been given for a short while. Now he is in fair condition; but his heart, while acting well, is, without medication, distinctly dilatable. This patient never drank, his kidneys were in good condition, but his vascular control was well nigh paralyzed.

CASE IV.—The second case was that of a young lady of twenty-two, who was operated on for ovarian trouble. She made a good recovery, and three months later was obliged to again submit to a laparotomy, this time for appendicitis. On the sixteenth day, when she had barely recovered from the operation, she was discharged, and was the next week forced to go back to stenographic work in order to hold her position. At this time the heart and blood were normal. She was in an entirely exhausted condition, however, and her arterial tension was low.

Three months later she was obliged to give up her work, owing to nervous outbreaks and nervous irritability. Pulse was 120, tension low, and the heart a little dilated. She improved under treatment, and removed to Massachusetts, where she again broke down and was under the care of a physician, who treated her only for her nervousness. She returned to New York shortly after, and I found the apex beat feeble and outside the nipple line. Her pulse was very soft and rapid, but her blood was normal.

Under the prolonged use of cardiac tonics and drugs aimed to control the vascular weakness this patient recovered remarkably. Now she has a fairly strong systole at about 80, and an apex in nearly its normal position. She has been without treatment for six months, and shows no tendency to relapse.

The third variety of spanæmic heart I have witnessed after surgical operations. In the cases which I have seen, two in number, the hearts were normal before operation, but later on developed dilatation. In these cases the patients were somewhat anæmic before, but were more so the following weeks. The vascular system in each was severely tested during the operation, the pulse rate being rapid and the tension soft for days after the ordeal. These two cases were the only spanæmic hearts observed by me in a study of the results of over 100 serious surgical operations, during which the pulse was rapid and shock more or less marked. Unquestionably, to my mind, the anæmia preexisting in these two cases was accentuated by the loss of blood during operation and of hæmoglobin from the ether or

chloroform—the latter a result of the administration of these anæsthetics which I have often been able to verify. The loss of vascular tone and consequent diminished aortic pressure also contributed largely to the impoverishment of the myocardium.

It is not to be inferred that every anæmic patient, after a long and serious operation with more or less vascular exhaustion, will develop the spanæmic heart; for such is certainly not the case. Recovery of the normal blood state and recovery of the vascular tone are usually quite rapid as we all know; and only in two per cent. of my observations did these conditions lead to a dilated heart. Such a possibility, however, should be before every surgeon and every physician, and special caution observed in all cases showing a rapid, low tensioned pulse and anæmia during convalescence. The spanæmic heart of surgical origin, as we might call it, deserves careful consideration; in fact, it demands notice from us all.

Case V.—The first case was Mrs. M. R., aged twenty-nine, mother of four children, always quite pale and anæmic. I was called to see her at the seventh month of her fifth pregnancy, and found her suffering from anæmia and uterine hæmorrhage. She had had several slight hæmorrhages during her pregnancy, but had thought little of them till this one.

I found placenta prævia centralis. The heart was normal, pulse 90, and kidneys and lungs sound. During operation she lost considerable blood and was profoundly shocked. She rallied after intravenous infusion, but ten days afterwards showed a soft pulse at 120, and erythrocytes 3,000,000, hæmoglobin forty per cent., leucocytes 10,000. Her convalescence was slow, and despite vigorous heart and blood treatment four weeks later she showed considerable dilatation of the heart, with pulmonic and mitral systolic murmurs.

To-day, two years afterwards, her heart is strong, apex well inside the nipple line and visible, pulse of good tension and about 80. Her blood count has been normal for ten months. At present there are no cardiac murmurs.

I am convinced that protracted and vigorous treatment alone saved this woman from a permanently dilated heart. Her convalescence was very carefully watched; but had she exercised or strained the already dilated and weak organ, an incurable condition doubtless would have developed.

Case VI.—The other case of this type was in a woman of thirty-two, whose heart, lungs, and kidneys were healthy, and whom I curetted for repeated and frequent uterine hæmorrhage. The operation checked the bleeding for only a few days, when she began again to flow steadily. She was now decidedly anæmic, her pulse running at 110. Her heart, however, was not enlarged.

The hæmorrhage persisting, the late Dr. William R. Pryor removed the uterus by the vaginal route. The cause of the hæmorrhage proved to be an aneurysm of the uterine artery. Following the operation the secondary anæmia was pronounced. Low tension and a rapid heart were constant for several months, and dilatation of moderate degree supervened. At no time was I able to detect any murmur save a systolic pulmonic, but the apex beat was very feeble and diffuse, and the first sound very short and sharp, and percussion revealed distinct dilatation. To-day the apex beat is strong and well within the nipple line, and the first sound is good despite absence of treatment for one year.

The diagnosis of the spanæmic heart offers but little difficulty, though occasionally the result of treatment must be awaited to assure it. Owing to the enlargement and the murmurs present, organic valvular disease may be suspected. The history of the case, however, the anæmia, if present, and the condition of the vascular system are valuable aids to diagnosis.

The disappearance of the murmurs and of dilatation under vigorous therapy, and the fact that these do not return, are valuable signs of the anæmic heart.

The frequency of anæmic systolic murmurs over the aortic area and their transmissibility to the carotids at times is now fully conceded. Heretofore one of the ways to distinguish these aortic hæmic murmurs from organic murmurs was by observing whether the heart enlarged or not. In case of enlargement, actual stenosis was considered proved. My studies of the spanæmic heart show that aortic systolic murmurs along with other murmurs are frequently present with dilatation or enlargement.

But in the spanæmic heart the aortic murmur is anæmic and disappears with the cure of the blood disease, and the dilatation is not due to obstruction at the aortic orifice, but to a greatly weakened muscle. An actual mitral regurgitation may develop from the ventricular stretching and show itself by a mitral murmur or even by congestion of the lungs. This murmur develops with the dilatation, and remains long after the anæmic aortic and pulmonic murmurs have been lost under treatment. It remains, in fact, until the dilatation is cured, proving it to be dependent on that condition; most probably the valves imperfectly approximate in systole, owing to tension on the chordæ tendineæ, or possibly the condition of dilated auriculoventricular ostium is present and accounts for the murmur.

In forming a conclusion as to the presence of the spanæmic heart one must exclude those cases of dilatation following certain diseases, as diphtheria, typhoid, and grippe. In these there is frequently a decidedly degenerated myocardium, and the anæmia and the vascular condition are not the primal factors. They, of course, offer far more serious prognosis than does the purely spanæmic heart of any of the three varieties which I have studied.

The anæmic heart as I have seen it offers a good prognosis, provided the condition is easily recognized and quickly treated. Undoubtedly many cases of permanently dilated heart have had their origin in anæmia, or in loss of vascular tone, or in a combination of these factors, and it would seem wise to think more often than we do of these curable causes of what may lead to an incurable condition.

In the treatment of these cases, whether of pronounced type or not, rest is essential. Violent exercise must be absolutely avoided for a long period after the dilatation is apparently cured.

The first type demands free administration of iron, and whether dilatation be present or not it is my firm conviction that much good follows a thorough control of the heart by digitalis or strophanthus during the anæmic state. For this kind of heart, while not always dilated, is readily dilatable, and it is a much easier matter to pre-

vent dilatation than to cure it. Since studying the spanæmic heart I have used these drugs quite freely in anæmic conditions, and have been much pleased with the distinct aid they give toward speedy recovery. The administration of strychnine, so commonly resorted to in combination with iron, must be carefully watched. Many anæmic hearts are easily driven to undue rapidity by this drug. Arsenic is of extreme value, being a cardiac tonic of great power, as pointed out by various observers, among them Trousseau, Pidoux, and Balfour. I have found it as satisfactory in the spanæmic heart of this type as it is in the varieties of the senile heart. It must be administered in moderate doses for long periods.

The treatment of the second form, that depending upon changes in tension, calls not only for digitalis, but also for direct vasoconstrictors. In both my cases I used ergot and found it valuable. Cannabis indica also seemed to me excellent. It not only quieted the nervous system, slowing the pulse and aiding the digitalis, but it had decided effect on the tension when used alone. Adrenalin chlorid was practically worthless.

The third form calls for cardiac and anæmic treatment, and for direct vasoconstrictors also. These cases of the surgical variety were given iron and arsenic, digitalis, ergot, and cannabis indica for long periods. At first I found ergot of value, but later the cannabis seemed to hold the vascular system better in conjunction with digitalis, and was better borne. Digitalis alone did not readily control the heart or the tension, but in combination with cannabis indica the effect was excellent. Strophanthus acted fairly well when used in the same combination or with ergot, but were apparently not so good as the digitalis.

My endeavors were always to hold the heart at about 70, and to dose accordingly. Although cannabis indica was well borne in my cases, its use, like the use of other powerful drugs, must be attended by caution and common sense. Of course gentle laxatives are indicated, especially during iron medication, and all hygienic details are of great importance. In case of marked nervous irritability I found the sodium bromide in small doses of some advantage.

In closing this little contribution to the study of spanæmic heart I wish to emphasize the lack of direct help from the literature of the subject. Although fully aware of the incompleteness of my observations, I have classified the anæmic heart into divisions that seemed best adapted to the clinical aspects of the cases as seen by me. Whatever criticisms there may be, we must all agree that these hearts demand careful attention, early recognition, and vigorous treatment with all the resources in our power in order to hold forth a satisfactory prognosis.

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220 WEST ONE HUNDRED AND SEVENTH STREET.

STRYCHNINE AS A REMEDY IN PULMONARY TUBERCULOSIS.*

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It has finally been discovered that it is not any special kind of fresh air that cures phthisical patients but rather an unlimited quantity of fresh air, forced feeding and rest being accessories. I am in full accord with the accepted doctrine of the profession to-day that the fresh air treatment of pulmonary tuberculosis, applied according to approved methods, should not be set aside for any other mode of treatment. However, it is well known to every general practitioner and especially to those living in towns, that the ideal conditions necessary for the best results from the fresh air treatment are often unable to be secured. This is due to a variety of causes which I will not repeat, but it is emphatically and lamentably true. It therefore follows, I apprehend, that the time is still in the future when our profession is justified, either in folding its hands and declining to put forth an effort in the interest of the victim of this disease, who is unable or unwilling to comply in detail with the wise council of his physician, or in ceasing to remember and to study other remedies that may be not entirely valueless in the treatment of this disease.

Ten years ago, the late William Pepper in a short paper in one of the journals, called attention to the value of strychnine in pulmonary tuberculosis. Since that time I have repeatedly used the remedy with most gratifying results. It was the opinion of Dr. Pepper that success in this treatment was dependent upon its administration in the maximum physiological dose, and his plan, somewhat modified, I have followed. This principle I would particularly emphasize. Four doses should be given during each twenty-four hours as evenly distributed as convenient. In an adult begin with $^1/_{30}$ grain at each dose. At the end of each period of five days add $^1/_{30}$ grain to one of the doses until $^2/_{30}$ are given four times daily. Above this amount let the increment of increase be $^1/_{60}$ grain, or if the physiological limit is attained before all of the doses have been

* Read before the Nebraska State Medical Association, held on May 2, 1906, at Lincoln, Neb.

raised to $^2/_{30}$, let subsequent increase be by sixtieths of a grain. It must not be assumed that the physiological limit has been reached until muscular rigidity has been produced. This, in my experience, has been (a) in the posterior muscles of the neck, causing a disposition to hold the head back; (b) in the muscles of the inferior maxilla described as "stiffness" of the jaw; (c) or in the muscles of the anterior aspect of the thigh, making one incline to lift his feet very high in walking as if to step over some object. When one of these symptoms appears the dose should be diminished by about $^1/_4$ and again increased to a point just short of that which previously produced muscle rigidity.

It seems, however, of great importance to know that during the activity of the disease, the dose that to-day causes the muscle symptom described may probably, a week or two later, be taken with impunity, and that repeated subsequent additions will be required to maintain the desired standard of the maximum physiological limit. In other words, a tolerence for the drug is established and the dosage must be pushed to overcome it. The maximum daily amount that should be given varies in different cases. One patient of mine, a woman weighing about 120 pounds, took three-fourths of a grain daily for months. A friend of mine gave to a man weighing 140 pounds five-sixths of a grain daily for a long period, and to a woman weighing about 110 pounds he gave one grain daily for five days with no symptom.

It is most emphatically insisted that in this treatment the great benefit accrues only while the maximum dose is being taken and that the efficacy of the drug in a given case has not been tested unless the dose has been pushed to the limit. As the disease subsides tolerance for the drug diminishes. I have repeatedly observed coincidently with improvement in the local condition as shown by the physical signs and after the general symptoms had greatly improved, toxic symptoms developed from a dose that had been taken for months with no unfavorable symptoms. The thought is suggested of the possible antidotal effect upon strychnine of the tubercular condition.

Strychnine, when taken internally, in physiological doses exerts its chief influence upon the nervous system. Through this influence it causes increased acuteness of the special senses, increased force and rapidity of the cardiac contractions, as well as arterial tension, increased respiratory rate and capacity. In a word, all of the vital functions being dependent upon nervous stimulation for their activity become more active by reason of the whipping up with strychnine of the nervous system. This includes indirectly, if not directly, the vital process of cell nutrition.

Why does strychnine benefit tuberculous patients? I do not know but I offer the following suggestions: Every individual is exposed to the tuberculous infection. A few only develop the disease, and many of these only after repeated exposures. Most persons possess the power to resist the invasion of the infecting agent, but a condition exists under certain circumstances in which this power is lost. This has been spoken of as the pretuberculous condition. Many things are well known, which time does not permit me to enumerate, favoring the development of this pretuberculous or receptive condition. They are for the most part unsanitary conditions. They all contribute to lower the vitality of the cells of the whole body. In this depressed vitality consists the susceptibility to the invasion of the disease. Now, cell nutrition is not a process of passive absorption; it is an active vital process. All active vital processes in the body look to the nervous system for their initiation and maintenance. The most powerful therapeutical agent we possess, tending to promote vigorous functional activity of the nervous system is strychnine and this, administered to the physiological limit, secures so vigorous an awakening of the sluggish cell life as to once more establish the broken defence against the tuberculous invasion, and the disease is conquered.

From these propositions I propound the following corollary: In its ultimate analysis, the fundamental defect laying any individual open and defenceless against an attack of tuberculous infection is a deficiency of vital nervous energy. In this consists the pretuberculous condition of susceptibility.

Now all this sounds very pretty in theory, but I am able to assert that I have repeatedly observed it work out in practice with most favorable results. Time does not permit detailed narration of cases, and I ask your indulgence only to allow me to refer in general terms to the first one in which I made use of this treatment. That case made me a hearty believer in its value.

A married woman, twenty-eight years old, came to my dispensary clinic in the summer of 1898 with a violent and very acute attack of phthisis. She was having hæmoptasis, often several times daily; aphonia; a violent cough with profuse and foul smelling sputum, loaded with tubercle bacilli; severe night sweats; a temperature ranging from 101° to 104° and higher; nausea and vomiting, with inability to digest sufficient food; great prostration and loss of weight; in short, about every symptom that one is likely to meet with in a violent outbreak of this disease. Physical examination located the trouble in the upper part of the right lung. It was my opinion that the woman would not live two months. She lived five years, and died of pneumonia. During those years she was under my observation most of the time. I was unable to secure very much modification as to her mode of living which was not very favorable. She was placed upon strychnine and took no other medicine. Within a week she showed improvement, and by the end of two weeks her condition was materially improved in respect to every unfavorable symptom from which she suffered. When the limit of the tolerance of the drug had been reached she gained in the most gratifying manner. In her case it happened over and over again that the maximum dose having been taken, for from two to four weeks she presented herself complaining of a recurrence of one of the symptoms that had abated. The dose of the strychnine was increased to the amount that had previously produced a toxic effect, and it was found to be well borne and even an additional amount was necessary. On each of these occasions the recrudescent symptom, whether cough, pain, hæmorrhage, night sweat, or whatever it might be, soon again was relieved, thus illustrating both the establishment of tolerance for the drug and the necessity for the use of the maximum dose.

Thus, using this remedy, I have made it an invariable rule to inform the patient what he is taking, and to instruct him how to recognize the earliest sign of an overdose. With this precaution the only

danger of accident is in the carelessness of the patient.

I am of the opinion that strychnine should be used in pulmonary tuberculosis whenever the fresh air treatment is not available. I know of no reason why it might not be used to advantage in conjunction with the fresh air treatment.

A MODEL FOR A NEW OPHTHALMOTROPE; THE GONIOSCOPE. SOME PHASES OF OCULAR MOTILITY.*

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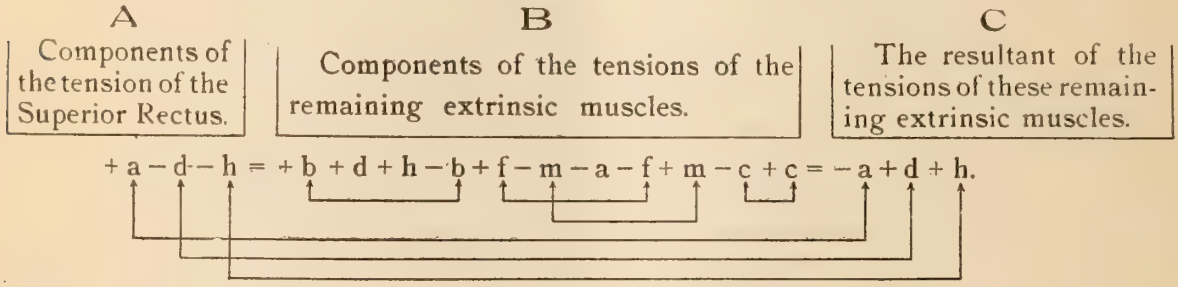
(*Concluded from page 319.*)

While in the normal eye neither the obliques nor the superior or inferior recti can contract alone, they can be paralyzed separately; thus giving us simple, uncomplicated paralysis of an extrinsic muscle. The components of the tonicity of one of the above mentioned muscles exactly balances the resultant of all the remaining muscle tensions. Therefore in simple, uncomplicated paralysis of any one of these muscles, the resultant tonicity can and will turn the eyeball on the axis of rotation (out of Listing's plane) of the paralyzed muscle in the opposite direction to that of the normal activity of the involved muscle. Suppose that both eyes are normal and in the straightforward primary position. Let the components (cephaloversion, sinistroversion, and sinistrotorsion) of the tonicity of the right superior rectus be represented, as in SCHEMA II, by + a — d — h, then these components will exactly balance the resultant of all the components of all the tensions or tonicities of all the remaining extrinsic muscles of the right eye.

These facts are also illustrated in SCHEMA III, where the terminals (arrow points) of the brackets beneath the letters point to the components that neutralize one another. Under the "remaining tensions" (B, in SCHEMA III) the letters, with their algebraic signs, mean that the cephaloversion (+ b) of the inferior oblique exactly neutralizes the caudoversion (— b) of the superior oblique; that the dextroversion (+ f) of the superior oblique neutralizes the sinistroversion (— f) of the inferior rectus; that the sinistrotorsion (— m) of the superior oblique neutralizes the dextrotorsion (+ m) of the inferior rectus; that the sinistroversion (— c) of the internal rectus neutralizes the dextroversion (+ c) of the external rectus. Under "remaining tensions," further it will be observed that — a + d and + h do not have terminals of brackets pointing to them; they are therefore moved to the right (reader's right) of the page under the caption "resultant of the remaining tensions" (C, in SCHEMA III). It will be observed that terminals of brackets extend from letters of a given algebraic sign situated under "tension of the right superior rectus" (A, in SCHEMA III) to the corresponding letters with contrary algebraic signs located under "resultant of the remaining tensions" (C, in SCHEMA III). This means that in a normal eye in the straightforward position the cephaloversion (+ a) of the right superior rectus exactly neutralizes the caudoversion (— a) of the right inferior rectus; that the sinistroversion (— d) of the right superior rectus neutralizes the dextroversion (+ d) of the right inferior oblique; that the sinistrotorsion (— h) of the right superior rectus neutralizes the dextrotorsion (+ h) of the right inferior oblique.

The letters and their algebraic signs mean further that if the tension components of the right superior rectus are eliminated by simple, uncomplicated paralysis of this muscle, the right eyeball is pulled down or caudoverts (— a) by the inferior rectus, is turned to the patient's right or dextroverts (+ d) by the inferior oblique, and has the upper end of the primary vertical meridian of the cornea tilted to the patient's right or dextrotorted (+ h) by the inferior oblique. It is thus seen that not only is the paretic eye displaced in the opposite sense, but in the opposite direction to what the eye would take, were it possible for the normal right eye to be moved by unopposed contraction of its superior rectus. The reader can easily work out the components in ocular displacement due to simple, uncomplicated paralysis of any single muscle by aid of SCHEMA II.



SCHEMA III (Compare with Schema II).

The remaining muscles of the right eye are briefly treated in the following formulæ, viz.:

+ b + d + h (R. inf. oblq.) = + a — d — h — b + f — m — a — f + m — c + c = — b — d — h.

— b + f — m (R. sup. oblq.) = + a — d — h + b + d + h — a — f + m — c + c = + b — f + m.

— a — f + m (R. inf. rect.) = + a — d — h + b + d + h — b + f — m — c + c = + a + f — m.

— c (R. int. rect.) = + a — d — h + b + d + h — b + f — m — a — f + m + c = + c.

+ c (R. ext. rect.) = + a — d — h + b + d + h — b + f — m — a — f + m — c = — c.

* Read before the Society of Ophthalmologists and Otologists of Washington, December 15, 1905.

The following refer to the left eye, viz.:

$+ b' + d' + h'$ (L. sup. rect.) $= + a' - d' - h' - a' - f' + m' - b' + f' - m' - c' + c' = - b' - d' - h'$.

$+ a' - d' - h'$ (L. inf. oblq.) $= + b' + d' + h' - a' - f' + m' - b' + f' - m' - c' + c' = - a' + d' + h'$.

$- a' - f' + m'$ (L. sup. oblq.) $= + b' + d' + h' + a' - d' - h' - b' + f' - m' - c' + c' = + a' + f' - m'$.

$- b' + f' - m'$ (L. inf. rect.) $= + b' + d' + h' + a' - d' - h' - a' - f' + m' - c' + c' = + b' - f' + m'$.

$- c'$ (L. ext. rect.) $= + b' + d' + h' + a' - d' - h' - a' - f' + m' - b' + f' - m' + c' = + c'$.

$+ c'$ (L. int. rect.) $= + b' + d' + h' + a' - d' - h' - a' - f' + m' - b' + f' - m' - c' = - c'$.

The superior and inferior recti muscles, and the obliques of an eye are stated to have preeminent and subsidary actions. In order that this statement may not be misleading, it is wise to call attention to the fact that the subsidiary action of one muscle is equal in some cases to the preeminent action of another muscle; for example, the subsidiary sinistrotorsion (intorsion) of the right superior rectus exactly neutralizes the preeminent dextrotorsion (extorsion) of the right inferior oblique in the primary position of this eye.

Normal eyes, when in the straightforward primary position, are in complete muscular balance; the tonic dextroversion of the external rectus in, say, the right eye, completely balances the tonic sinistroversion of the internal rectus of the same eye; the resultant of the tonicities of the inferior rectus and of the superior oblique of the eye balances that of the superior rectus and the inferior oblique of the same eye. The preeminent action of the inferior rectus in the tendency to caudoversion is supplemented by the subsidiary action of the superior oblique in this tendency to caudoversion. The subsidiary action of the inferior rectus in tending to produce extorsion (dextrotorsion) is neutralized by the preeminent action of the superior oblique in tending to effect intorsion (sinistrotorsion). The subsidiary adducting tendency (sinistroversion) of the inferior rectus is neutralized by the subsidiary abducting tendency (dextroversion) of the superior oblique.

An homologous relation obtains between the components of the tensions of the superior rectus and the inferior oblique. Finally, the preeminent caudoversion of the inferior rectus supplemented by the subsidiary caudoversion of the superior oblique, is exactly neutralized by the preeminent cephaloversion of the superior rectus supplemented by the subsidiary cephaloversion of the inferior oblique. Thus, the normal eye is kept in the straightforward primary position.

When an eye sinistroverts or dextroverts from the straightforward primary position the preeminent and subsidiary components of a muscle tension vary in value, one increasing and the other decreasing, or vice versa. For example, as the left eye sinistroverts by its external rectus, its superior rectus increases in power as a cephaloverter and diminishes in power as a dextrotorsionist and dextroverter, until finally when the eye has been rotated sinistrad to approximately 27°, the superior rectus has lost all power as a dextrotortionist and a dextroverter and has become a pure cephaloverter. On the other hand, should this same left eye be dextroverted by its internal rectus, just in proportion as it does so its superior rectus gains in power as a dextroverter and a dextrotionsionist, and loses as a cephaloverter, and finally (were it possible for it to be sufficiently dextroverted) it would lose all cephaloverting power. Therefore, we should be careful to state that the so called preeminent and subsidiary actions of a muscle are especially manifest only in the straightforward primary position of an eye.

Dr. G. C. Savage, of Nashville, has written two very interesting works, viz., *Ophthalmic Myology* and *Ophthalmic Neuromyology*, in which he maintains that torsion or the wheel motion of an eye does not occur physiologically, but only pathologically. Upon this theoretical assumption he conceives in a very ingenious and entertaining manner, the presence in the brain of nine conjugate innervations. Dr. Savage, further, on the basis that his assumptions are true, attempts to establish that Listing's law is not tenable and that Listing's plane is useless. Listing propounded his law on theoretical grounds and Helmholtz proved it to be true, experimentally, for distant vision.

As this whole subject is of fundamental importance in the study of ocular motility the writer deems it expedient to refer to the methods by which, experimentally, the fact of physiological torsion of an eyeball on its optic axis has been indubitably established. Many methods have been devised for observing the swivel or wheel rotation around the optic axis. Orchansky placed inside of the conjunctival sac against the eyeball a closely fitting hemisphere which had an opening cut for the pupil. In this way he was enabled to observe movements of the eyeball from the straightforward primary position to oblique primary, and to secondary positions. Further, by means of a writing lever, he was able to register graphically the movements of the eyeball. The normal torsion of an eye can be proven in this manner.

J. Muller, in 1826, observed this motion directly by watching a conjunctival vessel or a mark placed on the conjunctiva, or a pigmentation or other natural marking of the iris. Another method which has been employed, and is capable of yielding exact measurements, is by noting the degree of rotation of the blind spot. Still another available method is to make use either of irregular or regular astigmatism. In the former the movement of the stellate figure is observed by comparing it with a stationary thread. The amount of rotation, in regular astigmatism, may be noted and measured by ascertaining the cylindrical lens which corrects the optical error in different directions. It is thought by some that it is necessary, for satisfactory results, that there should be an astigmatism of over 1.00 D. The most widely used method for observing and studying the wheel motion is due to Ruete. It is based upon the apparent rotation of an after image. Any retinal meridian on which a linear image has been formed will show, by its after image, any change in direction. Another very

delicate method for detecting and measuring variations in wheel motion is by the observation of half images of a doubled vertical line. This method gives more exact results than the procedure with the after image. In this last method the error due to "physiological incongruence" of the two retinæ must be taken into account.

Generally speaking, the mechanism of corresponding retinal points is such that a point in one retina may be said to correspond to a point in the other retina, when the ordinate of the one point is of the same sign (+ or —) and same length or at least same proportional length as that of the other point, and at the same time the abscissa of the former point is of the same sign (+ or —), and the same length as that of the latter. In other words, one retinal point corresponds to another when they both lie in the same vertical and horizontal sections in the two eyes. This incongruence error referred to above is due to the fact that the strictly vertical meridians of the two eyes do not correspond with one another. It is found that when two lines diverge upwards from one another so as to form between them an angle of 2°, the double images of the two lines appear to be vertical. Apparently vertical lines may reach a deviation of 2° 30′. This physiological incongruence varies in different individuals; it may be altogether absent in myopia. Volkmann taught that the horizontal meridians have a similar physiological incongruence amounting to only half a degree, where the meridian of each eye inclines slightly downwards and outwards. Kundt developed another incongruence when he found that on attempting to bisect a horizontal line seen with only one eye, the outer half was always made too long. Herring supposed this to be due to "disparate" points, i. e., retinal points that correspond physiologically, but not anatomically or by actual measurement.

As further indicating the untenability of Dr. Savage's views the writer calls attention to the following facts in reference to the inadequacy of his first and eighth conjugate centres when the eyes are cephalodextroverted, to say the extent of 27° from the straightforward primary position. Dr. Savage teaches, and correctly, that in this movement of the eyes his fourth conjugate centre is the factor that causes the dextroversion by discharging equal quantities of "neuricity" to the left internal rectus and the right external rectus. Since the two muscles have an equally advantageous mechanical status, whether in the straight forward primary position or whether in any dextrad position, they therefore have equal mechanical effects in displacing dextrad the two eyes. But this is not true of the left and right superior recti, which he claims are innervated by his first conjugate centre. For while in the straightforward primary position the two superior recti have an equally advantageous position, yet as soon as the eyes are dextroverted they cease to have this equality and cease to be cephaloverters of equal power. When they are 27° dextrad the right superior rectus has reached its maximum elevating power, while the left superior rectus has correspondingly lost in elevating power, hence an *equal amount*[1] of "neuricity" from the first conjugate centre to each superior rectus could not cause an equal elevation. The same kind of objection exists against his eighth conjugate centre. In the straightforward primary position the left inferior oblique has just as advantageous a mechanical position for tending to sinistrotort the left eye as the right superior oblique has for tending to sinistrotort the right eye.

When, on the other hand, both eyes are dextroverted 27° the left inferior oblique and the right superior oblique have very unequal sinistrotorting powers, because they have very unequal positions of mechanical vantage. It can easily be demonstrated by the ophthalmotrope and by the gonioscope that when both eyes are dextroverted 27°, the right superior oblique has gained such a mechanical position in reference to the optic axis that it has increased its capacity for sinistrotorting; while on the other hand, the left inferior oblique has been placed in such a disadvantageous mechanical position in reference to the left optic axis that it has correspondingly decreased its power of sinistrotorting the eye. Hence an equal amount of "neuricity" from the eighth conjugate centre to the left inferior oblique and the right superior oblique would cause a greater sinistrotorsion of the right eye than of the left one, and the upper ends of the primary vertical meridians would converge. The same considerations will obtain in objection to the reality of his second and ninth conjugate centres.

The writer believes that the following theoretical classification of the conjugate centres (what we may call lower cortical motor centres as distinguished from higher association centres) is more in accordance with our present knowledge of the physiology and pathology of ocular motility than that of Dr. Savage, viz.:

(1) A centre controlling the left inferior oblique and the right superior rectus (a centre which causes cephaloversion, sinistroversion and sinistrotorsion of both eyes when in the straightforward primary position).

(2) A centre controlling the left superior rectus and the right inferior oblique (a centre which causes cephaloversion, dextroversion, and dextrotorsion of each eye when in the straightforward primary position).

(3) A centre controlling the left superior oblique and the right inferior rectus (a centre which causes caudoversion, sinistroversion, and dextrotorsion of each eye when in the straightforward primary position).

(4) A centre controlling the right superior oblique and the left inferior rectus (a centre which causes caudoversion, dextroversion, and sinistrotorsion of each eye when in the straightforward primary position).

(5) A centre controlling the two internal recti (a centre causing convergence of the two eyes).

(6) A centre controlling the left internal rectus and the right external rectus (a centre which causes dextroversion of each eye).

(7) A centre controlling the left external rec-

[1] It is impossible for a nervous impulse to descend to conjugate ocular muscles, without being equally divided between the two eyes.

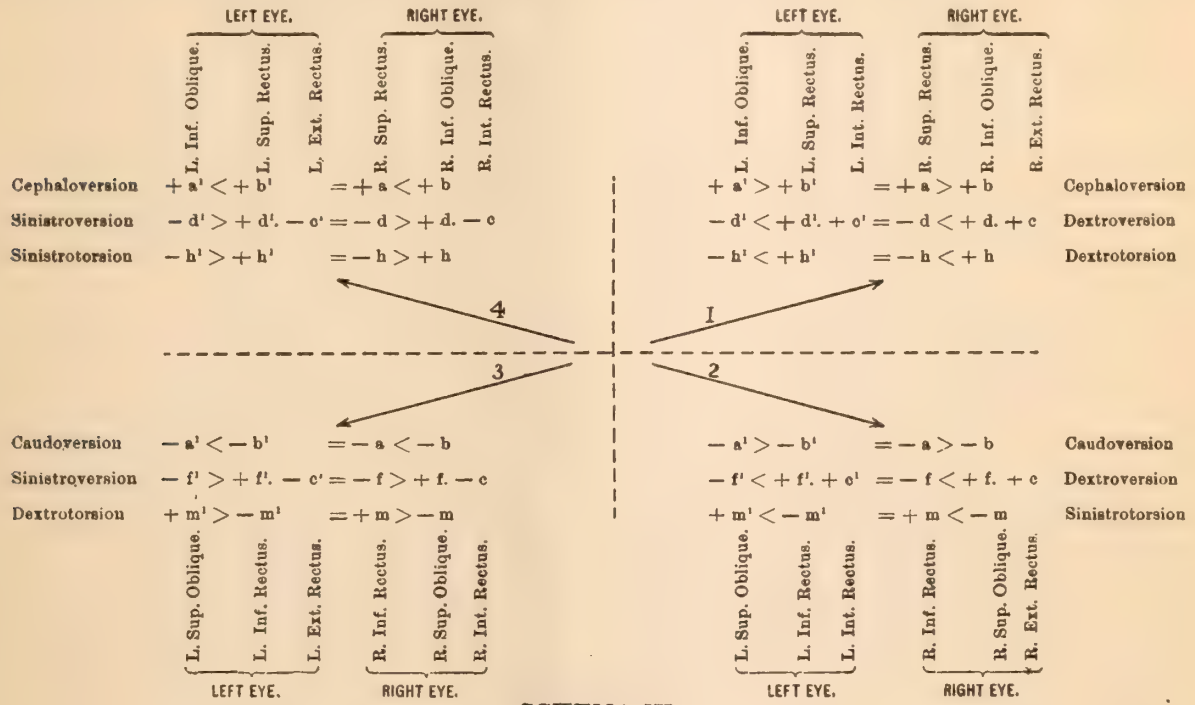
tus and the right internal rectus (a centre which causes sinistroversion of each eye).

(8) A centre controlling the ciliary muscle of each eye.

(9) A centre controlling the sphincter iridis of each eye.

(10) A centre controlling the dilator pupillæ of each eye.

These centres are bound together, more or less intimately, by association neurones, and are dominated by higher association centres. Maddox, in writing of conjugate innervations, says that theoretically five have long been recognized, viz.: One which elevates both eyes, one which depresses both eyes, etc. He says, further, that he imagines that there may be three which govern torsion, and two which regulate the vertical balance of the eyes. This classification seems highly improbable to the present writer, in view of his treatment in the body of this article of the components of a muscle's action, unless Maddox is referring to the higher cortical association centres, controlling the lower cortical centres enumerated above.



SCHEMA IV.

Schema IV is a representation of conjugate movements of the eyes (the observer standing behind the patient) from the straightforward primary position to oblique secondary positions. The point of intersection of the interrupted lines indicates the position of the centre of the cornea in the straightforward primary position of an eye. The continuous oblique lines indicate the pathways, and the arrow heads the direction in which the centre of the cornea travels in cephalodextroversion (1), caudodextroversion (2), caudosinistroversion (3), and cephalosinistroversion (4). Moreover, the inclination of the upper (cephalic) end of the continuous oblique line shows, in each case, the direction of torsion (sinistrad or dextrad) of the primary vertical meridian.

The following brief explanation will show the value of Schema IV, which must be studied in connection with Schema II: Suppose the eyes of a patient are turned down and to his left, that is, caudosinistroverted (3), it will be seen that at the same time the primary vertical meridian in each eye undergoes dextrotorsion. The signs and letters beneath the oblique line (3) enable a student readily to analyze the homologous components of the tensions of the muscles in action in both eyes. For instance, the formula $- a' < - b'$ means that the caudoversion ($- a'$) of the left superior oblique decreases progressively ($- a' <$), while the caudoversion ($- b'$) of the left inferior rectus increases progressively ($< - b'$) as the patient's left eye is turned to his left. Likewise the formula $- a < - b$ means that the caudoversion ($- a$) of the right inferior rectus, which is the conjugate muscle of the left superior oblique, decreases progressively ($- a <$) and the caudoversion ($- b$) of the right superior oblique, which is the conjugate muscle of the left inferior rectus, increases progressively ($< - b$) as the right eye is sinistroverted. The equality sign ($=$) between the two formulæ means that the caudoversion of the two muscles in the left eye exactly equals that of the two muscles in the right one.

In the straightforward primary position of, say, the left eye (Schema II) the sinistroversion ($- f'$) of the left superior oblique exactly balances the dextroversion ($+ f'$) of the left inferior rectus. An homologous situation obtains in the right eye where $- f = + f$. But as the two eyes are sinistroverted by the left external rectus ($- c'$) and the right internal rectus ($- c$) it will be observed from Schema IV that in the left eye $- f' > + f'$; this formula means that the subsidiary sinistroversion ($- f'$) of the left superior oblique progressively increases ($- f' >$), while the subsidiary dextroversion ($+ f'$) of the left

inferior rectus progressively decreases (> + f′), so that the further the left eye is sinistroverted by the preeminent action of the left external rectus (— c′) the greater the subsidiary sinistroverting power of the left superior oblique. Homologous and equal conditions obtain in the right eye, as indicated by the formula — f′ > + f′ . — c′ = — f > + f . — c.

In the straightforward primary position of the left eye the dextrotorsion (+ m′) of the left superior oblique exactly balances the sinistrotorsion (— m′) of the left inferior rectus. Also the right eye, in the primary position, has + m exactly balancing — m so that the primary vertical meridian of each eye remains vertical.

But in caudosinistroversion of the two eyes there is such a change in torsioning powers of the muscles involved that the primary vertical meridian of each eye undergoes an equal amount of dextrotorsion, as indicated by the formula + m′> — m′ = + m > — m; the left eye is sinistroverted (— c′) by the left external rectus, the optic axis of the left eye comes into such relation with the muscle plane of the left superior oblique that the dextrotorting power (+ m′) of this muscle progressively increases (+ m′ >). If the left eye be sinistroverted to, say. 27°, the sinistrotorsion (— m′) of the left inferior rectus progressively decreases (> — m′) to O. In this position of the left eye its dextrotorsion (+ m′) would be due exclusively to the tension of the left superior oblique, because the optic axis of the left eye and the muscle line of the left inferior rectus are in the same direction and the latter muscle has become a pure caudoverter.

Now consider the interesting conditions that obtain in the right eye when it has undergone a conjugate sinistroversion of 27°. The formula + m > — m means that as the right eye is sinistroverted (— c) by the right internal rectus, the dextrotorsion (+ m) of the right inferior rectus, which is the conjugate muscle of the left superior oblique, progressively increases (+ m >), while the sinistrotorsion (— m) of the right superior oblique, which is the conjugate muscle of the left inferior rectus, progressively decreases (> — m). Whereas at 27° sinistrad the left inferior rectus has become a pure caudoverter, its conjugate muscle, the right superior oblique, has not become a pure caudoverter, but retains some sinistrotorting, as well as dextroverting power. So that, while the left eye is dextrotorted a given number of degrees, when 27° sinistrad, by the exclusive action of the left superior oblique, the right eye is dextrotorted the same number of degrees by the excessive dextrotorting power of the right inferior rectus being neutralized to the proper extent by the much diminished sinistrotorting power of the right superior oblique.

The gonioscope very materially aids in comprehending these complex, but homologous movements by different but conjugate muscles. The instrument will very strongly impress upon the mind the dominating influence on motion of the eyeball through the varying angles made by the optic axis with the line of force of a muscle.

1719 DE SALES STREET, N. W.

IMPROVED METHOD OF RING TESTS IN URANALYSIS.

BY VICTOR C. PEDERSEN, A. M., M. D.,
New York,
Genitourinary Surgeon to the Out Patient Department of the New York Hospital and the House of Relief.

The following method of examining urine for albumin and other substances which are ordinarily detected by ring tests has proved so valuable to the writer during the past year or more that it seems worthy of publication. It is in fact an improvement in the Boston method. The only required implement is a medicine tube about six inches long, three eighths of an inch in diameter, tapered gradu-

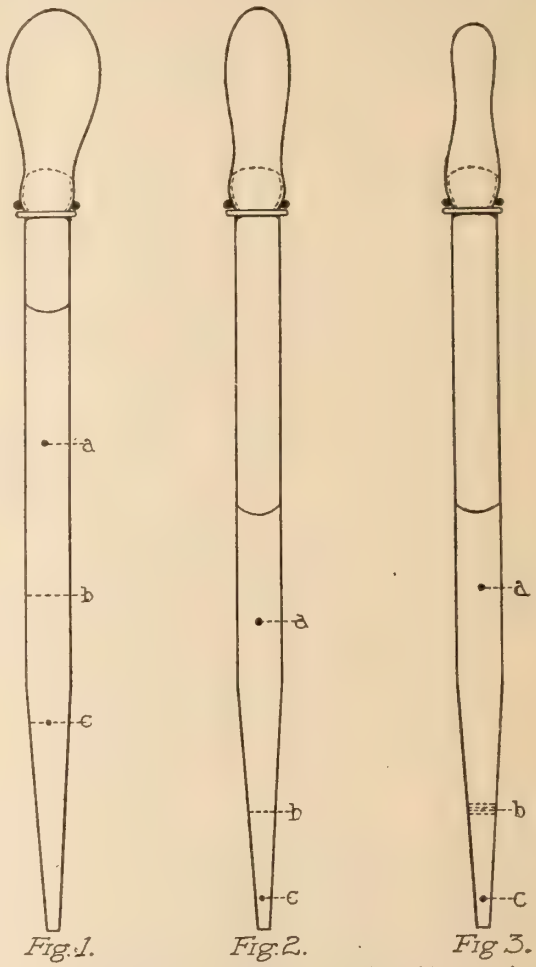


FIG. 1.—Tube filled with urine and nitric acid; a, urine; b, doubtful, negative, or faint ring reaction, substance tested for may or may not be present; c, nitric acid.

FIG. 2.—Bulb partly compressed, fluids forced out so that ring has reached narrow part of the taper; a, urine; b, doubtful ring shown to be a negative ring reaction because unchanged by being forced into narrow tube, proving absence of substance tested for; c, nitric acid.

FIG. 3.—Bulb partly compressed and ring situated as in Fig. 2; a, urine; b, very faint or doubtful ring shown to be a positive ring reaction, because reduplicated by being forced into narrow tube, proving presence of substance tested for; c, nitric acid.

ally to a rather small opening (see Fig. 1), and provided with a rubber bulb at the head, which it is well to secure at the neck of the tube with a rubber band or a tape, firmly in place to insure airtightness.

The technique is very simple, and comprises the following steps, in the determination of the presence of albumin, which is taken as an example. 1. While the air is forced and kept from the tube by compressing the bulb the tip of the tube is im-

mersed in the urine, which is sucked into the tube to its full capacity by allowing the bulb to expand. 2. About half the capacity of the tube is now evacuated by again squeezing the bulb, which is maintained in the semiflat state. After the drop of urine on the surface of the tube is wiped off against the neck of the urine bottle, the tip of the tube is dipped into the nitric acid. 3. The bulb is now allowed to expand, thus sucking the acid into the tube, replacing the amount of urine evacuated by the foregoing step and thereby forming the two layers of fluid in the tube ready for the reaction—the upper, urine and the lower, acid, as shown in Fig. 2. The tube is now stood aside in any convenient receptacle. At the juncture of the fluids the ring forms, which may be negative, doubtful, faint or positive. When the reaction is negative or positive no other step is necessary. 4. When the ring is doubtful or faint the following detail proves the condition instantly. The tube is held over the acid bottle and the bulb slowly and uniformly compressed so that the faint ring or the supposed ring is made to descend unbroken into the taper of the tube. As the ring thus descends it does not change its thickness if the doubtful reaction is really negative, but if only faint, though really positive, the thickness of the ring at once is reduplicated and the observation of the reaction made certain.

If the reagent is of less specific gravity than that of the urine, as is the fact in Smith's test for bilinuria, the reagent is, of course, first drawn into the tube, then partially expressed and the partial evacuation filled with urine, in other words, the first two steps of the test are merely reversed in order, and then the other steps are followed precisely as just outlined.

The advantages of this simple method are: 1. Great accuracy, because a small column of fluids is in contact, and the ring reaction is far more readily studied. 2. Differential diagnosis is made easy between those specimens in which by play of light upon the surface of contact it is quite impossible to be certain, whether a very faint reaction or none is present. The transferring of the line of contact to the narrow part of the taper of the tube has no effect upon a mere light action, but reinforces the layer of chemical reaction. 3. Great economy in urine, which is important when a scanty specimen is submitted, which requires a large number of tests. By proper management only a few drops of urine are sufficient for each ring test. 4. Great economy in chemicals, where cost in themselves is not very great, but which have a damaging effect upon plumbing work. The smaller the quantities used therefore the more readily may dilution in the pipes prevent their chemical action there.

After a little practice this method will be found exceedingly satisfactory.

45 West Ninth Street.

Distilling Platinum.—At a meeting of the Paris Academy of Sciences the well known French chemist, Henri Moissan, reported that with an electric current of 500 ampères and 110 vôlts he succeeded in distilling from 20 to 50 grammes of platinum in a few minutes. The vaporization of the platinum took place at the high temperature as quietly as the evaporation of water at 100 degrees. The platinum condensed in brilliant little plates and cubiform crystals.

Our Readers' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LIII.—How do you treat burns? (Closed August 15, 1906.)

LIV.—How do you treat spasmodic croup? (Answers due not later than September 15, 1906.)

LV.—How do you treat acute articular rheumatism? (Answers due not later than October 15, 1906.)

Whoever answers one of these questions in the manner most satisfactory to the editors and their advisors will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short; if practicable, no one answer to contain more than six hundred words.*

All persons will be entitled to compete under the regulations laid down by the postal authorities. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL.

The prize of $25 for the best essay submitted in answer to question LII, has been awarded to Dr. Henry C. Becker, of New York, whose article appears below.

PRIZE QUESTION NO. LII.

THE TREATMENT OF HEMICRANIA.

By Henry C. Becker, M. D.,
New York.

The best results are obtained and the greatest and quickest relief from pain given if treatment is instituted in the early or prodromal stage of an attack; in many patients this early stage consists in merely a state of mental depression, irritability, associated with a general languor; often a faint dull ache over one eye or a pain in the back part of head is the early sign, later developing into a pain of a decided throbbing character. When these symptoms manifest themselves, patient should not indulge in reading or in any exercise necessitating an eye strain; he should at once take a saline laxative; a hot mustard foot bath is also now in order; patient should lie down, preferably retiring to bed in a darkened and quiet room, and he should endeavor to sleep if possible. Cold applications to the affected side of the head are very grateful if pain is severe and throbbing. A coal tar analgesic should be administered, preferably acetphenetidin (phenacetin) in combination as in the following prescription:

℞ Acetphenetidini, ...10 grains;
Coffeini citr., ...0.5 grain;
Codeini sulph., ...0.25 grain.
S. Repeated every two hours.

In some cases cannabis indica and the bromides give good results:

℞ Ext. cannabis indicæ,.....0.5 grain;
Camph. minobromidi, ...1 grain.
S. Repeat dose every two hours.

When the pain is sudden in onset and severe and throbbing in character, ergot, combined with codeine, is very efficacious:

℞ Ext. ergot., ...1 grain;
Codeini, ...0.25 grain.
S. Repeat every two hours for two or three doses.

The patient will often complain, however, of feeling dizzy and lightheaded for a considerable length of time after the pain has been relieved by the administration of ergot. The galvanic current applied over the site of pain will often give marked relief.

The drug treatment of hemicrania is oftentimes very disappointing, for in time the effect of the dose "wears off" as it were, and must be increased in size; again, in one attack a certain drug, coal tar analgesic, or what not, may give almost instant relief, whereas at another time in the same patient it is entirely ineffectual; there is also the danger of a patient becoming addicted to the constant use of coal tar remedies, let alone narcotics, such as codeine and morphine, which sometimes are resorted to in extreme cases.

In many patients an attack is followed by lesser ones in several days succeeding the first; here five grain doses of acetphenetidin (phenacetin), given three times daily, may be sufficient to control the pain. A light diet of easily digested foods should be ordered for several days following attack.

Prophylactic Measures.—Patients subject to hemicrania should guard against undue nervous excitement, especially children should be prevented from being wrought up over their play and amusements. As hemicrania is common to neurasthenics, the proper treatment of neurasthenia in those cases is desirable in order to give relief from frequently recurring attacks. One of the most common of courses, particularly in children, is an error of refraction, especially astigmatism; in children at school and those who are subject to eye strain; properly fitted glasses will cure this class of cases, or will at least reduce the number of attacks. Nasal obstructions are said to be a cause, but certainly are not nearly so important an ætiological factor as an error of refraction. However important the reflex causes may be, it still remains that the constitutional disturbances, as lithæmia, gouty and rheumatic diatheses, etc., are of greatest importance in the causation of hemicrania, at least in adults, and appropriate prophylactic measures will surely lessen the frequency and severity of attacks. In those suffering from the gouty habit, colchicum and acetphenetidin, during an acute attack, will give relief; those suffering from the rheumatic diathesis get best results from a combination of one of the salicylates with acetphenetidin and bromides. In the preceding class of patients, gouty and rheumatic, warm bathing is advisable, several times a week, especially in winter and spring months, when they are most liable to attacks of hemicrania; careful attention to diet and the conditions of their bowels is important. In those patients who suffer from constipation and the incidental storing up of waste products in their systems, a proper regulation of mode of life, and the administration of a cathartic should be recommended. Anæmic individuals should be put on a course of iron, fresh air, etc. Those patients in whom overwork or an overindulgence in sexual relations are possible causes, should receive a physician's advice relative to those matters.

112 WEST ONE HUNDRED AND FOURTH STREET.

Dr. George A. Davis, of Lynn, Mass., remarks:

Prophylaxis.—Children or adults in whom a distinct hereditary predisposition to hemicrania exists, should be carefully watched. Those causes which are known to provoke an attack should be rigidly avoided. Hygienic measures directed to the maintenance of the general health, carefully regulated diet, abstinence from red meats, coffee, tea, alcoholic beverages, and reduction of sweets is essential. A careful examination of the eyes, nose, nasopharynx, and in female patients of the generative organs or other regions of possible reflex irritation, is necessary; and any pathological condition should be corrected. Excessive application to study and long hours at school should be interdicted in children.

In the acuteness of the attack the patient should be ordered to bed in a darkened room. Visitors should be excluded, and food temporarily withheld. If the attack occurs after a hearty meal, an emetic dose of the syrup of ipecac should be given. After emesis, fractional doses of calomel, 0.25 grain, half hourly, should be administered, for eight doses, to be followed in two hours by one half ounce of magnesium sulphate in a half glass of warm water. An enema of soap suds and warm water can be given, and small quantities of hot water internally at frequent intervals for six to twelve hours. For the relief of pain I give the following every two hours:

℞ Acetphenetidini, ...5 grains;
Salolis, }
Caffeini citratis, } .....āā 1 grain.

Rarely is it necessary to resort to morphine, but if the pain is still severe in two hours, give morphine 0.25 grain with atropine $^1/_{150}$ grain hypodermically. Galvanism to the temples and back of the neck thirty minutes daily is productive of good results in some cases. For the sluggish acting kidneys, I give potassium acetate, 10 to 20 grains, in a glass of distilled water, or one of the natural mineral waters three times a day. Attention to the emunctories is essential; diet and digestive powers should be carefully studied in every case. A change of climate in many cases will prove decidedly beneficial.

In the interparoxysmal period the treatment depends largely on the ætiological factor. The following prescription has proved efficacious in maintaining the functions of the liver and obviating constipation:

℞ Sodium phosphate, ...20 grains;
Salol, ...10 grains;
Tincture of nux vomica, ...5 minims;
Distilled water q. s. ad.....4 ounces.
M. Sig.: To be taken in a glass of Vichy, one hour before breakfast, three times a week.

To decrease the severity and lengthen the intervals of attack the following prescription should be used:

℞ Sodium bromide, ...15 grains;
Tincture of cannabis indica,.....10 minims;
Syrup, q. s. ad.....1 drachm.

If the patient is gouty or rheumatic, with high arterial tension, I give 10 grains of potassium iodide three times a day, and in conjunction with this 0.01 grain nitroglycerin, three times a day. On the other hand, if the patient is anæmic I order a mixture of iron peptonate and manganese, with arsenic, to be taken in a glass of milk, three times a day. All patients should partake freely of distilled, or any of the mineral waters daily, and sudden variations of atmosphere should be avoided. I also instruct these patients to take at least two hot baths weekly just before retiring, and a cold sponge bath every morning.

Dr. Charles Rosenheck, of New York, writes:

The treatment of hemicrania or migraine is baffling to the physician and discouraging to the patient. So many factors, both intrinsic and extrinsic, may produce a migrainous diathesis that one can readily appreciate the difficulties to be conquered. Much has been written and said about causative factors, but we are still groping about blindly for the actual excitants. At best we can say that it is caused by a disturbance in metabolism, such disturbance being forcible enough to produce a severe constitutional upset; an upheaval, as it may be termed, of physiological conditions distinctly inimical to each other.

In treating a case of hemicrania we must study the patient carefully and try to find, if possible, any associated conditions. Judicious treatment directed here may modify or minimize the danger of attacks. In women particularly, prone to migrainous attacks, menstrual irregularities must be corrected or any associated pelvic condition, such as congestion, inflammation, or displacement. The neurasthenic, to whom hemicrania clings tenaciously as a rule, must be treated with tonics, plenty of wholesome food, moderate exercise, hydrotherapy, and freedom from mental or physical strain, either of which easily precipitate an attack. The hysterical patient should be given sedatives in moderate dosage, and guarded against causal agencies. Those with rheumatic taints should not be drugged wantonly with salicylates. They are many times useless in chronic conditions, and may easily induce an attack through its irritating effect on the gastric mucosa. Massage, hot baths, and a judicious dietary régime is far more important and beneficial. Gastric hypersecretion or hyperchlorhydria is in a large number of cases associated with migrainous conditions, hence treatment directed here is essential. Such treatment consists in arresting neurasthenic states, which are intimately associated with gastric disturbances, exhibition of alkalies, reduction of carbohydrates, and increase of proteids and liquids. Ocular defects, carious teeth, and facial neuralgia have induced attacks of hemicrania. Treatment directed to these conditions will readily alleviate symptoms. Most rebellious, however, is the facial neuralgia (trifacial). Here treatment is quite discouraging, as many will testify. In young adults I have been impressed many times by the frequency of hemicrania. It is invariably associated with neurasthenia sexualis. Here we must advise a nourishing diet, excluding starches, sugars, and alcoholic beverages. Moderate open air exercise, a daily warm bath followed by cold sponging, and a good tonic are excellent expedients. This class of patients particularly are haunted by fears of impotence and sexual decay on account of the existing seminal losses (nocturnal). Free their minds from this unwarranted bugbear, and you will have done a great deal toward their alleviation.

When called to a patient suffering from a severe attack of hemicrania, the first thing to be done is to isolate him in a room, preferably dark, because such patients are extremely sensitive to the slightest external impression. Induce absolute quiet, and excluded friends and relatives. Give a powder containing 0.25 grain codeine and 5 grains acetphenetidin (phenacetin). Repeat in one hour if necessary. If patient is vomiting, let him sip cracked ice. Cloths wrung out in ice water are then placed successively on the forehead, face, neck, and upper part of chest. Renew as often as necessary, and rub both hands with ice. The effect is miraculous, and you have earned the patient's gratitude. When the severer symptoms have abated, and the patient's condition permits it, inquire carefully into patient's history, and make such physical examination deemed necessary to find the inciting factor. Patients dread an attack, and will beseech you with requests for something that will prevent recurrences. Study each case carefully, and try to find what particular factor is at the bottom of the mischief.

In conclusion, I find it opportune to say that there is no one particular treatment for hemicrania. It is as varied as the causes that produce it, and to obtain the best results, each case must be studied individually.

(*To be concluded.*)

Therapeutical Notes.

The Analgesic Action of Solanine.—Solanine, a feebly bitter alkaloidal principle, crystallizing in rectangular prisms, only slightly soluble in boiling water (1 to 8,000), more so in boiling alcohol (1 to 125), is widely distributed in the genus solanum and even elsewhere in the family. It is a prominent constituent of dulcamara. Genevil (*Journal de médecine de Paris*, June 10th) has recently investigated its physiological action. His conclusions are: (1) Solanine is a poison to the motor end organs of the nerves of organic life. It narcotizes the medulla oblongata, the spinal cord, and the nerve trunks, causing paralysis of the terminations of both the sensory and motor nerves. This physiological action places solanine among the best of our analgesic agents. (2) Solanine may be prescribed without danger in a comparatively large dose. It does not produce the unfavorable results of either atropine or morphine. Given with ordinary care, it is harmless. It has no cumulative action. It should be used especially as a substitute for morphine. (3) Solanine does not cause congestion of the brain,

even in the aged. The same should be the case in infants. (4) In all diseases where there is need of an agent to overcome excitement, spasm, or pain, solanine will doubtless be employed with the highest success.

Local Application in Parotitis.—Ragozzi (*Journal de médecine de Paris*, June 10th) prescribes the following:

℞ Guaiacol, ...1 gramme;
Petrolati., } .....āā 10 grammes.
Adipis lanæ hyd., }

M. To be used for one inunction, twice daily, morning and evening. Cover with gutta percha tissue; apply a roller bandage, so as to make slight compression.

Treatment of Laryngeal Tuberculosis by the Sun's Rays.—Baer (*Wiener klinische Wochenschrift*, 1906, No. 10) successfully applied Sargo's method of treating laryngeal tuberculosis to two patients. The directions Sargo gives are as follows: The patient sits before a mirror, with his back to the sun. He then holds his tongue with one hand and introduces a laryngeal mirror in such a way that the rays of the sun are reflected into the larynx, as shown in the image in the mirror. The séance lasts only from fifteen to twenty-five minutes, and when possible, it is to be repeated daily. The results in the two cases reported were very good.—*Medizinische Woche*, March 26th.

Treatment of Impetigo Contagiosa.—In two boys, exhibiting lesions of acute contagious impetigo, J. V. Shoemaker (*Medical Bulletin*, August, 1906) ordered ten minims of the syrup of ferrous iodide after each meal; baths in warm water and bichloride of mercury soap, followed by this ointment:

℞ Hydrargyri ammoniatæ, ...10 grains;
Thymolis, ...1 grain;
Zinci carbonatis, ...1 drachm;
Adipis benzoinati, ...1 ounce.

M. Sig.: Apply locally twice daily.

In addition, they were directed to have plain, well cooked, nutritious food, and isolation of the patients was advised.

Eczema of the Mammary Gland.—Gérard and Semoine (*Journal de médecine de Paris*, June 10th) state that cleanliness is of great importance. A warm solution of tannin (one per cent.) should be freely applied, and be followed by the same solution used in the atomiser for ten minutes. If crusts form, they should be removed by starch poultices containing about three per cent. of boric acid. After removal of the crusts the following should be applied, and changed each twenty-four hours:

℞ Glycerolis amyli, ...30 grammes;
Adipis lanæ hyd., ...20 grammes;
Sodii biboratis, ...3 grammes;
Tr. benzoini comp., ...5 grammes;
Picis liquidæ, ...0.50 gramme;

M.

Hay Fever.—Ingals, in *The Medical Bulletin*, has recently commended as a useful spray in hay fever:

℞ Resorcini, ...5 grains;
Adrenalini chlor., ...0.5 grain;
Acid. boric., ...15 grains;
Glycerini, ...0.5 drachm;
Aq. camphoræ, ...0.5 ounce;
Aq. distillatæ, ad.....2 ounces.

M. S.: To be sprayed into the eyes and nose four or five times a day.

Poisoning by Corrosive Sublimate.—In an inaugural thesis, N. Stoenesco, of Bucharest (*Revue de médecine légale*, Paris, June, 1906), systematically studies the literature of corrosive sublimate poisoning, and gives conclusions from personal observation of twenty-four cases. His results may be given briefly, as follows: Corrosive sublimate is a violent, mineral poison, but its toxic dose varies according to the individual. A fatal result has been reported after the ingestion of 0.15 gramme, whereas two grammes have been swallowed by other cases without producing death. In the latter, however, the greater part of the poison was eliminated by vomiting. In cases of acute intoxication two forms are usually recognized: (1) A subacute and (2) an acute form, properly so called. They are chiefly distinguished by their duration, the one lasting only from twenty-four to thirty-six hours, and the other from three to thirty days. The symptoms and the pathological anatomy do not differ materially from those produced by toxic doses of other mercurials. The cardinal symptoms are (1) stomatitis; (2) gastrointestinal troubles; and (3) nephritis. Whereas the first may be wanting, the other two are almost invariably present. The nephritis is the gravest lesion, especially when it occurs in a kidney, already in a degenerate condition. In a few cases the lesions found are slight and death appears to be the result of cardiac paralysis (Minovici). The absorption of corrosive sublimate in a toxic dose by any other portion of the body, produces the same symptoms and lesions, as when introduced by the mouth, except that in the latter case there may also be some lesions produced by direct contact. Although the functional disturbances and anatomical pathological lesions are usually characteristic and quite sufficient for a diagnosis, yet the chemical examination of the urine, fæces, and vomit during life, and the tissues of organs after death, will be required in order to formulate positive affirmative conclusions in medicolegal cases. The presence of a certain quantity of mercury in the body in the absence of symptoms, however, should not lead to a decision that poisoning had occurred, since it may have been introduced during a former course of medical treatment, or result from certain professions. On the other hand, its absence from the organs after death does not exclude poisoning, since the mercury may have been entirely eliminated before death. In cases of fatal poisoning by sublimate finally, we cannot, by chemical analyses alone, declare that corrosive sublimate was the form of mercury that was employed. It can only be said that death was caused by mercury, or at the most by a soluble salt of mercury.

Solution of Hydrogen Dioxide in Various Forms of Vomiting.—Gallois, in 1896, used hydrogen dioxide with success in the treatment of the vomiting of pregnancy. A tablespoonful of the ordinary solution was added to a quart of water and drunk during the day with the meals. The vomiting did not stop immediately, but usually two days later, or on the third or fourth day of treatment. Subsequently, this treatment was used in other forms of vomiting. Gallois and

Courcoux have applied it with success in the dyspepsia of nurslings. In the digestive disorders accompanying hypopepsin in adults, it has also given good results. A Russian physician, Novicof, used the following in the treatment of dyspepsia:

℞ Aquæ hydrogenii dioxidi (12 vols.).....6 grammes;
Aquæ destillatæ, ...85 grammes;
Syrupi aurantii florum.....15 grammes.
M. Take a tablespoonful every two hours.

This is recommended particularly in the treatment of gastritis, accompanied by vomiting. It has some disinfecting action upon the digestive tube. On this account it is also used in enterocolitis in infants. It should likewise be useful in overcoming habitual constipation due to intestinal atony. In the vomiting of infants, Gallois diffuses ten drops of hydrogen dioxide in 100 grammes of milk. The hydrogen dioxide solution has been employed with equal success also in the vomiting of tuberculosis.—*Gazette de gynécologie*, May 15, 1906.

The Administration of Adrenalin.—It has been shown that adrenalin produces certain functional modifications in the cardiovascular apparatus, and that as a result of repeated doses of this active agent anatomical alterations will occur. The immediate results are a marked elevation of the arterial tension, with intense vasoconstriction, and increase of cardiac energy. Therefore, the use of this remedy is contraindicated (1) when the arterial tension is already elevated, (2) when the cerebral arteries are brittle, or degenerate, and (3) when there is an arterial aneurysm. Adrenalin acts with the greatest rapidity and energy when it is injected into the veins. It is also the most toxic when introduced in this way. When a fatal dose is injected into the bloodvessels of an animal, it succumbs rapidly to pulmonary œdema. It may die suddenly, or live several hours, and there may be several such attacks before death. The quantity required to kill a dog is variable, but the animal succumbs to very small doses. A rabbit may be killed by a quarter of a milligramme (gr. $^1/_{250}$). Parenchymatous injections into the lung or into the trachea are also very dangerous, on account of the rapid changes in the aorta. Atheroma of the aorta is very readily produced by these injections into the trachea in rabbits. The *Journal de médecine et de chirurgie* (Montreal, Canada, March 10th) makes the following practical deductions from physiological experiment and clinical observation: Owing to the vascular lesions which are produced by the intravenous and intratracheal injections, and for other reasons, these methods should be rejected from practice. As regards hypodermic injections, however, authorities seem to be in accord that they are not followed by vascular alterations. Nevertheless, taking into consideration the very great sensibility to adrenalin exhibited by the human subject, it is advisable not to continue the administration of adrenalin over a long period, no matter by what route it is introduced. In fact, it is not considered prudent to give adrenalin for more than ten days at a time at the outside limit. The dose should not be greater than one half to one milligramme in the twenty-four hours. This maximum dose should never be exceeded, and, in fact, has caused at times toxic effects. It has been observed that accidents are less liable to occur when the remedy is given by the mouth. Its use as an application to the nasal mucosa has not caused any toxic effects. In the human subject adrenalin should never be injected into the veins, into the pulmonary tissue, or into the trachea. By any route, however, in which adrenalin is given its administration should be for brief periods, never exceeding ten days at a time.

The Dietetic Management of Acute Gastrointestinal Diseases of Children.—I. L. Ohlman, of Pittsburgh (*The Pennsylvania Medical Journal*, August, 1906), declares that most of the children which we find suffering with "summer complaint" are both artificially fed, and among bad hygienic surroundings. This indicates the necessity of instituting preventive treatment wherever possible. Moreover, most of the city milk is at least twenty-four hours old when delivered. By pasteurizing or sterilizing an infected milk, we cannot purify it, the germs may be killed but the toxines remain. The daily quantity of milk given during hot weather should not be so large as during cold weather, and the deficiency should be made up with water. As regards the treatment of an acute attack of diarrhœal disorder in an infant, the most important factor is the temporary withdrawal of all nourishment. Thus the pabulum on which the bacteria, now swarming in the intestinal tract, thrive is no longer supplied, and after a few thorough evacuations and irrigations of the colon, this culture bed is removed. Water, distilled or recently boiled, is freely allowed, however, since an abundance of water is of the greatest importance in supplying the loss of fluids by vomiting and purging; it also stimulates diuresis and eliminates toxines. If the child will not take plain water in sufficient quantity, weak barley or rice infusion, slightly sweetened, or containing a trace of salt, is substituted. In difficult cases the rice or barley may be dextrinized. If enough water cannot be given by the mouth, it may be introduced under the skin, or a few ounces may be left after flushing the colon. This hydric diet is continued from a period of two days to a week, depending upon the gravity of the case. As the condition improves, a little nourishment may be added to the barley water, or this may be alternated with feedings of well skimmed broth of chicken, mutton, or beef, in moderate quantities. A few drops of brandy, whiskey, or of champagne may be given either alone or in the nourishment. Stimulants, strychnine, alcohol, caffeine, or camphor may also be given hypodermically or added to the salt solution for hydodermoclysis. A return to milk food should be made only very cautiously and gradually. The most satisfactory way is to gradually replace the barley water with modified cow's milk, one half ounce at a time; or a weak condensed milk mixture may be substituted. Where wet nursing is possible, it is superior to any other method of feeding the child; but even a few ounces a day of human milk will aid greatly in solving the problem.

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RHYTHMICAL TRACTION ON THE TONGUE IN ASPHYXIA.

M. Laborde's much vaunted procedure of rhythmical traction on the tongue for the resuscitation of asphyxiated persons deserves to lose its vogue speedily unless certain recent observations of a cumulative character are proved to be fallacious. More than four years ago, at a meeting of the Paris Surgical Society held on February 26, 1902, M. Poirier declared that he had felt obliged to give up tongue traction and return to the use of artificial respiration, and his view was shared by Schwartz. Richet and Mosso had previously denied that the traction could have any effect on the cardiac and respiratory centres in cases of advanced asphyxia. Whatever publicity these objections met with, they were not sufficiently considered to put a stop to the practice of Laborde's method. Now, however, they are brought forward anew by Mlle. Zina Agnès Braïlowsky (*Revue médicale de la Suisse romande*, July 20th), who fortifies herself with some previously unpublished accounts of experiments by Prevost and Batelli, and adds the results of her own researches in the Laboratory of Experimental Physiology of the University of Geneva, under the direction of Professor Prevost.

We must say that Mlle. Braïlowsky makes a strong showing. The gist of it is to the effect that rhythmical traction on the tongue is not followed by recovery in cases that would not result in spontaneous revival on the mere withdrawal of the mechanical obstacle to respiration, provided there was such an obstacle. It follows that it is a waste of time to pull rhythmically upon the tongue of an insensible person who has been submerged or hanged or struck by lightning; and the loss of time is most serious, for it almost surely puts off resort to artificial respiration until it is too late. Of course she realizes, like everybody else, that the tongue must be brought forward whenever it has fallen back over the glottis, but this manœuvre, done once for all, has nothing to do with rhythmical traction. The wise thing to do, then, it seems to us, is to treat asphyxiated persons by methods that have stood the test of time, and not depend on M. Laborde's simple and rather fascinating expedient, though it is one that we must regret even if we have to condemn it.

THE PROBLEM OF THE DEGENERATES.

Of late years many a *Weltverbesserer* has been mightily exercised over the question of what should be done with degenerates. So deep has been the solicitude felt with regard to this subject by many philanthropic persons, mostly members of the medical profession, that they have displayed their anxiety for the welfare of the human race by reading essays at society meetings, and in some instances by moving to obtain legislation calculated in their opinion to restrict the propagation of degeneracy. The latest presentation of the matter that has come to our notice is in a paper prepared by Dr. Robert R. Rentoul, of Liverpool, and read before the Section of Psychology of the British Medical Association at the meeting held in Toronto this week. Some weeks ago Dr. Rentoul was good enough to send us proof sheets of his paper, and we have thus been enabled to give it careful attention.

The author presents very striking statistics of the increase of insanity and mental degeneracy among the people of the United Kingdom, and unfolds his plan (which, for that matter, is also the plan of many other philanthropic persons) for curbing this undesirable increment of lunatics, idiots, and potential criminals. Its essence is indicated in the title of the paper, Proposed Sterilization of Certain Mental Degenerates. Specifically, he would resect portions of the vasa deferentia in males and of the oviducts in females, leaving them with full powers of copulation, but unable to procreate. Thus he would put a stop to the propagation of degeneracy.

We have not the slightest doubt that Dr. Rentoul's motives are entirely praiseworthy, and the operations which he proposes (the same as have been advocated by others) would of course render the subjects sterile. But we question if he

has duly considered all the consequences that might be involved. Let us refer briefly to some of the possible results. Among the natural rights of all human beings is that of begetting children. Many men are highly desirous of progeny, and with most women the yearning for maternity amounts to a passion. Shall we deprive them of the possibility of gratifying these natural and perfectly legitimate longings simply because we fear that the laws of heredity will result in their begetting children that will be troublesome to society? We know too little of those laws to justify us in seeking to avert their consequences by wholesale obliteration of a natural right.

There is another moral point to be thought of. Take away a degenerate man's dread of having a baby "sworn on to" him, and his lust runs riot. Seduction becomes his pastime. On the other hand, many a degenerate woman maintains her "physical virginity" under no other influence than fear of illegitimate maternity. Relieve her of that dread, and she is straightway on the road to the brothel. What a fine state of things would soon result from the consequent unrestrained licentiousness! No, we cannot afford an experiment fraught with such a prospect. Rarely if ever is it safe to tamper with the course of Nature, and never in quest of a dubious benefit. We cannot, therefore, approve of projects for furthering the general welfare by rendering degenerates incapable of procreation.

POLYDIPSIA AND NIGHT TERRORS IN CHILDREN.

In the adult the causal relationship between gastrointestinal disturbance and nervous disorder is universally admitted, and indeed is a matter of daily observation and demonstration. The cold, hard facts of personal experience become impressed, sooner or later, upon the mind of the victim of dyspepsia, and it requires only a very small amount of reasoning to prove that discomfort, mental depression, and bodily suffering have their origin in precedent indiscretions in diet. The man is not necessarily a materialist who traces a direct connection between pickled walnuts, with a few festal concomitants, and the megalocephalic sensation of the following morning or the attack of expiatory migraine or podagra.

In the infant or young child, on the contrary, the connection between abnormal conditions of the digestive organs and nervous disorders, like night terrors, for instance, is often overlooked; because the young patient is unable to indicate the source of the mischief, and fails to call attention to the stomach as the *fons et origo mali.*

Some years ago, Comby called attention to the nervous phenomena in infants produced by excessive ingestion of liquids, or habitual polydipsia. Recently R. Millon (*Journal de médecine de Paris*, June 17th) has pointedly directed attention to the clinical fact that, in the child, chronic dyspepsia only exceptionally presents gastric symptoms. As a rule, the infant suffers for weeks or months with multiple functional perversions of the stomach, without giving any sign that suggests to the family the remotest possibility of the existence of gastric disorder. It is especially after children are old enough to run about that they acquire a tendency to drink excessive quantities of water and to ask constantly for food between meals. In this way, like overfed infants, they consume during the day a quantity of food and drink which is in the aggregate far beyond their digestive power or the normal capacity of the stomach. Laying aside the possible unfavorable consequences of the quality of the drink (especially alcoholic liquors, tea, coffee, etc.), Millon insists that liquids of all kinds, when taken in too great abundance, are able, by mere excess of quantity, to produce nervous phenomena.

Children six or seven years of age are most likely to be the victims of such disorders, because they are allowed free access to water and help themselves as frequently as they wish. Among adults the evils of constantly gratifying thirst during the summer are generally known, and the habit is avoided; but children do not have the power of self control. Illustrations are common, like that presented by Dufour to the Société médicale des hôpitaux de Paris last year, that of a boy who was not diabetic, but who habitually drank five or six quarts of water in twenty-four hours. He was cured of this habit in a few weeks, simply by discipline.

While this abuse of liquids may go on for a long while without causing any dyspeptic symptoms, upon investigation, there will be found more or less headache, disturbed sleep, and change in personal character. Night terrors are of frequent occurrence in these patients. They also present various neuropathic evidences, such as abnormal excitability, irritability, or peevishness, and finally depression of spirits, indisposition to effort, and a tendency to moping.

As regards therapeutics, there may be in such cases, as Comby contends, a dilated stomach; but it is useless to treat the digestive organs without removing the cause of the disorder. Rational and normal diet, temperance in the use of liquids, and authoritative supervision of the child's habits will cause all the nervous symptoms to dis-

appear rapidly after the irregular habits have been overcome.

VEGETARIANISM.

Vegetarianism has during the last few years acquired so many new followers that it is the duty of the physician to pay attention to this form of living. We must ask ourselves whether the ideas of the vegetarians are based upon real scientific grounds and whether we can learn from them in our methods of feeding healthy or sick people, or whether their belief is only an aberration of the human mind.

Dr. Rudolf Stähelin, in the *Correspondenzblatt für schweizer Aerzte* for July, defines vegetarianism as the exclusion of meat in all forms from our diet. There are different kinds of vegetarians, continues this author. Some prohibit everything which originates from animals; some exclude from their food the derivatives of dead animals, while they permit the use of the products of living animals, such as milk, butter, cheese, eggs, honey, etc.; these are called lactovegetarians. The third class, finally, abhors the cooking of food, and live on raw fruits and vegetables. The vegetarians themselves give as their programme in *Vegetarische Warte* the following: 1. Man is according to comparative anatomy a frugivorous animal. 2. He has not the right to kill animals so long as he can use other nourishment. 3. Vegetarianism is the simple mode of living, and means a return to Nature. 4. Man becomes an animal of prey by eating meat. Besides these four points, there are given medicinal reasons, especially the statement that meat always contains for man a putrefactive poison, and is therefore detrimental to the entire body, especially the kidneys.

Dr. Stähelin reminds us that England was the first country where a society of vegetarians was founded, in 1801, and that such men as Lord Byron and Shelley were enthusiastic followers; but John Frank Newton was the first to write about it, in his book, *The Return to Nature; or, a Defense of the Vegetable Régime* (London, 1811). America followed soon. Here Benjamin Franklin had endorsed the vegetable diet; the methodist preacher Sylvester Graham published, in Boston, 1839, his work, *Lectures on the Science of Human Life*. In continental Europe the foremost exponent was the German theologian, Eduard Balzer, who was the author of *Die natürliche Lebensweise, der Weg zur Gesundheit und sozialem Heil*, a book which appeared about 1868.

But, besides these writers, who were vegetarians for principle's sake, there are many who observe the vegetarian diet because they feel better under this régime and imagine themselves to be thus freed from disease.

Dr. Stähelin places two questions before us: How can the necessary nutrients be compared in animal diet with vegetable diet, and what does the difference mean for the human body? These questions can easily be answered. So long as the body receives enough food to produce the necessary calories, it will be satisfied, provided the food is introduced in a form ready to be absorbed. The important difference, according to the author, between vegetable and animal food lies in the difference in the proportion of fat. And fat can be introduced in the form of vegetable fat (oil) or animal fat (meat fat). With animal food we absorb a great amount of albumin, while vegetable food contains very little albumin. The author is of the opinion that a great amount of albumin is not only unnecessary for man, but, on the contrary, very detrimental on account of its putrefactive property (he cites Chittenden, *Physiological Economy in Nutrition*, New York, 1904). But a meat diet does not only introduce albumin into the human body, but also sulphur, phosphorous acid, alkalies, and sodium chloride, and therby augments the labor of the kidneys and the intestinal tract.

The other question is: Does animal diet contain, besides the nutrients, substances the lack of which is not indifferent to the human body? These substances the writer calls extractive matter (*Extraktivstoffe*); they originate hunger, increase the appetite, and stimulate digestive secretion. Among these are the purin bodies, so well represented in meat and missing in vegetables (with the exception of the legumes). The author confirms from his experiments the theory that the extractive matter of meat has a diuretic influence, and says that eggs act like meat in this respect; he also states that under a milk diet the labor of the kidneys is less than under an animal diet.

The conclusion Dr. Stähelin draws is, therefore, that vegetarianism is by no means a fad, the invention of a diseased mind, but that it may rightly be adopted among our therapeutics, although there is still much to be considered before we find the exact limitations of its indications.

KHO-SAM IN THE TREATMENT OF DYSENTERY.

The Chinese drug known as kho-sam, or ko-sam, has not yet reached this country, so far as we are aware, but for some little time past preparations of it, compressed tablets and *dragées*, have been obtainable from certain Paris pharma-

cists. In the *Clinique* for August 3rd M. L. Lafay furnishes a good deal of information about it, mostly from the pharmacological point of view. According to him it is the almondlike nut of *Brucea sumatrana*, a plant found in Assam, Singapore, Borneo, Sumatra, Java, southern China, and Australia. M. G. Bertand, of the Pasteur Institute, has isolated from it a crystalline glucoside termed khosamin, and this is said to be its active principle. The nut yields a fixed oil, but that is medicinally inert.

The Chinese and the Annamites have long made use of kho-sam, more particularly as a hæmostatic and febrifuge, but it is especially as a remedy for dysentery that the Dutch and French colonial physicians have lately found it valuable, their attention having apparently been directed to it in this connection by the properties long attributed to another species of the same genus, *Brucea antidysenterica*, found only in Abyssinia and the Cameroon. It is in tropical dysentery, a disease very fatal to persons from temperate latitudes, that kho-sam seems to have yielded brilliant results. By its administration M. Mougeot cured in from three to six days 799 out of 1,260 dysenteric patients.

Kho-sam has both emetic and cathartic properties, and we are told that it must be used cautiously; compressed tablets, each containing one grain of the drug, are said to keep well and to constitute a preparation convenient for administration. The usual daily amount proper for adults is ten grains on the first day and twelve grains on each of the following days. If it is not tolerated by the stomach, it may be given in the same doses by the rectum. Probably our American pharmacists will not be slow to provide us with suitable preparations of kho-sam, and our insular possessions furnish a wide field for testing the efficacy of the drug in dysentery. Perhaps the plant could be cultivated to advantage in the Philippines.

IS EPILEPSY A DISEASE OF METABOLISM?

It required a quarter of a century after Koch's discovery of the tubercle bacilli for us to fully learn that pulmonary consumption was a house disease; and the modern treatment of it teaches us more and more convincingly that the only way to cure it is to cause the patient to breathe air not confined within four impervious walls of any kind, to breathe only outdoor air—air that is not contaminated by local conditions of impurity. It may take us more than twenty-five years to fully understand that many of the epilepsies are due to diseased metabolism.

The pathology of epilepsy, if there is such a thing in the strict sense of the word, in the idiopathic types, that which antedates convulsions, is still partially, perhaps wholly, an unsolved problem; for what we may believe to be pathology now may be found later to be an anatomical or histological summary of the results of seizures and to bear no direct relationship to the actual causes of the convulsions in the first instance.

Food, hygiene, and proper environment, minutely arranged and scrupulously observed, are doing so much to palliate or cure diseases formerly thought to be beyond cure or even palliation that the time is come when we may fairly ask: Is epilepsy a disease of metabolism? Is it such wholly or in part? We can do but little more just now than ask the questions, justifying them by the light of experience and on the ground that after eliminating the factors in treatment by means of drugs, surgical intervention, and the like, the proper dietetic treatment of the disease in many cases is the one thing that most frequently produces the best results, provided important collateral measures not implying the use of drugs or surgery are not overlooked. The conviction is constantly gaining ground that the causes of epilepsy are not so much to be sought in the gross disarrangement or partial destruction of cells in any part of the brain—such as would result from an injury or hæmorrhage—as in the temporarily perverted chemistry of such cells.

With this idea in view the laboratory work at the Craig Colony for Epileptics, under the immediate direction of Dr. James F. Munson, a graduate of the University of Michigan and for two years assistant to Dr. Victor C. Vaughan, is about to proceed along new lines. No problem in medicine is more profound than that underlying the causes of epilepsy, and if any results are to come from Dr. Munson's work at Sonyea, they should not be expected short of years of patient investigation.

ŒDEMA OF THE GENITALS IN THE NEWLY BORN.

This condition, which affects the pubic region as well as the genitals proper, is probably due to some infection, as is suggested by J. K. Friedjung (*Wiener klinische Wochenschrift*, xix, 24; *Berliner klinische Wochenschrift*, July 16th), who thinks that the infective agent may gain access by way of the navel. It appears to be much more common in boys than in girls, and the reason of this difference does not seem obvious.

News Items.

NEW YORK CITY AND STATE

The New Nurses' Home for the Kingston, N. Y., City Hospital.—Ground has been broken for a new nurses' home to replace the old one, which has been taken for alcoholic cases. The new addition has been donated by Mr. S. D. Coykendall.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending August 18, 1906:

	August 18.		August 11.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	113	10	116	16
Smallpox	1	..	1	..
Varicella	17	..	8	..
Measles	67	6	125	4
Scarlet fever	32	2	53	..
Whooping cough	51	18	56	11
Diphtheria	151	20	128	16
Tuberculosis pulmonalis	376	176	371	173
Cerebrospinal meningitis	9	4	9	10
Totals	817	236	867	230

PHILADELPHIA AND THE MIDDLE STATES.

The Cumberland Valley Medical Association will hold its fourth annual meeting at Chambersburg, Pa., on Tuesday, September 4, 1906. Dr. James E. Pilcher, Carlisle, Pa., is president of the association, and Dr. John J. Coffman, Scotland, Pa., is secretary.

Site for Hospital for Criminal Insane.—The commission appointed by Governor Pennypacker to select a site for a new hospital for the criminal insane, met on August 13th and accepted the property offered by the Delaware & Hudson Railroad Company at Farview, Wayne County. The site contains 625 acres and is given for a consideration of $5. On a section of the land is a culm bank, which will insure, it is said, a coal supply for the new institution for twenty years.

The Fifth Censorial Branch of the Medical Society of the State of Pennsylvania, was organized and the initial meeting was held on August 9, at York, Pa. Dr. A. A. Long, of York, was elected president; Dr. W. H. Wagner, of York, vice-president; Dr. J. J. Coffman, of Scotland, secretary. After the routine business the assembly was taken to Brookside Park, eight miles from York, where dinner was served. At the afternoon meeting Dr. G. E. Holtzapple, of York, made the address of welcome, in behalf of the York County Medical Society. Dr. James Evelyn Pilcher, of Carlisle, Pa., gave the principal address, his subject being Medical Lessons From the Far East. Forty-two physicians were present, many of whom made short addresses.

The Health of Philadelphia.—During the week ending August 11th the following cases of transmissible disease were reported to the Bureau of Health:

	Cases.	Deaths.
Typhoid fever	104	16
Scarlet fever	22	1
Chickenpox	2	0
Diphtheria	28	4
Cerebrospinal fever	3	0
Measles	20	2
Whooping cough	34	8
Tuberculosis of the lungs	96	58
Pneumonia	21	21
Erysipelas	3	0
Puerperal fever	1	1
Trachoma	3	0
Tetanus	3	0
Anthrax	1	0
Cancer	13	16

The following deaths were also reported from transmissible disease: Tuberculosis, other than tuberculosis of the lungs, 10; dysentery, 4; cholera morbus, 3; diarrhœa and enteritis, under two years of age, 92. The infant mortality was 194; under one year of age, 155; between one and two years of age, 39. The whole number of deaths amounted to 519, in an estimated population of 1,469,126, corresponding to an annual death rate of 18.31 in a thousand. There were 54 still births, of which 27 were males and 27 females. No unusual meteorological phenomena were observed.

Bequests.—By the will of Mary A. Wagner, $500 each will be given to the Methodist Home for the Aged, the Methodist Hospital, and the West York Church. Upon the death of a brother the residue of the estate will be divided between the Methodist Hospital and the Methodist Home for the Aged. The will of William Dorrian leaves to a relative the income of $5,000, the principal going to the St. Joseph's Hospital upon the death of the legatee. The sum of $15,000 will go to the Archbishop of Philadelphia should a son die without issue. Other bequests are made to some charitable organizations. Upon the deaths of the three legatees of the will of Abraham Reinheimer, the sum of $15,000 will be divided between the Jewish Hospital ($5,000), Jewish Foster Home ($5,000), Jewish Maternity Association ($2,500), and the Young Women's Union ($2,500).

BOSTON AND NEW ENGLAND.

The Fall River, Mass., Seaside Home for Babies has been open all summer, and has accomplished much good work in cases of children with enteric diseases, that being the purpose of the home.

The Union Hospital, Fall River, Mass.—The much needed new building for this institution is at last in sight. The trustees, who have raised over $60,000, have called for bids on a building to cost between $100,000 and $125,000. The hospital has already acquired, by gift, a lot of land in the highest portion of the city.

The Mortality of Connecticut.—According to the State Board of Health's *Monthly Bulletin* for July, 1906, the total number of deaths during the month was 1,525. This was 276 more than in June, and 125 less than in July of last year, and 92 more than the average number of deaths during July for the five years preceding. The death rate was 20.1 for the large towns, for the small towns 13.8, and for the whole State 18.5. The deaths reported from infectious diseases were 199, being 13.0 per cent. of the total mortality.

A New Hospital for Peabody, Mass.—The trustees of the J. B. Thomas Hospital Fund, at Peabody, have awarded the contract to erect the hospital building to a Boston company, for about $48,500. The hospital will be erected on land owned by the trustees. It will be of red brick with white trimmings and slated roof, the main building being three stories while there will be a larger wing of one story on each side. The building will have accommodations for thirty patients. The hospital fund was founded by the late J. B. Thomas, who in 1898 bequeathed the town $50,000 for hospital purposes, and since that time the late William F. Walker left the town about $23,000 for the same purpose, and Mrs. Emeline J. Stevens left $4,000 for a similar purpose. The site was bought some time ago, but the action on building was delayed, owing to the cost of labor and material, but as there appeared no immediate prospect of any reduction of cost, it has finally been decided to go ahead and build.

BALTIMORE AND THE SOUTH

"Snitching" is a term used in Kansas City, Mo., to describe the methods of the class of lawyers who offer money to hospital physicians to introduce and recommend them to persons who have met with accidents. In New York city such men are called "ambulance chasers."

The Order of Practising Physicians of Brunswick and Mecklenburg Counties, Va., was organized at La Crosse, Va., Tuesday, August 14th. The following were elected officers: Dr. W. W. Wilkinson, La Crosse, president; Dr. Marrow D. Hunter, Union Level, and Dr. W. Herbert Lewis, Lawrenceville, vice-presidents; Dr. S. G. Jett, South Hill, secretary; Dr. B. J. Montgomery, La Crosse, treasurer.

The Cherokee County (Kas.) Medical Association held a meeting on Tuesday, August 14th. A discussion was had on the subjects: Fracture of the Femur, and on the Treatment of Typhoid Affections, and Dr. C. S. Huffman, of Columbus, read a paper on Dysentery in Children. Dr. H. H. Brookhart, of Scammon, is secretary of the association.

The Bullitt County (Ky.) Medical Society held a meeting at Lebanon, Ky., on Friday, August 17th, under the presidency of Dr. S. W. Bates, of Shepherdsville. Dr. D. C. Bowen, of Elizabethtown, read a paper on the Home Management of Pulmonary Tuberculosis; Dr. R. J. Fryer, of Lebanon Junction, reported a case of typhoid fever, and Dr. S. T. Hubbs, of Colesburg, a case of hysterical mania,

with cure. The next meeting will be held at Shepherdsville on September 20, 1906.

Donation to a Baltimore Hebrew Hospital.—Mrs. Frank, widow of Dr. Samuel Leon Frank, former president of the Hebrew Hospital and Asylum, will donate $75,000 to the hospital, to be used in erecting a new hospital building adjoining the present building on Monument Street, near Broadway. For some years the directors of the institution have noted the necessity for an addition to the present building, and the donation from Mrs. Frank will make it practicable to develop the institution on a much broader scale than was ever considered. Not only will the institution be enlarged, but the new building will be made the hospital proper. The present structure will be used for incurables and as a home. A training school for nurses will be established, and the institution will take its stand with the leading hospitals of the country.

CHICAGO AND THE WEST

The President of the Ohio State Medical Association Honored.—On Thursday, August 16th, a banquet and reception was tendered by the Greene County, Ohio, Medical Association, at Xenia, in honor of Dr. B. R. McClellen., president of the Ohio State Medical Association. Among those who responded to toasts were: Dr. Brooks F. Beebe, of Cincinnati; Dr. S. S. Halderman, of Portsmouth; Dr. C. L. Minor, of Springfield; Dr. E. S. Stevens, of Lebanon; Dr. L. M. Jones, of Jamestown; Dr. J. Morton Howell, of Dayton; and Dr. R. H. Grube of Xenia. Dr. W. A. Galloway, of Xenia, presided as toastmaster.

The Department of Pathology, Indiana University, Bloomington.—Dr. Lemuel W. Famulener has been appointed assistant professor of pathology in this university. Dr. Famulener was for three years Nelson Baker & Co. Research Fellow in pharmacology under Dr. Cushney at the University of Michigan, and for one year with Dr. Mansen in the *Statens Seruminstitut* at Copenhagen, Denmark. The position of Research and Technical Assistant in Pathology in the Indiana University is still vacant. The position carries with it a salary of about $700 and the rank of instructor in the university, the entire time of the assistant to be given to research in some field of experimental pathology.

Statement of Mortality in Chicago for the Week Ending August 11, 1906, compared with the preceding week, and with the corresponding week of 1905. Death rates computed on United States Census Bureau's figures of midyear populations—2,049,185 for 1906, 1,990,750 for 1905:

	Aug. 11, 1906.	Aug. 4, 1906.	Aug. 12, 1905.
Total deaths, all causes	603	501	539
Annual death rate in 1,000	15.34	12.75	14.12
Sexes—			
Males	365	283	304
Females	238	218	235
Ages—			
Under 1 year of age	192	139	167
Between 1 and 5 years of age	56	49	53
Between 5 and 20 years of age	43	29	43
Between 20 and 60 years of age	209	187	163
Over 60 years of age	103	97	103
Important causes of death—			
Apoplexy	9	5	16
Bright's disease	48	34	30
Bronchitis	3	6	8
Consumption	63	58	36
Cancer	26	27	21
Convulsions	5	5	6
Diphtheria	6	9	6
Heart diseases	26	32	37
Intestinal diseases, acute	150	116	163
Measles	3	..	1
Nervous diseases	23	10	17
Pneumonia	29	32	30
Scarlet fever	5	7	1
Suicide	7	7	9
Sunstroke	6	2	5
Typhoid fever	6	4	8
Violence (other than suicide)	44	27	30
Whooping cough	3	2	3
All other causes	141	118	112

Although the temperature of the week was not unseasonably high, the excessive humidity intensified its effects and caused a serious increase of mortality—most severe among the young and among those suffering from chronic disease. There were 102 more deaths from all causes reported than during the week previous. Of this excess 60 were in the under five year period, the total of these being 248, as against 188 during the week of August 4.

GENERAL

The Therapeutic Effect of Mirth.—If it be necessary that you place your expected death warrant in the care of a doctor of medicine, call in a general practitioner who has a fund of anecdote on the tip of his tongue, says a writer in the New York *Press*, and, instead of wearying you and sapping your strength with his tentative and often impertinent interrogations, converts himself into a bedside raconteur with so hearty a purpose that you laugh in spite of your inclination to die. When a sick man can be moved to shake his sides over a well told story he is not going to kick the bucket right away, unless, of course, caught in the throes of violent cachinnation, he ruptures a blood vessel in his brain. If I had the education of all physicians as my mission on earth, I would teach every one to be witty and mirth provoking. Deliver me from your long visaged, bemoaning, over sympathetic man of medicine, who kills more often than he cures. One of these heart-bowed-down practitioners is worse than three attacks of pneumonia.

The Mississippi Valley Medical Association will hold its annual meeting at Hot Springs, Ark., on November 6, 7, and 8, 1906, under the presidency of Dr. J. H. Carstens, of Detroit. Dr. Frank P. Norbury, of Jacksonville, Ill., will deliver the address in medicine, and Dr. Florus F. Lawrence, of Columbus, Ohio, will deliver the address in surgery. Dr. Norbury has chosen for the subject of his address Clinical Psychology, and Dr. Lawrence will discuss Surgical Principles and Theories. In addition to these addresses there will be the annual address of the president. Communications regarding papers should be addressed to the secretary, Dr. Henry E. Tuley, 111 West Kentucky Street, Louisville, Ky. Elaborate arrangements have been made by the local profession of Hot Springs to entertain the visiting doctors and their wives, the meeting being held at one of the largest hotels, which will be specially opened in advance of the season to accommodate the association. A cordial invitation is extended to every physician in the valley to attend this meeting, for which a large number of interesting and valuable papers have been promised.

Cholera in Manila.—The Washington *Star* for August 19th says: Chief Quarantine Officer Heiser, of the Marine Hospital Service, has made a report of the recent severe outbreak of cholera in Manila and elsewhere in the Philippines. The report says that along toward the last of June cholera appeared simultaneously in a number of widely separated towns. In Manila the disease took on a most severe form. During the week ending June 30 there were 41 cases and 40 deaths, just one recovery out of a total of 41 cases. Practically all the victims die in a few hours after being attacked. Medical opinion seems to have come to the conclusion that the disease had its inception from vegetables grown by a Chinese truck garden at Pasig. In nearly every town where the disease broke out the first person attacked had come from Pasig and had probably purchased some of the vegetables. From Pasig the disease spread down the Pasig River and invaded Manila. The bureau of health had difficulty in combating the disease because of the concealment of cases, premises remaining undisinfected. The disease was confined almost wholly to the poorer classes, but in several instances Americans succumbed.

The Antiseptic Properties of Tobacco.—Lovers of tobacco in its various seductive forms who have been at times a trifle conscience smitten by reason of the alleged deplorable effects of the tobacco habit upon the mind and body should henceforth be able to smoke their pipes in peace (*Leslie's Weekly*), since no less an authority than the *Lancet* has risen up to declare in the most deliberate and positive way that tobacco smoke contains an appreciable amount of formaldehyde, a powerful antiseptic and germ killer. It is because of the presence of this chemical agent in tobacco smoke that users of the weed are largely immune, it is said from certain dread diseases of the throat, lungs, and nasal passages. The reasoning, which seems to be quite conclusive, is that the smoke, passing through the mouth and nose, effectually disposes of the microbes constantly deposited there, and thus supplies the needful ounce of prevention for many diseases. While one part of formaldehyde in 10,000 parts of water is sufficient to destroy all bacterial life the amount of the poison found in tobacco smoke is so infinitesimal that it has no injurious effect upon the human organism.

DR. RICHARD ANDREWS REEVE,
of Toronto, Canada,
President British Medical Association.

The Toronto Meeting of the British Medical Association.

THE ENTERTAINMENTS.

Of a truth coming events cast their shadows before them. On Saturday last, this, the Queen City of Western Canada, was literally overrun by American summer tourists, as well as by hundreds of physicians and surgeons from the United States and Great Britain, here for the second meeting of the British Medical Association in Canada. Many of the visiting physicians and surgeons are accompanied by their wives. In fact, on Saturday the hotels of the city were declining patrons. On Sunday the influx continued in steady streams from all parts of Canada, the United States, and Great Britain. With their advent (having secured rooms in advance), the ordinary travelers, male and female, were displaced. On Monday crowds were seen with hand baggage, seeking shelter. You may fancy my surprise to-day, when Dr. F. N. G. Starr, of Toronto, an honorary local secretary of the British Medical Association, informed me that fully twenty-five hundred were here or would be here by this evening for the respective meetings of the British Medical Association and of the Canadian Medical Association. Our Canadian confrères, wisely, very wisely, have named the same week for both events.

Be it known that the British Medical Association may be found all over the habitable globe. Wherever a British flag flies, there is a branch of the "B. M. A.," as its thousands of members affectionately dub it. In this vast and enterprising Dominion it has a full quota of intensely loyal and enthusiastic members.

The officers of the British Medical Association, in a very broad spirit of true kinship, invited over eight hundred American physicians, of whom the greater part have accepted. The American element alone will make a very large conference. Many of them, by courtesy, will read papers, and nearly all will take part in the discussions in their respective sections. Hence, hundreds and hundreds of our fellow citizens, other hundreds and hundreds of Britishers, and over a thousand of our near neighbors and kinsmen, the Canadians, are or will be in the medical Mecca between August 21st and August 25th.

If anything can compare with the warmth of the hospitality here, it is the weather; Canada has a hot wave, composed equally of heat and humidity, that will rank on a perfect parity with our own weather in New York. The effect of the same on the enthusiastic medical men of the meeting, and on their consorts, may be imagined. The result is very, very trying. An Englishman philosophically remarked this morning: "You had better save it now; you can't have it in January." Order may come out of chaos, and

some of us may be spared to relate the several happenings as they occur here, away in this truly American New York atmosphere.

Events doubtless have prevented many from being here, press of professional work or illness. A word for their special comfort and general encouragement. Think of what precedes and thank your special patron saint if you have one, if not, adopt a friend's patron saint and offer a little incense at his shrine.

The scene, the *mis ensemble,* as our French Canadian friends would say, at the University of Toronto building to-day was worthy of note and study—a mass of perspiring humanity appealing to another mass of equally polite, but equally perspiring humanity. Members and guests seeking information, owing to the doubling of an ordinary meeting, there was much good natured confusion. Be it known to my readers that the "B. M. A." will have a lot of female members here, full bloom M. D.'s. At the Bureau of Enregistration they, the men and women, were equally intent on their several missions, wanting tickets for this civic reception, that garden party, this or that excursion or luncheon. In the vaporlike atmosphere they scurried from room to room, all with intense earnestness on their faces, all very hot. The women and men wanted things; many of the former wanted all things coming to them. and, faith, they succeeded, and they retired—one man (a cool specimen) with eight card invitations.

A surfeit has been provided and no mistake. The tickets were issued to members and invited guests only on presentation of their respective credentials. First, a ladies' coach drive on Tuesday. Secondly, a garden party by His Honor, the Lieutenant Governor and Mrs. Clark (for men and women). Thirdly, a reception by the president of the British Medical Association, Dr. Reeve, of Toronto, and Mrs. Reeve (for men and women, on Tuesday). Fourthly, a luncheon for visiting ladies at the Lambton Golf Club, Wednesday. Fifthly, a luncheon by the Dominion Alliance, Wednesday. Sixthly, a luncheon at the Empire Club, Wednesday. Seventhly, a garden party at the University Women's Club (for women only), Wednesday. Eighthly, a garden party at Mr. and Mrs. H. C. Cox's, Wednesday (for men and women). Ninthly, a reception at the Toronto General Hospital, Wednesday. Tenthly, a reception at Lakeside Home (for men and women), Wednesday. Eleventhly, a reception by His Worship, the Mayor and Council of Toronto (for men and women), Wednesday. Twelfthly, an excursion to Niagara Falls (for

City Hall.

women only), Thursday. As a thirteenth event, the annual dinner of the British Medical Association (for men only, Thursday. Fourteenthly, a band concert, at Dean's Garden, Thursday (for men and women). Fifteenthly, a luncheon at the Hunt Club (for women), Friday. Sixteenthly, a garden party at Mr. and Mrs. G. B. Osler's. Seventeenthly, a reception by the Royal Canadian Yacht Club, Toronto Island. Eighteenthly, an excursion to the Niagara Power Company's Works (for men only), given by Sir Henry Pellot, colonel of Toronto's famous regiment (the Queen's Own), on Saturday. Nineteenthly, an excursion to Niagara Falls (for men and women), Saturday. Twentiethly, an excursion to Muskoka Lake (for men and women), Saturday. As a twenty-first event, an excursion to the Ontario Agricultural College at Guelph (for men and women), Saturday. The twenty-second event is an excursion to Hamilton (for men and women), on Saturday, and, finally, as a twenty-third event, an excursion to the Thousand Islands (for men and women). If this fails to produce cerebral congestion, suicide, or death, the editor adds:

"For full details of all entertainments and excursions, see *Daily Journal.*"

This, mark you, with the thermometer over 80° and the humidity near the hundredth mark.

It is now Tuesday, the opening day of the meeting. The scene in the grounds of the University of Toronto early this morning was an animated one. The main building, or that of the University of Toronto, was its chief centre of attraction, particularly to the hundreds who came into the city by the early morning trains. They had to register to secure the necessary credentials that constitute an open sesame to all of the events, scientific, social, excursive, and others. The main building has a post office, a newspaper stand, and endless rooms—all duly inscribed. Among others a "ladies' rest room." They reign at this meeting.

A great many medical journalists are here. Dr. Dawson Williams, editor of the *British Medical Journal*, has a room to himself—an adjoining room is used by the reportorial staff of the *Journal*—all medical men.

Dr. R. A. Young represents the *Lancet*, of London, and Dr. Wolfred Nelson the *New York Medical Journal* in the absence of Dr. Frank P. Foster, whose recent illness prevented his attending.

The main building, on its upper floors, has many exhibits of books, surgical instruments, electrical apparatus, drugs, etc., the general outlook is very attractive. Many of the firms have registers, and thus leave addresses.

The truly remarkable influx mentioned by me yesterday continues to-day, with this important difference: The crowding in the hotels and everywhere greater, and it is hotter and more humid. The registration offices were packed by dense crowds of sweltering humanity, male and female. The polite and attentive but equally hot and perspiring attendants were deluged with enquiries or, in local parlance, were "snowed under." They got into line the visitors; others who ignored that were politely referred to the end of the line, male and female. Two very bright New England women were my neighbors for half an hour. Among other things they wanted the handsome badge pins of the members, but as they were lay instead of medical sisters, they received them not. They did want them "ever so much." All were good natured and civil; this truly American weather had so much that was homelike that they one and all accepted the inevitable.

Dr. F. N. G. Starr, one of the local secretaries, in reply to a question, informed me that nine hundred had been elected to full membership at this meeting, of whom twenty are American physicians and surgeons who possessed the necessary *sine qua non* for membership, a diploma issued by a British royal charter university or college, either British or Colonial. Fancy nine hundred new members elected at an annual meeting. It

St. Andrew's Presbyterian Church.

constitutes an enviable record, and yet our Canadian confrères are justly proud.

The following leading clubs, in a very kind and considerate manner, have thrown open their portals to all duly accredited visitors and guests; the National Club, the Albany, The Victoria, the Military Institute, the Hunt Club, the Toronto Golf Club, the Lambton Golf and County Club, St. Matthew's Bowling Club, and the Royal Canadian Yacht Club of Toronto. In fact, every courtesy is being shown the visitors and visiting members of the asssociation. A limit has to be fixed when two thousand five hundred are here, but the limit applies strictly to the Canadians, who give way to their visitors, and particularly to the visitors from the United States of America. The warmth and genuineness of one's welcome are truly remarkable, a new and lasting tie in binding us to our kinsmen of England and Canada.

The very extensive and very picturesque grounds of the University of Toronto, with its many very substantial and high class buildings, deserve special mention, all are within the corporate limits of this beautiful city. The uni-

versity proper, a poem in stone, has already been referred to in my opening letter. It faces College Street. Some of the buildings are the following: The Library, a very handsome and effective building, and, like the university, in Canadian limestone; the Medical Building, of the same

DR. FREDERICK MONTIZAMBERT,
of Ottawa, Canada,
President of Section in State Medicine.

lasting material; the Biological Building; the new Science Building; the Chemical Building; the Observatory, an old time but perfectly equipped building; and, finally, the new Convocation Hall, a very handsome building, with a seating capacity of two thousand. Between the latter there is a very large and well kept campus. In the rear of the university building there is the usual British quadrangle. The main building encircles three sides of it, the fourth side being enclosed by a neat wire fence. Beyond it there is a cricket and baseball plot of many acres. A fine growth of old time trees makes the sides of the square.

Within the quadrangle a large marquee has been placed for the garden party to be given tonight, Tuesday, by Dr. A. B. Reeve, of Toronto, the new president of the British Medical Association, and by Mrs. Reeve. Fully four thousand will attend. This will complete the first day of the meeting in Toronto. But I have overlooked another garden party, also for this afternoon, that given by the Lieutenant Governor of Ontario and Mrs. Clark, at the Government House.

Tuesday, the opening day, was a red letter one, as well as a hot and humid one. All were eager for work and note books were in evidence.

In the Face of a Common Foe all Mankind is United, such was the text of President Richard Andrews Reeve, president of the British Medical Association, at the official welcome given in the new Convocation Hall in the university grounds.

The large auditorium was draped in flags and banners. The hoods, gowns and the trenchers of the British universities and colleges and those of colonial Great Britain were abundantly in evidence. Academic dress and uniforms were *de rigueur*. Hundreds of ladies, the wives of American and British members and visitors, lent their fair share to the general vista—an ocean of color. Good Dame Nature had her share as well in adding to the color effects. Many of the men in hoods and gowns showed various degrees of facial congestion (no serious results, however). Whether King Solomon in all his glory ever saw anything like it may be questioned.

Among the notables the following may be mentioned: Sir Victor Horsley, London; Sir Hector Cameron, Scotland; Sir Thomas Barien; Sir James Grant, Ottawa; Sir William Hingston, the famous Canadian surgeon, of Montreal; Dr. Mayo, president of the American Medical Association; Dr. Jane Ruthven, of Johannesburg, South Africa, who was loudly welcomed; Professor Aschoff, of Freiburg, Germany; Dr. Lapique, of Paris, and the following delegates from branches of the association: Dr. Ramoro, a Hindu physician, and a professor in the Madras Medical College, who wore a spotless white turban; Dr. Harvey, of Bermuda, and Col. W. J. R. Rainsford, of the Royal Army Medical Corps, Bermuda; Dr. J. E. Godfrey, of British Guiana; Dr. J. M. Atkinson, of Hong Kong; Professor L. Groch, of Malta; Dr. T. G. Roddich, of Montreal, an ex-president of the association, and dean of the medical faculty of McGill University; Dr. Montizambest the well-known hygienist; Dr. William Gardner and Dr. Frank Shepherd, of Montreal; Dr. Ross, of West Virginia; Dr. Moray, of South Australia; Dr. Clarke, of Utica, N. Y.; Dr. A.

DR. F. N. G. STARR,
of Toronto, Canada,
Honorable Local Secretary.

Jacobi and Dr. R. F. Weir, of New York; Dr. McCarroll, of the Association of Military Surgeons of the United States; and Dr. Rastacpri Bardie, of Bombay, India.

This is but a fair specimen of the hundreds and hundreds of the leading men in the world of medicine and surgery who have assembled.

Such a gathering has not before been seen on this side of the Atlantic Ocean. All of twenty-five hundred have assembled. The Anglo-Saxon world in medical science is here.

Sir Victor Horsley, surgeon to the University Hospital, London, addressed a large audience of medical men and medical women, as well as many of the laity at the University Gymnasium on Wednesday. The subject was Alcohol from a Medical and Surgical and Social Standpoint. In an able and interesting introductory statement, he dwelt upon the old time custom of the very free use of alcohol in surgical practice. When he was graduated, it was customary to give a patient three or four ounces of brandy before he was taken into

DR. THOMAS G. RODDICK,
of Montreal, Canada,
President of the British Medical Association, at the meeting at Montreal, 1897.

the operating theatre. The whole theme was handled in a masterful and convincing manner, the conclusions being based upon facts and experience.

By means of a colored diagram he gave the expense accounts of seven of the leading hospitals in London from the time of the zenith of the medical exhibition of alcohol, in 1862, to the time when the milk used cost as much as the alcohol. He indicated where the line intersected on the chart, where the milk account soared and the alcohol descended until 1902, when the hospital funds expended for milk amounted to as much as had been expended for alcohol in 1862, and then the alcohol account was almost nil. He said that the surgeons perhaps would claim the honor of initiating this important change. They, indeed, in common with all practitioners of medicine, were indebted to Lord Lister for the information that had led up to the change.

Years ago the British Medical Association addressed a petition to the government of Great Britain, dwelling upon the necessity of educating the masses upon the subject of hygiene and temperance, urging that the government had a duty to the nation. He also referred to an address sent to the physicians of the United Kingdom, asking for an expression of opinion on the subject of alcohol. The letters were mailed on a Friday evening; on the following Monday five thousand replies had been received and within a fortnight as many as fifteen thousand. Such was the enthusiasm of the practitioners in the old country anent this most important matter. He frequently was interrupted during his address by loud applause and cries of "Hear, hear!" He concluded by stating that the opinion of surgeons and practitioners of medicine was hostile to alcohol.

He was followed by Professor G. Louis Woodhead, a former student of the famous Dr. Muirhead, of Edinburgh. Dr. Woodhead spoke as a medical man as to his extended experience in practice. As a general statement, it was safe to say that alcohol was a discredited favorite in the treatment of disease. Its old time rôle in the treatment of pneumonia and fevers had ceased. To-day we knew that it was a depressing factor, both in health and in disease, and that the habitual user of alcohol greatly impaired his disease resisting powers.

Some time ago, speaking to a brother practitioner in Scotland as to his use of it in a large and successful practice, he had learned that his confrère had not ordered a drop of any alcoholic for seven years, and that in a very large practice.

Surgeons and medical men equally were making a faithful and earnest attempt to solve the knotty question. To order alcohol was to deprive a patient of a fair chance of recovery. Pneumonia in a nonalcoholic to-day practically had no terrors for the attending physician. Rarely, very rarely, alcohol might have some therapeutical value in a nonalcoholic case.

In concluding he made reference to two medical organizations in Great Britain, the British Medical Temperance Association, the Senior and Junior Divisions, the members of which were not pledged men, but were men who were thoroughly alive to their responsibilities as physicians and surgeons. They were daily collecting valuable data. Dr. Woodhead's address met with marked applause.

The addresses carried conviction with them, the value of alcohol as a medical agent was destroyed, surgeons and physicians of the modern scientific school being equally hostile to it.

Sir James Barr gave the address in medicine in the Convocation Hall. There was a large attendance.

A severe storm of thunder, lightning, and rain on Wednesday afternoon interfered with several garden parties. The rain descended in torrents in the evening. The conditions then became bearable.

Wednesday closed with an address in surgery by Sir Victor Horsley, at 8:30, and a reception by the mayor and council of the Corporation of the City of Toronto, in the City Hall, at 9:30.

The succession of events here has been so pleasing and so rapid that there has been a veritable *embarras de richesses.*

Pith of Current Literature.

AMERICAN JOURNAL OF SURGERY.

August, 1906.

1. Malignant and Nonmalignant Growths, By W. S. BAINBRIDGE.
2. The Surgical Treatment of Gonorrhœa in Women, By J. W. BOVÉE.
3. The Sociological Aspects of Gonococcus Infection, By P. A. MORROW.
4. Intussusception, By W. L. ESTES.
5. Bandage for the Stump After Amputation Through the Thigh, By H. M. HAYS.

1. Malignant and Nonmalignant Growths.—Bainbridge recalls the charge that surgeons use the knife in the treatment of cancer when less severe measures would accomplish the desired end. He thinks this is usually an untrue charge, and that both physicians and surgeons are looking for the time when this disease will be treated and cured by medicinal agents. Surgery is discredited with many because of the recurrences which have so often followed its adoption. The fact is too often overlooked that it also has many cures to its credit. The cures are becoming more numerous as cases are seen and operated upon at a period when the disease is still a local one. A series of illustrative cases is narrated demonstrating (1) the precancerous stage, (2) early development, (3) advanced development, (4) irremovable but operable disease, (5) irremovable and inoperable disease which is amenable, however, to operation for relief of secondary conditions.

2. The Surgical Treatment of Gonorrhœa in Women.—Bovée draws the following conclusions: 1. Earnest efforts should be made to cure acute gonorrhœa in women before it has entered the uterus. 2. Nonsurgical treatment is preferable for the treatment of acute gonorrhœal tubal disease, except in those cases in which there is an abundance of pus in the cul de sac. 3. In chronic gonorrhœal pyosalpinx, ablation of the tubes is the best treatment. 4. The vaginal route is preferable to the abdominal, in most cases, for this work. 5. The ovaries should not be sacrificed unless they are hopelessly diseased, or the patient is more than forty years of age. 6. Both tubes should always be removed. 7. The body of the uterus may be retained, if not adherent or considerably involved. 8. Cul de sac drainage is advisable in both vaginal and abdominal ablations.

3. The Sociological Aspects of Gonococcus Infection.—Morrow states that within the past twenty years no coccus has acquired such pathogenic importance as that of Neisser. It causes eighty per cent. of the deaths from inflammatory diseases of the female pelvic organs, and is responsible for fifty per cent. of all gynæcological operations. Gonorrhœa, which is the result of its influence, has a destructive influence upon the procreative function of both sexes, which exceeds that of any other disease. Sterility is due to this cause in fifty per cent. of all cases. The chief social danger from gonorrhœa as a depopulating factor is the secondary or one child sterility which is conditioned by it. Another social danger from gonococcus infection is infantile blindness, twenty to thirty per cent. of all cases of blindness being traceable to this source, the eyes being infected in the process of parturition. Vulvovaginitis in young girls is another serious consequence which may destroy the reproductive apparatus. As an effective prophylactic measure the author urges the dissemination of knowledge in relation to this subject.

4. Intussusception.—Estes defines this as a slipping of a continuous tube within its own lumen. Prompt treatment is imperative, because reduction is usually impracticable on account of agglutination of the peritoneal layers, and ulceration, perforation, and sloughing of the invagination. Four varieties may be distinguished, ileocæcal, enteric, colic, ileocolic, and appendcocæcal. Its predisposing causes are age, intestinal indigestion, improper feeding, long mesentery, and malformations. Its symptoms are sudden pain, diarrhœa with blood and mucus, tenesmus, absence of fever, distention of abdomen, intermittent pains, tumor, symptoms of intestinal obstruction, and leucocytosis. The diagnosis is usually not difficult. Volvulus and appendicitis must be excluded. Opium or belladonna may be given in some form to relieve the pain. An operation should be performed within four hours of the occurrence of the accident, if possible.

REVUE DE MEDECINE

July, 1906.

1. Is There a Diabetes of Suprarenal Origin? By R. LÉPINE.
2. Tuberculosis in Its Relation to the Insane, By MARIE.
3. The Physical and Moral Antipathies in the Families of Degenerates, By C. FÉRÉ.
4. Spinal Syphilis of the Amyotrophic Variety, By M. LANNOIS and A. POROT.
5. Clinical Considerations on the Diuretic Therapy at Evian, By COTTEL.
6. Emotional Icterus in a Pregnant Woman, By A. A. LAMBRIOR.
7. Cancer of the Rectum with Perforation of the Intestine Above and Outside the Neoplastic Tissue, By G. TOLOT.

1. Is There a Diabetes of Suprarenal Origin?—Lépine reports the case of a woman diabetic more than two years, with very severe symptoms for the last few months of life. The day of her death the urine contained nine grammes of sugar per litre. There was also hyperglycæmia, and thirty-six hours after death the blood showed two grammes of sugar per litre. The right suprarenal capsule was the seat of a large tumor. It was evidently not of recent origin, and after a careful autopsy no other cause for the diabetes could be discovered. But one other case of the kind has been recorded and that is doubtful. The author is rather doubtful whether sufficient adrenalin would be secreted to cause diabetes.

2. Tuberculosis in Its Relations to the Insane.—Marie finds that the special causes for the frequency of tuberculosis in asyla for the insane are: 1. Overcrowding with insufficiency of air by day as well as by night. 2. Insufficient exercise in the open air. 3. Defective heating and ventilation. 4. Uncleanly habits and dirty clothing. 5. Faults in the alimentary regimen. The means which he advises for prevention are: 1. An early diagnosis of the approach of the disease. 2. Isolation of all patients suffering with phthisis. 3. The construction for the future of smaller asylums for the insane. 4. Proper measures to prevent crowding. 5. Increase in the air provision by day and night. 6. Diminution in the number of beds in the dormitories. 7. More complete and more efficient ventilation. 8. Very severe measures to prevent extension of the disease by means of the sputa. 9. Very careful regulation of the diet. 10. Special hospitals and sanatoria with extensive grounds with provisions for isolating patients and treating them along the lines of modern therapy. 11. In the absence of such hospitals and sanatoria all necessary measures for practical and effective isolation of the individual.

3. The Physical and Moral Antipathies in the Families of Degenerates.—Féré finds these antipathies allied to organic conditions like psychical troubles in general. The effects of local organic conditions are noticeable only upon a special neuropathic temperament, which is sometimes united to a special constitution, and sometimes is characterized by somatic stigmata of degeneration. The observations of Head have shown that among hysterical persons psychicla symptoms are connected with visceral affections, but the hysterical person has a special temperament which is sometimes characterized by somatic stigmata. These somatic antipathies in cer-

tain women may be associated with incompatibility between their lacteal secretion and the digestive apparatus of their children. In such cases the maternal milk acts as a poison upon new born infants.

BOSTON MEDICAL AND SURGICAL JOURNAL.

August 16, 1906.

1. Two Cases of Gastrosuccorrhœa or Gastric Hypersecretion Associated with Atrophic Cirrhosis of the Liver, By HENRY F. HEWES.
2. The Serum Treatment of Exophthalmic Goitre, By G. A. WATERMAN.
3. Introduction to the Study of the Fundamental Cause of Splanchnoptosis. Abdominal Incompetence: A Developmental Factor (*Concluded*), By AGNES C. VIETOR.
4. Incontinence of the Urine, By CHARLES GILMORE KERLEY.

1. Two Cases of Gastrosuccorrhœa or Gastric Hypersecretion Associated with Atrophic Cirrhosis of the Liver.—Hewes reports two unusual cases of gastrosuccorrhœa or hypersecretion of the stomach. The special points of interest in connection with the cases were the following: (1) The cases represented, in their special symptomatology, the history of the symptoms and the character of the findings revealed by the examination of the contents of the stomach, typical cases of gastrosuccorrhœa, one of continuous hypersecretion, the other of intermittent or periodic hypersecretion. (2) The special pathological conditions of the stomach, with which hypersecretion such as was present in these cases is ordinarily associated, that is, which most frequently prove to be the primary causes of hypersecretion, gastrectasis, or ulcer of the stomach, were not present in these cases. This fact was proved in the first case, that of continuous hypersecretion, by the findings at autopsy in addition to the results of clinical examination. In the second case it was indicated by the results of clinical examination. (3) The pathological condition of cirrhosis of the liver was present in both cases. In the first case atrophic cirrhosis of advanced degree was found at autopsy. In the second case the diagnosis of cirrhosis was based upon the finding of an enlarged liver plus the marked alcoholic history of the patient.

2. The Serum Treatment of Exophthalmic Goitre.—Waterman says that the generally accepted theory at the present day and the one upheld by Moebius, is that the symptoms of the disease are caused by excessive secretion of the thyreoid gland. In favor of this hypothesis is the evidence that, (1) in most cases of exophthalmic goitre the thyreoid gland is enlarged; (2) that partial excision of the gland in patients suffering from the disease so often results in a cure; and (3) that the administration of thyreoid in sufficiently large doses to healthy individuals may give rise to most of the characteristic symptoms of the disease. In experimenting on animals, too, these symptoms have been artificially produced. Among the most popular methods of treatment, the author mentions arsenic, potassium iodide, quinine bromide, sodium phosphate, intestinal antiseptic, faradism, galvanism, and the x ray. But, accepting the theory of hyperthyreoidization as the cause of exophthalmic goitre, the rational method of treatment would seem to be that of serum therapy. The writer gives his experience of this serum therapy in five cases; of these, two he considered as cured, two improved, and one unimproved.

4. Incontinence of the Urine.—Kerley reminds us that the involuntary discharge of urine is normal in the young infant. It becomes a voluntary function at a later age, the time depending largely upon the child's training. In most children with the right kind of management it may be controlled during the waking hours by the tenth month. During sleep it continues to a later period, and while in many cases it may be under perfect control, at the completion of the second year he does not regard the loss of control as abnormal until the third year is completed. If during the second year the child shows a tendency to frequent urination and involuntary passage of urine during the waking hours with habitual incontinence at night, preventive measures should be adopted. There may be anatomical or physiological abnormalities, such as a vaginitis, an adherent clitoris in girls, phimosis in boys, thread worms in the rectum, constipation, stone in the bladder, cystitis—a very rare condition—and hyperacidity of the urine—a very common one. The diet may play a part. The use of highly nitrogenous food in large amounts, or a diet rich in sugar may lead to changes in the urine sufficient to cause the trouble. The presence of adenoid growths in the nasopharyngeal vault is supposed by some writers to cause enuresis. As a result of the diurnal and nocturnal incontinence, the bladder may never have developed and its capacity may be greatly reduced. Obviously, when such is the case, incontinence will be noted both day and night. After all possible dietetic and peripheral causes have been eliminated, about ninety per cent. of the cases remain. These are due to a neurosis, and are not dependent upon any discoverable pathological condition, and should be treated accordingly: A light, dry supper; early retiring; to be awakened during the night to urinate; lightly covered at night; sleeping, if possible, on the right side. Among the drugs the author mentions atropine; while in weak, poorly nourished children strychnine may be added to iron or oil tonics.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

August 18, 1906.

1. Tumors of the Carotid Gland (*To be Continued*), By W. W. KEEN and JOHN FUNKE.
2. Congenital Cystic Kidney. By F. B. LUND.
3. Ophthalmic Practice of the Present Time, By FRANCIS VALK.
4. Conjugate Lateral Deviation, By J. H. CLAIBORNE.
5. Acute Lymphatic Leucæmia. Some Clinical Observations in a Case Suggesting Infection as an Ætiological Factor, By PHILIP MARVEL.
6. The Relation of Excessive Gastric Acidity to Gastric Symptoms. By DUTTON STEELE.
7. Antitetanic Serum in Fourth of July Injuries, By H. J. SCHERCK.
8. Ethyl Chlorid as a General Anæsthetic in Minor Operations, By GEORGE F. HAWLEY.

2. Congenital Cystic Kidney.—Lund describes seven cases of congenital cystic kidney, and draws the conclusion that: If there be sufficient healthy tissue between the cysts to perform the normal renal functions the disease may never attract attention, and the patient may live a normal life and die of disease independent of the kidneys. Under the same conditions as to renal tissue, while the renal excretion is normal, the cysts may cause pain and discomfort from their size and weight without dangerous symptoms for years. Mobility of the kidney, with its accompanying troubles, may result from this enlargement. The growth and enlargement of the cysts may so strangulate and compress the normal kidney tissue between them as to throw it out of commission, so that stasis and uræmia may result. The normal tissue between the cysts may become affected by the various forms of nephritis, just as healthy kidney may, and this nephritis may be fatal in itself or by reason of the cardiac and arterial changes which accompany it. These same cardiac and renal changes may and do accompany the compression of the intervening tissue by the cysts, and are not an infrequent cause of death in these cases. The surgical aspects of the disease relate to the pain and discomfort due to the size of the tumors or mobility resulting from them, and in operating for these conditions it is all important to remember the pathology of the disease and more especially the fact that it is bilateral in ninety-eight per cent. of the cases. A cystic kidney, while causing pain and disability by its enlargement, may still be perform-

ing so large a part in urinary excretion that its removal would be dangerous to life from renal insufficiency. It, therefore, becomes important if possible to take some means to diminish the size of the offending organ and anchor it in place without interfering with its secreting functions. Such a procedure, which will be vastly safer than nephrectomy, consists of the free incision and puncture of the larger cysts, thus diminishing notably the size of the kidney, and suturing of the organ in position. If for any reason a nephrectomy seems desirable it should not be performed unless an exploratory incision or ureteral catheterization has demonstrated that the other kidney is healthy.

3. **Ophthalmic Practice of the Present Time.**—Valks takes issue with G. M. Gould, for some of his statements and ideas, as set forth in a paper contribuated to the *Medical Record* of September 30, 1905.

5. **Acute Lymphatic Leucæmia. Some Clinical Observations in a Case Suggesting Infection as an Ætiological Factor.**—Marvel remarks that the ætiology of leucæmia still remains in doubt. He reports a case in which the diagnosis of lymphatic leucæmia was supported by the following observations: The rapidly progressing anæmia, leucocytosis with conspicuous preponderance of lymphocytes, general debility, pathogenic change in the lymphatic glands, enlargement of the spleen, liver, and thyreoids, early appearance of petechiæ, ecchymotic or purpuric areas, hæmorrhagic dyscrasia, gastrointestinal irritation and, in the latter part of the illness, profuse sweating. The clinical evidences pointing to infection in this case, says the author, are strikingly similar to those recognized in scurvy (which of late is admitted by some authors to be an infectious disease), as well as in the sepsis and other bacterial diseases, and a review of the cases of acute lymphatic leucæmia shows a remarkably large percentage of tonsillitis associated with the earlier symptoms of the disease, though hitherto not considered important. The writer thinks that following the acute streptococcic tonsillitis, occurring as the earliest definite manifestation in his case, if not the immediately causative factor, the streptococci or their toxines had much to do with the pathogenic change and subsequent behavior of the lymphatic and blood tissues and incidentally with the serious metabolic disturbance, functional failure, and death which followed.

8. **Ethyl Chlorid as a General Anæsthetic in Minor Operations.**—Hawley reviews the history of ethyl chlorid as a general anæsthetic in minor operations, and states that after several years of more or less constant use of ethyl chlorid, both in clinical and private practice he has still to see the first case in which it has caused him the slightest uneasiness. The following precautions should be observed: (1) The patient should be prepared as for chloroform or ether; (2) whatever mask is used it should fit the face snugly; (3) a graduated tube with a large aperture should be used; (4) the anæsthetic should be well supplied with air and as little given as possible; (5) care should be taken not to present it at first in too large a quantity, frequently a drachm is quite sufficient for short operations; (6) the patient should rest a while after its administration, as faintness sometimes supervenes; (7) a mask should be used which does not receive the drug close to the patient's face; otherwise one is liable either to freeze the face of the patient or to cause asphyxia by the moisture from the expired air freezing on the gauze in the mask and thus preventing the free passage of air to the patient. The use of ethyl chloride has the following advantages: 1, Safety in administering; 2, ease of administration; 3, it rapidly produces surgical anæsthesia; 4, it can be used where chloroform or ether would be contraindicated; 5, the patient can be kept in any position during anæsthesia, upright or prone; 6, no cyanosis need occur during administration; 7, the patient recovers promptly without after effects; 8, it is inexpensive; 9, it can be used for long or short operations with equal success; 10, it is especially useful as a preliminary to other anæsthetics, decreasing the time required for the production of anæsthesia and avoiding shock and discomfort to the patient.

MEDICAL RECORD.

August 18, 1906.

1. Medical Education and Medical Progress, By George R. Grant.
2. The Insane Lovers, By John W. Stevens.
3. Medical Inspection in Public Schools, By Inez C. Philbrick.
4. Removal of an Intraligamentary Cyst and Bilateral Oophorectomy During Early Pregnancy Without Interrupting Gestation, By Abram Brothers.
5. A Contribution to the Ætiology of Otitis Media Acuta Suppurativa Post Morbillos, By Gustav Baar.

2. **The Insane Lovers.**—Stevens describes "the insane lovers," not uncommon in asylums and neurological practice. They do not in themselves constitute a separate clinical entity, but come from the ranks of the victims of three great mental diseases—paranoia, dementia præcox, and manic depressive insanity, this insane love being but a prominent symptom. In paresis and senility, and possibly in some other deterioration processes, we sometimes meet with a condition approximating this in certain features. The paranoid class.—Here the love is a part of the symmetrized delusional state that goes to make up the clinical picture of paranoia. This psychosis is a disease of early adult life, usually making its appearance during the third decade, though in a small number of cases not before the involutional period. It develops upon a defective constitutional basis, congenital or acquired, as manifested through the presence of the stigmata of degeneracy, both psychical and physical. Dementia præcox.—Occasional example of the lovers are found in this class here. In the paranoid type of the disease cases may be met resembling in a superficial way the true paranoiac lover. There is usually a degenerate basis. A delusion arises that he is to wed, or is already wedded to an heiress, popular actress, or other woman, and hallucinations, which are usually very active, confirm his belief and direct his conduct. He may seek to reach his loved one. Restrained from doing so, he manifests no strong feeling either of disappointment or resentment. He makes no special resistance when detained, and in an indifferent sort of way details his delusions. These will be found to be of a silly and absurd character, and with little or no system. Hallucinations are usually a prominent symptom. The manic depressive insanity.—Here the love is rarely a true delusional condition as it is in the paranoid states, and is present only during the existence of the manic symptoms, disappearing in the normal intervals. It finds its origin in the eroticism, the patient's tendency to tumultous over responsiveness to stimuli, and the lack of restraining ethical sensibilities in the presence of the elation and self approbation characteristic of this disease. The tendency of the manic patient in all things is to an immediate response to his every impulse, and the restraining influence of a calm judgment is lacking. This is manifested in his many whims and vagaries, foolish pranks and doings, restless activity and multitude of new schemes, unstable emotional attitude, and over susceptibility to suggestion.

4. **Removal of an Intraligamentary Cyst and Bilateral Oophorectomy During Early Pregnancy Without Interrupting Gestation.**—Brothers reports an operation upon a pregnant woman, removing by suprapubic transverse incision a cyst. He reports this case in order to emphasize three features of interest, all of which may be of practical value: 1. The comparatively small

risk of doing intraperitoneal surgery on the pregnant woman. 2. The value of the transverse incision in order to guard against hernia in cases of progressive pregnancy. 3. The practically complete removal of both ovaries was not followed by disturbance of the impregnated ovum.

5. **A Contribution to the Ætiology of Otitis Media Acuta Suppurativa Post Morbillos.**—Baar describes a case of measles, occurring in five children of the same family. It was very remarkable that in all of them there appeared an acute suppurative otitis media and not in a mild form. In three of these children the mastoid process, the antrum, and the cranial cavity, respectively, had to be opened on account of alarming cerebral symptoms which appeared in spite of the previous most painstaking antiphlogistic and antiseptic treatment, poultices, and drainage after careful irrigations of the exterior auditory meatus with warm solution of borax or instillation with peroxide hydrogen and drying. The appearance of this purulent inflammation of the middle ear, says the author, at the end of the second week of illness, seems to speak very much against the universal view, according to which the measles otitides are caused by the primary exanthem. The fact that in the pus taken from the depth of the exterior auditory meatus as well as in the pus taken under aseptic precautions during the operation from the antrum, mastoid process, and extradural abscesses, was found the same coccus—a staphylococcus—shows the latter to be the cause of the disease. Whether the infection with the staphylococcus was facilitated through lack of the proper care of the mouth or through the sudden emigrating of these children from a place situated at a height of 8,000 feet to one of only 100 feet, cannot be decided.

BRITISH MEDICAL JOURNAL.

August 4, 1906.

1. A Short Summary of the Development of the Treatment of Uterine Fibromyomata Within the Last Twenty-five Years, with a Record of Over One Hundred Consecutive Successful Cases of Supravaginal Hysterectomy, By F. W. M. HAULTAIN.
2. A Lecture on Dysmenorrhœa, By A. ROUTH.
3. A Series of Fifty Consecutive Abdomnial Sections, By R. P. R. LYLE.
4. Midwifery Experiences: A Record of Forty-seven Years' Work, By J. LINDSAY.
5. The Evaporation of Chloroform During Inhalation. An Inquiry Into the Facilities of Regulating with Greater Accuracy the Strength of the Vapor Evaporated from Woven Fabrics, By A. G. LEVY.
6. Landry's Paralysis, By E. MACNAMARA and J. BERNSTEIN.
7. Notes on a Case of Fissura Abdominalis: Operation at Age of Two and a Half Hours, By H. STEVENSON.
8. Ascaris Lumbricoides as a Cause of Appendicitis, By A. CASTELLANI.

1. **Treatment of Uterine Fibromyomata.**—Haultain states that the treatment of uterine fibromyomata may be divided into electrical and surgical. Medicinal means are obsolete. Electrical treatment has fallen into undeserved disuse. Many cases are not only temporarily benefited and thus tided over till the menopause, but also are completely cured. A current of less than eighty milliampères cannot be expected to have effect on a fibroid growth, and anything between that and one hundred and twenty milliampères may be given with the utmost safety. The surgical treatment may be divided into: 1. Removal of the uterine appendages. This has had its day, and was only valuable before the more radical operative measures were perfected. 2. Removal of the tumor; and 3, removal of the uterus and tumor. These now hold the field as practically the only surgical procedure. They may be done either abdominally or vaginally. The former is much more dangerous. The author uses the supravaginal method and has a record of two hundred and three cases, with two deaths; a consecutive series of one hundred and nine cases were successful. One death was due to embolism, and the other occurred in a patient suffering from marked anæmia. Panhysterectomy has little to recommend it, except that it is an efficient bar to subsequent cervical cancer. Instead of condemning ninety per cent. of women suffering from uterine fibromyomata to a life of semiinvalidism till the climacteric arrives only partly to relieve their sufferings, we are now able to offer a certain prospect of cure to at least ninety-five per cent.

2. **Dysmenorrhœa.**—Routh states that dysmenorrhœa is a symptom, not a disease; its cause must be ascertained and treated. The various types of pain are classified as follows: I. Painful uterine contractions. (a) Obstructive dysmenorrhœa; this may be: (1) Absolute; this is a very rare condition, whether congenital or acquired. (2) Partial; due to a partially occluded cervix, the result of a faulty operation, or to cauterization. (3) Relative; due to the presence of clots in cases of subinvolution and retroversion, where there is a bulky, feebly contractile uterine body. (b) Spasmodic dysmenorrhœa. Here the pain comes on before the flow, and is intermittent in type. It is probably due to spasm of the cervical sphincter, caused in turn by persistent infantile characteristics, the presence of a small fibroid, an overloaded rectum, etc. II. Congestive dysmenorrhœa. (a) True pelvic congestion. This may be due to displacement of the pelvic viscera, to tumors of the uterus, ovaries, or tubes, or to venous engorgement of cardiac, pulmonary (or hepatic) origin. As a result there is an increase of the normal vascular tension during menstruation. The patients are usually heavy dull women of lethargic habits. (b) Pelvic inflammation. Here there has been preceding pelvic inflammation as a result of which either the venous return of the blood is interfered with by means of adhesions, or the uterus is displaced or rendered immobile by cicatricial bands. III. Ovarian dysmenorrhœa. Occasionally the maturation and escape of the ripened ovum from the ovary is accompanied with difficulty and pain, due to thickening of the capsule or adherence of the ovary. If ovulation should not occur concomitantly with the menstrual cycle, this ovarian dysmenorrhœa causes an intermenstrual dysmenorrhœa called "Mittelschmerz," with which there is usually a more or less profuse mucopurulent or watery discharge. *Treatment.* True obstructive cases must be treated by temporary relief of the symptoms. Complete obstruction calls for incision, partial or relative obstruction for dilatation. In the spasmodic form, general medicinal treatment is called for, the bowels and skin must be attended to, and iron given in the anæmic cases. Alcohol, opium, or chloral should never be given. Dilatation of the cervix may eventually be called for. In congestive dysmenorrhœa cannabis indica often works well. Efforts should be directed towards encouragement of the flow, and to relieve the congestion by acting on the other excretory organs. Any uterine displacement must be manually rectified, and a pessary inserted if necessary. When the pain is due to old inflammation operation may become necessary. Ovarian dysmenorrhœa is treated by means of sedatives (especially bromides) and the relief of congestion. Operative treatment is unsatisfactory.

3. **Abdominal Section.**—Lyle's paper is based on a series of fifty consecutive cases of abdominal section. Attention to the following points is necessary to secure good results: 1. A correct preliminary diagnosis. 2. Simplicity in operative technique. 3. The simplest antiseptic preparations combined with asepsis. 4. The use of few surgical instruments and appliances. 5. Limited

abdominal incisions. 6. The correct adjustment of all cut peritoneal surfaces. 7. The complete closure of the abdominal cavity without drainage of any kind. 8. The free use of normal saline solution in cases where purulent material gets accidentally spilled in the pelvis or abdomen during the performance of an operation.

LANCET.

August 4, 1906.

1. The Pathology—Past and Present—of Skin Diseases, By G. S. Woodhead.
2. Removal of a Cerebral Tumor (Endothelioma) Which Had Invaded the Overlying Cranial Bone. With an Account of the Pathology of the Tumor, By H. G. Barling and R. F. C. Leith.
3. Blood Pressure and Pigmentation in Addison's Disease, By A. R. Short.
4. The Appointment of Qualified Women, with Special Reference to the Hygiene and Feeding of Infants, By J. S. Cameron.
5. Caterpillar Rash, By J. C. Thresh.
6. On Some of the Pseudoparasites of Cancer, By A. S. Grünbaum.
7. A Case of Acute Rheumatism; Hyperpyrexia; Recovery, By E. B. Smith.
8. A Note on the Treatment of Catarrhal and Gangrenous Dysentery, By C. B. S. Amos.

3. **Addison's Disease.**—Short reports a case of Addison's disease occurring in a man, thirty years of age, in which good results followed the use of digitaline. The blood pressure in Addison's disease is perhaps lower than in any other chronic condition. In the case here reported it was only seventy-five millimetres of mercury. The explanation of this low blood pressure is that the adrenalin normally supplied by the suprarenal glands is in these cases very deficient or absent. A most important effect of the adrenalin continually furnished to the blood stream is to raise or maintain the blood pressure by constricting the arteries and arterioles. Its action on unstriped muscle is the same as that obtained by stimulating the corresponding sympathetic nerve, and adrenalin may possibly be regarded as the normal pabulum for sympathetic nerve terminals, enabling them to fulfil their functions. On this hypothesis Addison's disease presents a symptom complex equivalent to a paralysis of the sympathetic nerve terminals. To the vasomotor relaxation thus produced the symptoms of Addison's disease are due: The asthenia, the characteristic faintness on sitting up, the soft pulse, and the susceptibility to cold. The author believes that the pigmentation of the skin is due to increased function of the pigment cells in consequence of the relaxation of the bloodvessels supplying them. In support of this new theory he brings forward the following arguments: (a) Local vascular relaxation causes local pigmentation, as seen in the skin around chronic ulcers, in the vagina and breasts in pregnancy, and in the lungs in chronic heart disease. (b) General vascular relaxation causes general pigmentation in other conditions besides Addison's disease; among them may be mentioned advanced pulmonary tuberculosis, tuberculous peritonitis, malignant disease of the abdomen, and pernicious anæmia. The one feature common to all these conditions is either a low general blood pressure or evidence of vascular dilatation in the skin extending over some months. If all the symptoms of Addison's disease depend upon vasomotor relaxation then the treatment should be to constrict the arterioles and to raise the blood pressure. Adrenalin does this, but only temporarily. Digitaline was tried in the case here reported and acted very satisfactorily. With no other special treatment the blood pressure rose to 155 millimetres of mercury. On discontinuance of the digitaline for a few months, it again fell, and a second course of digitaline had to be given.

6. **Pseudoparasites of Cancer.**—Grünbaum roughly classifies the pseudoparasites of cancer (*i. e.,* those likely to be mistaken for true parasites) as resulting from (a) cell degeneration; (b) cell inclusion of leucocytes or other cells; (c) cell derivatives, *e. g.,* the spermatid vesicle; and (d) nonspecific organisms. Cell degeneration may affect either the cytoplasm or the nucleus and nucleolus, or all. Under favorable circumstances every stage from mere shrinkage of the cytoplasm from the cell wall to the formation of a hyaline mass of chromatin within a vacuole may be observed. Cell inclusion. Leucocytes may become included, and their cytoplasm and even their chromatin fuse with the corresponding constituents of cancer cells. They are especially prevalent in the dividing cells of young tumors. The number of such ingested leucocytes is much greater where inflammation accompanies the new growth—*i. e.,* in epithelial than in glandular tumors. Not uncommon are cancer cells included within other cancer cells. This process of inclusion explains the large size of some cancer cells, and also the occurrence of hyperchromatosis. Cell derivatives. Here are included those vesicular bodies, sometimes termed bird's eye bodies, which correspond to the vesicles of the spermatid archoplasm. Nonspecific parasites. Yeast cells have been noted in the lung of a mouse fed on a blastomycete isolated from a human mammary cancer.

8. **Dysentery.**—Amos has arrived at the following conclusions as regards the treatment of dysentery. The simple catarrhal form, with a history of diarrhœa for one day, and then frequent, very scanty, mucous, bloody stools without fæces, yields readily to four grammes of sodium sulphate administered hourly until a fæcal stool is passed. This should be continued on successive days until tenesmus disappears. In the severe gangrenous form good results follow Manson's method. No food is given from midnight to four a. m., and twenty drops of laudanum are given, and half an hour later between two and four grammes ipecachuana in capsules. No food or drink is given until seven a. m. Peritonitis is the most serious complication, and then heart failure and pneumonia. Injections are only useful in chronic cases.

BERLINER KLINISCHE WOCHENSCHRIFT.

July 16, 1906.

1. The Treatment of Puerperal Fever with Antistreptococcic Serum, By E. Martin.
2. The Action of the Four Cell Bath on the Blood Pressure, By M. Hirsch.
3. Fat and Carbohydrates, By G. Rosenfeld.
4. The Early Bacterioscopic Diagnosis of Pulmonary Tuburculosis, By C. A. Blume.
5. Modern Surgery of the Kidney, Diagnosis, and Results (*Concluded*), By H. Kümmell.
6. Removal of Dust, By U. Friedmann.

1. **Treatment of Puerperal Fever.**—Martin reports the results obtained by the treatment of puerperal fever with the antistreptococcic serum at the lying-in hospital at Greifswald. The material was insufficient to determine conclusively whether this treatment helps or not, but these results indicate that it is of service.

4. **Early Diagnosis of Pulmonary Tuberculosis.**—Blume reports several cases in which the diagnosis of pulmonary tuberculosis was made bacteriologically before the appearance of a cough or expectoration.

5. **Modern Surgery of the Kidney.**—Kümmell concludes from his studies in regard to cryoscopy that: (1) In intact kidneys the molecular concentration of the blood is constant and corresponds to an average freezing point of 0.56°. In anæmic persons it may be 0.55°, 0.53°, or 0.52°. (2) Monolateral disease does not affect the freezing point of the blood. (3) The normal freezing point, 0.56°, indicates only that a sufficient quantity of normally functionating kidney tissue

is present for the complete excretion of the products of metabolism. (4) A lower freezing point of the blood shows that both kidneys are affected and are not performing their full functions. When it sinks to 0.6° nephrectomy should be avoided, and nephrotomy alone be performed, after which nephrectomy should be considered only after the freezing point has risen again to normal.

MUENCHENER MEDIZINISCHE WOCHENSCHRIFT

July 24, 1906.

1. The Value of Disinfection with Hot Water and Alcohol in Obstetrics and as a Protection for Wounds of the Abdomen, By OTTO VON HERFF.
2. Treatment of Infantile Spinal Paralysis, By OSCAR VULPIUS.
3. "Regulin" Treatment of Chronic, Habitual Constipation, By WILHELM VOIT.
4. Diphtheria, By GOTTLIEB SALUS.
5. Allergie, By C. VON PIRQUET.
6. Forms and Causes of Infantilismus, By Professor G. ANTON.
7. Westphal's Phenomenon in Croupous Pneumonia in Children, By NIKOS A. KEPHALLINOS.
8. Poppy Capsules, By TISCHLER.
9. A Case of Bilateral Paralysis of the Abducens Associated with Extraordinarily Severe and Persistent Pain in the Neck After Spinal Anæsthesia, By M. LANDOW.
10. Two Cases of Epidemic Cerebrospinal Meningitis. By BROER.
11. Measurements of the Blood Pressure, By B. FELLNER and C. RÜDINGER.
12. Electrotherapy in Circulatory Diseases, By LUDWIG RAAB.
13. Fritz Schaudinn. By RICHARD HERTWIG.
14. How Should Objects for Examination be Transmitted? By Professor DÜRCK.
15. The Relation Between Cancer and Tuberculosis, By WILHELM WEINBERG.

1. Disinfection with Hot Water and Alcohol in Obstetrics.—Von Herff strongly advocates the use of hot water and alcohol for cleansing in obstetric cases on account of its certainty and comparative simplicity, as demonstrated at the lying in hospital at Basle. He also finds the same application an efficient protective in wounds.

3. Regulin for Constipation.—Voit reports five cases in which he has treated obstinate constipation with regulin and obtained excellent results.

5. Allergie.—Von Piquet proposes this word as a name for the changed condition of the system produced by the inoculation of a lymph by means of which its ability to react to a certain disease has been altered.

6. Infantilismus.—Anton means by infantilismus the faulty development of the organism in puberty as the result of various diseases during childhood. General infantilismus he divides into (a) infantilismus with myxœdema and with cretinism; (b) mongolismus; (c) absence or atrophy of the genital organs; (d) infantilismus with primary disease of other visceral glands, such as the suprarenal capsules, the thymus, and the pancreas; (e) dystrophic infantilismus of several ætiological varieties. Partial infantilismus he divides into (a) infantilismus dependent on atrophy of the sexual organs; (b) infantilismus with a faulty cardiovascular system; (c) maintenance of the infantile voice and vocal organs; (d) absence of beard and of hair on the pubes; (e) purely psychical infantilismus.

7. Westphal's Phenomenon in Croupous Pneumonia in Children.—Kephallinos says that the absence or reduction of the patellar reflex is a symptom which frequently accompanies the early stage of croupous pneumonia in children, and in positive cases with other indications, is a very valuable diagnostic sign.

9. Paralysis of the Abducens Following Spinal Anæsthesia.—Landow reports a case in which he operated on a man, fifty-three years old, for hæmorrhoids and fistula under spinal anæsthesia produced by the injection of a solution containing 0.001 of scopolamine and 0.025 of morphine. This was followed by excruciating pain in the neck which persisted for a long time, and paralysis of both abducens appeared seven days after the operation.

15. Relation Between Cancer and Tuberculosis.—Weinberg states that the supposed relationship between cancer and tuberculosis rests upon (a) the simultaneous presence of the two diseases in different organs of the same individual; (b) the presence of tuberculous processes in cancers and sarcomata, and the beginning of cancers on the site of old, partly healed tuberculous ulcers, such as lupus; (c) the frequent hereditary predisposition to cancer and tuberculosis in one and the same family.

July 31, 1906.

1. The Preservation of the Sphincter in Extirpation of Cancer of the Rectum, By Professor P. POPPERT.
2. Proteolytic Ferment Actions of the Leucocytes, By EDUARD MÜLLER and GEORG JOCHMANN.
3. Two Cases of Cerebral Hemiplegia in Young Children, By H. WICHERN.
4. A New Apparatus for the Hyperæmia Treatment of the Head, By VON SCHMIEDEN.
5. An Improved Way of Presenting the Spirochæta Pallida, By Professor E. HOFFMANN and A. HALLE.
6. How Can the General Practitioner Carry Out the Gymnastic Treatment of Joint Contractures? By GEORG HOHMANN.
7. Displacement of the Trachea in Intrathoracic Diseases, By A. GRÖBER.
8. The Use of Solutions of Formalin in Uhlenbuth's Examination of the Blood, By HERMAN MERKEL.
9. A Case of Bacteriæmia Which Ran Its Course Without Symptoms, By HERMANN KÜNZEL.
10. The Practical Value of Permanent Measurement, By E. OERTMANN.
11. Notes on the Action of Viferral, By CARL MACKH.
12. A Case of Artificially Produced Emphysema of the Skin, By P. PREGOWSKI.
13. Phlegmon as a Complication of Varicella, By R. KREUZEDER.
14. Orthocystoskopy, By JULIUS WEINBERG.
15. Plastic Röntgen Pictures, By ALBERT E. STEIN.

1. Preservation of the Sphincter in Removal of Cancer of the Rectum.—Poppert, after a consideration of the statistics and literature on this subject, some of which favor amputation, some resection of the rectum when the sphincter is not involved, concludes that it is not right to interfere needlessly with a sound sphincter.

3. Cerebral Hemiplegia in Young Children.—Wichern reports a case in which a child, two and a half years old, recovered from diphtheria, but succumbed to an embolism of the artery in the left Sylvian fossa, which had caused a right hemiparesis. He also reports another case in which a child, five years old, had an attack of whooping cough during which a temporary hemiplegia appeared.

11. Action of Viferral.—Mackh reports very briefly a number of cases in which he has used viferral as a hypnotic with good results, particularly in cases in which there was severe pain or temperature of over 39°. It was of especially good service in rheumatism and neuralgia when given two hours before aspirin.

12. Artificial Emphysema of the Skin.—Pregowski details some experiments which he made on himself to determine the effect produced on the sensibility of the skin by a subcutaneous emphysema. The entire quantity of air was absorbed in a week. It caused a slight rise in temperature, headache, and a general ill feeling.

13. Varicella Complicated by a Phlegmon.—Kreuzeder reports a case of varicella which was led to a fatal termination by the occurrence of a phlegmon in the axilla.

GAZZETTA DEGLI OSPEDALI E DELLE CLINICHE.

July 22, 1906.

1. The Buccal Reflex, By A. Perugia and A. Bagolan.
2. Contribution to the Pathogenesis of Pertussis, By Luigi Chierici.
3. Anuria and Singultus Due to Hysteria, By L. Confalonieri.
4. The Diagnosis of Foreign Bodies in the Nose, By Vittorio de Cignia.
5. The Practical Applications of Hypodermoclysis, By G. Zanoni.
6. The Determination of the Acuteness of Vision in a Case of Linear Leucoma Due to Injury, By Egisto Curti.

1. Buccal Reflex.—Perugia and Bagolan examined 621 insane patients (400 men and 221 women), with the view of establishing the frequency of the buccal reflex in these cases. This reflex was first described by Thomson, who observed it in normal children during sleep. On gently tapping the corners of the mouth a sucking movement of the lips was produced in such children. The theoretical basis of this reflex has been variously interpreted. Toulouse and Vurpas reported that the buccal reflex, while normal in childhood is absent in adults, save in certain pathological conditions, as in senile dementia, idiocy, alcoholism, etc. The present authors used a small percussion hammer with which they tapped gently either the oral commissures or the sulcus over the upper lip. In some cases they obtained a contraction of the upper lip, in others of the orbicularis (including both lips), and still in other cases a movement of the lips resembling the act of sucking. The buccal reflex was found present in 60.54 per cent. of all the patients examined. It was never present in normal adults; was rarely seen in children between the ages of three and six years; and was comparatively frequent after sixty years of age. Both in aged insane and in mentally normal old people it was more frequent in men than in women. The buccal reflex, however, did not bear any relation to the type of mental disease present, and when the reflex was well marked, an exaggeration of the tendon reflexes was always observed.

2. Adenoids and Whooping Cough.—Chierici removed adenoid growths from the throats of two children affected with whooping cough, and saw a rapid improvement in the cough almost immediately after the operations. According to his view, pertussis is a local infection of the pharynx which gives rise to phenomena of intoxication due to the absorption of poisons from the germs so located into the general system. To remove the nest of germs therefore is rational treatment, and hence the curetting of adenoids is bound to have a beneficial effect in pertussis. A larger number of cases is, of course, needed to prove this contention.

4. A Shoe Button in the Nose for Two Years.—De Cignia relates the case of a child of seven years who had retained a shoe button in the nose for two years, a number of physicians who had seen this patient having made the diagnosis of a chronic cold. The lesson taught by this case is that foreign bodies in the nose should be suspected whenever a chronic discharge, with the blocking of one nostril is present, especially in children, and especially when pressure over the side of the nose affected or over the corresponding frontal sinus causes pain. The shoe button was easily discovered in this case by anterior rhinoscopy and was removed with a small pair of forceps. Such cases also teach the necessity of more thorough education of the practitioner in the methods of examining the nose, throat, and ear.

RIFORMA MEDICA.

July 21, 1906.

1. Glénard's Disease, with Movable Heart, By G. Spagnolio.
2. The Animal Tissues as Nutrient Media for the Tubercle Bacillus, By Bindo de Vecchi.
3. Delirium in the Stage of Convalescence of Intestinal Obstruction, By Pietro Capasso.
4. The Practical Results of the De Rossi' Typhodiagnostic Reaction, By Gino de Rossi.

1. Movable Heart.—Spagnolio reports a case of Glénard's disease (enteroptosis) which he had occasion to observe in Gabbi's clinic at Messina. The woman was forty years old, a farmer's wife, and presented a displacement of the abdominal organs such as was described by Glénard. In addition, however, the heart was in a condition of mobility which made it swing like a pendulum with the contractions of its muscular walls. The amount of mobility as attested by the displacement of the apex towards the axillary line when the patient was changed from the erect to the lateral position was six centimetres. There was, however, but a slight amount of downward displacement and the apex beat into the fifth intercostal space. There was therefore, in this case rather an abnormal mobility of the heart than a true cardioptosis, such as has been so well described by Rummo and his pupils.

2. Pieces of Tissue as Nutrient Media for Tubercle Bacilli.—De Vecchi experimented with pieces of animal tissue as nutrient media for tubercle bacilli, and thinks that this method of cultivation has a distinct value in practical bacteriology. The idea originated with two French observers, A. and L. Lumière, who used the following method: They cut pieces of spleen from animals, washed them, cooked them in a sterilizer, and immersed them for one hour in six per cent. glycerin solution in water. The pieces of spleen were then placed in potato culture tubes, and sterilized for fifteen minutes. The bacillus begins to grow on the surface of these pieces within thirty-six hours, and develops quite well within a few days. The present author modified the method in some respects. He tried various organs and various animals, and concluded that the best animal is the rabbit, and that the best organs for this purpose are the lungs and the brain, next in rank being the kidneys, the spleen, etc. A certain amount of humidity is needed for the successful growth of the bacillus, and this growth ceases when the pieces of tissues dry and shrivel up. The colonies after a few days assume a rather yellowish or even a rusty red color. Probably the bacillus in its growth uses up some of the cellular constituents of the tissues, this pigmentation is the result of such a process. In the suprarenal gland, for instance, the colonies become yellow, absorbing a pigment peculiar to this gland, and the bacilli, seen in hanging drops, appear stained yellow in these colonies.

3. Delirium in Convalescence from Intestinal Occlusion.—Capasso calls attention to the delirium which is seen in some cases of intestinal obstruction after the impediment has been removed by surgical or other means. This delirium, he concludes, is due to the absorption of toxic substances by the injured gut. In order to prevent it and to treat it, daily purgatives are best administered after the obstruction had been reduced. In addition, the blood of the patient can be cleansed by hypodermoclysis, etc.

ROUSSKY VRATCH.

June 24, 1906.

1. The Transmission of the Spirochæta of Syphilis From Mother to Child, By M. A. Versilova.
2. The Influence of One Set of Muscular Movements Upon Another, By A. S. Solovtsova and V. P. Barankeyeva.
3. A Case of Cyst of the Ovary, By P. S. Tcherevkoff.
4. The Treatment of Alcoholism by Suggestion. An Attempt to Establish a Dispensary for Alcoholics in the Suburbs, By A. S. Sholomovitch
5. Statistics of Urinary Examination, with Special Reference to Sugar, By I. Bihl.

1. Transmission of the Spirochæta of Syphilis Through the Placenta.—Versilova examined the placentæ and the tissues of fœtus with hereditary syphilis in order to trace the transmission of the disease.

She reports a number of cases, but especially the case of a syphilitic woman who gave birth to triplets. Of these one was macerated, one died shortly after birth, and the third died on the second day. There was a single trilobed placenta which showed numerous sclerotic patches. This placenta showed many spirochætæ, especially in the sclerosed places. The umbilical cords of the infants showed a large number of spirochætæ, which were also found in the muscular fibres of the heart and in the liver, the spleen, and the other organs of the fœtus. The organism was detected in considerable numbers in the skin of one of the bodies, which showed syphilitic pemphigus. The smears from the placenta and the umbilical cord were stained according to Giemsa's and other staining methods, while the Levaditi method (with silver nitrate) was used for the sections. This shows the spirochæta very plainly in dark brown or black against a yellow background. The fixation was done in ten per cent. formalin. The results of the author's research lead her to conclude that the spirochæta is transmitted from mother to offspring through the placenta. Of eighty cases of hereditary syphilis in infants reported in recent literature, fifty showed spirochætæ. Of a thousand cases of syphilis examined by various authors within the past year, 740 showed the presence of the organism of Schaudinn and Hoffmann. The specific character of the spirochætæ, therefore, is now more probable than ever.

5. **Statistics of Sugar in the Urine.**—Bihl gives statistics of 44,338 specimens of urine examined in his laboratory between the years 1890 and 1904. Of these 7,842 specimens contained sugar. Of the 23,440 specimens taken from men, 5,287 contained sugar, while of the 20,898 specimens from women, 2,555 were found to be glycosuric. Glycosuria is therefore more common in men, but the severity of the glycosuriæ was more marked on the average in women. Albumin was found in about twenty-four per cent. of the cases of glycosuria, being most frequently found in the cases in which sugar was present in moderate amounts, and less frequently when the higher percentages of sugar were reached.

Letters to the Editors.

DR. SAJOUS ON INTERNAL SECRETIONS.

2043 WALNUT STREET,
PHILADELPHIA, *August* 16, 1906.

To the Editors: Professor Theodore G. Davis, of the College of Physicians and Surgeons of Los Angeles, Cal., writes in your issue of August 11th: "Sajous in his book, *The Intersecretions* (*sic*), published in 1903, has collected a great amount regarding the suprarenal gland, but in a determined effort to support a preconceived theory, he confuses and vitiates his conclusions." I wish to inform your readers that Dr. Davis's statement is gratuitous and false. If he had as much as read the preface of my work, page xviii, he would have seen that "in its ——— preparation my purpose had been to treat each question as if it had been a mathematical problem" and that "preconceived conclusions were under no circumstances allowed to prevail." It is precisely because I do not indulge in guesses and tentative theories that my views differ from the prevailing doctrines, which are replete with them. Dr. Davis's reference to my conclusions is as devoid of foundation. The fact that he quotes me as including the iodides among the vasodepressants of adrenal activity proves that he is not familiar with my labors or my conclusions, since anyone who knows anything at all about them is aware of the fact that, as stated repeatedly in the work and even in the index (page 795), I regard iodine as "the physiological adrenal stimulant." Even the cover of my work does not appear to have been seen by Dr. Davis, judging from the fact that the title he gives it is also erroneous.

Having devoted the last four years to a revision of my views from various standpoints, biochemical, zoological, physiological, and pathological, and their application to practical medicine, using one branch of science to control the data afforded by the others, and exacting from all a common result, I am able to state to-day that the function of the adrenal secretion is that pointed out by myself in January, 1903, viz., *to combine with the oxygen of the air in the pulmonary alveoli and endow the blood plasma with its oxidizing properties, the red corpuscles acting as storage cells.* It is the foundation of the now well known "oxidases."

C. E. DE M. SAJOUS.

MEDICAL SERVICE IN THE PHILADELPHIA SCHOOLS.

BAR HARBOR, MAINE, *August* 13, 1906.

To the Editors: In your editorial on Medical Service in the Philadelphia Schools your writer mentions certain names of "distinguished men" to whom much of the results are credited. At the same time the names of those who really brought about the accomplishment of the results, in the face of more than ordinary difficulties, are omitted. Let me urge that, since you have said so much, you proceed to inform your readers of the facts to which I here can only briefly refer. The medical inspection of schools in Philadelphia was, unfortunately tardy, but this was not owing to the want of effort and well organized zeal, chiefly on the part of the Committee on Medical Inspection of Schools of the Public Education Association. Miss Dora Keen was and is the moving spirit, the able organizer, whose constant vigilance, supported by the committee of such men as Dr. S. D. Risley, Dr. B. Alexander Randall, Dr. W. C. Posey, Dr. Lewis Sowers, Dr. Howard S. Anders, and others, really secured the legislation, the appointment of the inspectors, and the systematization of the whole plan now elaborated and working well.

Miss Dora Keen can and doubtless will give the facts in brief if requested.

When we attempted to induce councils to make the appointments, she and I appeared before the finance committee under most unfavorable circumstances, yet were given the floor and made the first definite presentations. Then Dr. James Herbert McKee, Dr. S. D. Codman, and others perfected the organization of the inspectors, who worked for a year or two without pay. It is to these, then, as well as to the laymen and women who labored so steadily under such trying conditions, that the credit is assuredly due, not to a few gentlemen who chiefly thought their names and influence gave prestige to the undertaking. Personally, though I was active through all the campaign, I never heard of some of these you mention as actively engaged in the work.

J. MADISON TAYLOR.

Proceedings of Societies.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of March 28, 1906.

The President, Dr. CHARLES K. MILLS, in the chair.

SANITARY AND MORAL PROPHYLAXIS.

General Considerations.—Dr. PRINCE A. MORROW, of New York, president of the American Society of Sanitary and Moral Prophylaxis, said that the prophylaxis of venereal diseases had long been recognized as the most difficult and delicate of all problems of social hygiene, and that the satisfactory solution of this problem would represent the greatest possible benefit which

preventive medicine could render humanity. Notification, the first and most essential condition of sanitary control, did not appear to him to be practicable; here the need of medical secrecy dominated the situation. It was evident that medical measures must be supplemented by influences and agencies which could more effectively intervene in the correction of the causes of these diseases and the conditions under which they were spread; especially must they be adapted to their peculiar nature and mode of communication. It was the duty of the medical profession to let them know to what they exposed themselves, and especially to let them know that the introduction of these diseases into marriage had, upon their dependents and upon future generations, all the consequences of crime. The peculiar difficulties in the way of this prophylactic education were referred to. Experience in dealing with other communicable diseases had shown that the most essential condition of success was the creation of public sentiment. It was especially needful that the light of publicity should be turned upon a class of diseases which infected unseen the social body, which aptly typified "the pestilence that walketh in darkness," and those ravages had been concealed. This, he believed, could be most effectively done by exposing the grave dangers to health from venereal infection, the economic and social interests involved, and especially the dangers to the family. He recounted the experimental work done by the American Society of Sanitary and Moral Prophylaxis, organized in New York twelve months ago. It was found that the society must be composite in character, embracing in its membership medical men, representatives of the church and of the law, public educators, sociologists, and public spirited citizens interested in the social welfare. For the first year it was decided that the meetings should be a sort of continued educational "symposium," embracing the subjects of the education of the youth of the country in sexual physiology and hygiene, studying the nature and scope of this instruction, the age at which it should be given, whether it should be progressive according to the age of the individual, through what agencies it should be given, etc. There were further considered the subjects of the education of the young men and young women of the working classes, education of the men of the army and navy, and finally that of the great body of the general public. In the practical application of this educational scheme popular educators and practical pædagogists were invited to point out specific methods for carrying out the work. The question of the education of young women of the working classes was submitted to women physicians for discussion. In the matter of educating men of the army and navy, the cooperation of the national government was solicited. It was shown that venereal diseases constituted the largest factor in impairment of the efficiency of the army. The enlightenment of the great body of the general public was regarded as perhaps the most important and yet the most difficult part of the society's work. The newspaper press was absolutely barred to the mention of venereal diseases; and, yet, Dr. Morrow believed that certain types of newspapers were the most powerful of all agencies in the dissemination of venereal diseases by printing quack advertisements which held out deceptive promises of the cure of gonorrhœa in from three to ten days, and of syphilis in from thirty to sixty days, leaving their dupes to sow broadcast the seeds of disease which might have been sterilized by scientific treatment. Whether or not this was false ethics, it must be accepted as newspaper ethics. He regarded it as a fortunate matter that the entering wedge which might serve to open up communication with the public has been found in the *Charities and Commons,* whose editor had the courage and public spirit to disregard traditional prejudice and print the papers and discussions of the American Society of Sanitary and Moral Prophylaxis. The educational feature did not represent the entire scope of the society's work. There were in addition committees on treatment, on "the social evil," and on legislation.

Dr. Morrow was emphatic in his declaration of the duty of the medical profession to proclaim the doctrine that continence was not prejudicial to health. The almost universal infection of the minds of young men with the converse of this doctrine—the so called "sexual necessity"—was in his opinion the most powerful determining cause of immorality among men.

Syphilis and Gonorrhœa of the Innocent.—Dr. Edward Martin felt that the profession in Philadelphia could promise support to Dr. Morrow in the work outlined. He spoke of the women and children as two classes who suffered from gonorrhœa innocently acquired. A third class, he said, were the doctors who acquired syphilis in the practice of medicine or surgery. In so far as the children were concerned, he thought it fair to state that a large percentage of hydrocephalic and epileptic children and those exhibiting various dystrophies were due to hereditary syphilis. Possibly ten per cent. of those blind from birth were so from gonorrhœa innocently acquired; five to ten per cent. of the deaf and dumb were so because of syphilis. Dr. Martin regarded as extraordinary the fact that the law compelled the report of a case of diphtheria, which was easily controlled, the transmission of which can be absolutely prevented by modern means, and declared that syphilis, which could be conveyed directly to the innocent and passed to the next generation, must not be reported. He would approve, through the public school system of Philadelphia, of all children being educated, not only in the prophylaxis and the ultimate results of syphilis and gonorrhœa, but in those of all contagious diseases. He saw no more reason why young women should be taught the functions of digestion than that they should be taught the functions of reproduction.

A second step in prophylaxis he believed was in holding to strict accountability those responsible for the conveyance of the disease. A third step indicated was in clearing the streets of soliciting women. He agreed with Dr. Morrow in his estimation of the enormous power of the press in the education of the people.

The Influence of Municipal Authority in Suppressing Venereal Diseases.—Dr. W. M. L. Coplin, director of public health, of Philadelphia, said that any great public movement, to be efficient, must be supported by a stronger influence than the written law, namely, the irresistible force of public opinion. He spoke of the concealment from the general public of the dangers surrounding venereal disease as a factor in weakening official efficacy and lessening the activity of departmental energy. He was emphatic in his denunciation of official supervision that gave to vice the suggestion of legal sanction. Although it was highly desirable, he was not certain that there was the legal machinery necessary for exerting a custodial care by immuring or quarantining individuals known to be actively infected and who continued a line of contact propagating venereal disease. A form of official suppression partaking more of the nature of a police regulation than of a sanitary measure, especially directed toward brothels, he believed of value. He noted that coincident with the recent activity of the police and private societies the number of admissions to the venereal wards of the City Hospital had perceptibly diminished. He thought that all who had studied the social evil were agreed that the most efficient influence that could at present be exerted must be educational rather than restrictive, and directed to the awakening of the public mind, morally and physically, of this form

of immorality. He suggested the cooperation of health authorities with physicians in popularizing appropriate knowledge given in pamphlets judiciously distributed. He felt that physicians were undoubtedly negligent in not calling the attention of their patients to the danger of propagating venereal disease both to the innocent and to the offender. As a part of the educational campaign, he suggested the possibility of the city authorities, through the board of health or the board of education, arranging definite lines of instruction, preferably by lectures to the advanced classes and especially to youths at that age when the sexual functions first conspicuously became manifest. Dr. Coplin regarded as within the realm of the practicable the suggestion that the man contemplating marriage should be certified to as free from venereal infection.

The Transmission of Venereal Diseases to the Wife and the Evil Results Thereof.—Dr. JOSEPH PRICE spoke upon this aspect of the subject. He spoke of the great number of women upon whom he had operated with the reproductive organs destroyed as the result of venereal disease. The disease he considered equally destructive to the male reproductive organs. He believed that but very few men and women were sterile who had lived a "Bible virtuous life."

The Influence of the Young Man in the Control of Venereal Diseases.—Dr. ROBERT N. WILLSON expressed his great pleasure in realizing in this meeting some results of an effort started six years ago in the university toward awakening the medical profession to the need presented by Dr. Morrow. He stated his belief that the matter lay in the hands of the young men and of the mothers of this country. Of the fourteen million young men under thirty years of age in America, probably fifty per cent. were infected with venereal disease. In speaking of the control of the evil, Dr. Willson said that the leading newspapers had printed in the last month columns on the subject of venereal disease and in plain terms. Pamphlets had been widely circulated, and a million American mothers had had placed in their hands facts which should secure their aid in combating the evil. Literature on this subject had been especially distributed among students. He believed that the laymen could do more than medical men if the facts were in their hands. The mother could add her influence by educating her boys and girls in the knowledge of simple and normal sexual life, and in telling them of the danger from abuse of these functions.

The Social Evil from the Publicist's View Point.—Dr. W. B. HALE, of the *Public Ledger,* said that in his judgment the chief considerations in the combating of this evil were the reflections concerning the physical effect upon one, and others closely related to him, of transgression; and a remembrance of those higher obligations of which Dr. Tomkins would speak. The part of the newspaper, he said, was, in the first place, positive; to give whatever publicity might seem wise to both these considerations, and, in the second place, negative; to decline to give publicity to matters calculated to inflame unlawful desires, and to refrain also from publishing items which would pander to the satisfaction of these desires. While in full sympathy with the movement, he felt that the work of the newspaper in particular must be chiefly on the negative side. He thought much would be gained if the newspaper press were persuaded to refuse to publish inflaming news stories, or at least displaying them, as was now the case with a certain class of the newspaper press. He did not believe it wise in the accounts of disorderly houses raided to give the streets and numbers of these houses, and as to advertising places like this in due form of advertising, he declared that a community that would tolerate it was not a decent community. He thought the effort against the social evil could be directed to no better purpose than to discouraging the circulation of papers advertising lewd houses, massage houses, rooms with privileges, and illegal practitioners. As to the positive influence for good which the newspaper might exert, he wished it were possible, but feared that in the present state of public sentiment it would not be possible to print facts presented to the meeting. He was not convinced that it was the function of the newspaper to enter upon a specific campaign against the social evil, but believed that it was one of the responsibilities of the press to fight the evil as it could, and at least to do all possible to keep the general tone of the press sweet, sound, and wholesome, so that the particular work under discussion could be carried on effectually by those upon whom it must chiefly rest, the fathers, the mothers, the medical profession, and the pulpit.

The Social Evil from the View Point of the Pulpit.—The Reverend Dr. FLOYD W. TOMKINS, under this heading, said that the pulpit believed, first, that the ideal of social morality must be kept very high, and there must never be any question of lowering it; the licensing or segregation idea could not be considered; secondly, there must be equal justice in judgment so that one who sinned should be judged as severely as the other, there must be the teaching in plain terms that there was no difference between the sin of the man and the sin of the woman, unless it made the sin of the man the greater. Much was heard of "fallen women," but nothing of "fallen men." The woman, sinning from love, was ostracized; the man, sinning from lust, was not only allowed to go scot free, but was welcomed in social circles and allowed to mingle with the wives and daughters who should be protected. In the third place, he believed that all possible must be done to educate in the schools and colleges, as well as in the family. In the fourth place, he believed there must be impressed upon physicians as well as upon ministers the necessity of firm personal appeal and earnest warning.

Book Notices.

Grundriss der orthopädischen Chirurgie für praktische Aerzte und Studierende. Von Dr. MAX DAVIS, Spezialarzt für orthopädische Chirurgie in Berlin. Mit 184 Abbildungen. Zweite, wesentlich vermehrte und verbesserte Auflage. Berlin: S. Karger, 1906. Pp. 240.

This is a revised and somewhat augmented edition of the original text, which appeared six years ago. The book is an elementary exposition of the principles and practice of orthopædic surgery, but for the American practitioner is less useful than the standard works of Bradford and of Whitman.

Les Filaires du sang de l'homme. Par le Docteur RAYMOND PENEL, Médecin colonial de l'Université de Paris, avec préface du Professeur R. BLANCHARD, Membre de l'Académie de médecine. Deuxième Edition. Paris: F. R. de Rudeval, 1905. Pp. viii-162.

This book gives a clear and comprehensive description of the present state of our knowledge of the morphology, the evolution, and the geographical distribution of the filariæ that affect men of all races in both the temperate and the tropical zones. Due credit is given to the important researches made by English surgeons on the evolution of filariæ in the body of the mosquito and its transmission to man by the intermediation of those insects. The work is of interest to the naturalist and the physician, particularly if the latter practises in localities in which the filaria is found.

Miscellany.

Influence of the Duration of an Operation.—Kessler believes, as the result of analysis of twenty-eight abdominal hysterectomies, that long duration alone of an operation has not the significance that has been attributed to it. Only one of his cases was fatal, and death resulted from repeated gastric hæmorrhages and necrosis of the pancreas. The duration of his operations was from an hour and three quarters to two hours and three quarters. He does not believe that a two hour operation necessarily results in shock. The probable disadvantages of long operations may be obviated by observing the following requirements: 1. Continued asepsis to the utmost limit. 2. Avoidance of hæmorrhage so far as possible. 3. Avoidance of wet applications during the operation. 4. Careful hæmostasis. 5. Use of dry dressings after the operation. 6. Ether narcosis.—*Fortshritte der Medizin*, April, 1906.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending August 17, 1906:

Places.	Date.	Cases.	Deaths.
Smallpox—United States.			
Illinois—Galesburg	July 28-Aug. 4	2	
Louisiana—New Orleans	July 28-Aug. 4	9	2
Michigan—Detroit	July 28-Aug. 4	2	
Missouri—St. Joseph	July 28-Aug. 4	1	
New Jersey—Elizabeth	June 30-July 7	1	
New York—New York	Aug. 4-11	1	
Pennsylvania—Columbia	July 28-Aug. 4	1	
Texas—Greenville	Mar. 26-Aug. 6	33	
Washington—Spokane	July 1-31	1	
Wisconsin—Appleton	July 28-Aug. 4	3	
Wisconsin—Milwaukee	July 14-21	1	
Wisconsin—Milwaukee	Aug. 4-11	1	
Smallpox—Foreign.			
Africa—Cape Town	June 30-July 7	1	
Argentina—Buenos Ayres	May 1-31		197
Brazil—Pernambuco	June 15-30		2
China—Hongkong	June 9-30	4	3
China—Shanghai	June 23-30	1	1
France—Paris	July 14-21	8	
Great Britain—Liverpool	July 21-28	4	
Chile—Antofagasta	June 21-July 5	33	3
India—Bombay	June 26-July 10		7
India—Calcutta	June 23-30		19
India—Madras	June 30-July 6		4
India—Rangoon	June 23-30		4
Italy—General	July 12-19	4	
Russia—Moscow	June 30-July 21	11	7
Russia—Odessa	July 14-21	5	2
Russia—St. Petersburg	June 30-July 7	6	2
Siberia—Vladivostok	June 14-28	2	
Yellow Fever—Foreign.			
Cuba—Havana	Aug. 15	1	
Mexico—Merida	July 22-28	12	7
Mexico—Sierra Blanca	Aug. 12	1	
Mexico—Vera Cruz	July 22-28	1	1
		Imported from Merida.	
Cholera—Insular.			
Philippine Islands—Manila	June 23-30	41	40
Philippine Islands—Provinces	June 23-30	117	71
Cholera—Foreign.			
India—Bombay	June 26-July 10		78
India—Calcutta	June 23-30		28
India—Karachi	July 1-8	1	1
India—Madras	June 30-July 6		17
India—Rangoon	June 23-30		4
Plague—Foreign.			
Australia—Brisbane	June 20	1	1
Australia—Sydney	June 23	1	1
Chile—Antofagasta	June 21-July 5	5	1
China—Hongkong	June 9-30	112	93
India—General	June 23-30	896	769
India—Bombay	June 26-July 10		74
India—Calcutta	June 23-30		23
India—Karachi	July 1-8	24	17
India—Rangoon	June 23-30		137
Japan—Formosa	June 1-July 10	671	640

Public Health and Marine Hospital Service:

List of Changes of Station and Duties of Commissioned and Noncommissioned Officers of the Public Health and Marine Hospital Service for the seven days ending August 15, 1906:

ANDERSON, J. F., Passed Assistant Surgeon. Granted leave of absence for five days, from August 7, 1906, on account of sickness.

AUSTIN, H. W., Surgeon. Relieved from duty at Detroit, Mich., upon arrival of Passed Assistant Surgeon Grubbs at that port, and directed to proceed to San Francisco, Cal., relieving Surgeon H. W. Sawtelle, and assuming command of the station at that port.

DUFFY, F., Acting Assistant Surgeon. Granted leave of absence for seven days, from August 14, 1906.

DUNN, JAMES, Acting Assistant Surgeon. Granted leave of absence for seven days, from August 6, 1906, under paragraph 210 of the Regulations.

GRUBBS, S. B., Passed Assistant Surgeon. Upon expiration of present leave of absence, relieved from duty at Cleveland, Ohio, and directed to proceed to Detroit, Mich., and assume temporary command of the Service at that port.

LAVINDER, C. H., Passed Assistant Surgeon. Granted leave of absence for twenty-eight days, from August 11, 1906.

MEAD, F. W., Surgeon. Granted leave of absence for one month, from August 15, 1906.

O'REILLY, W. J., Acting Assistant Surgeon. Granted leave of absence for two days, from August 28, 1906.

RANSON, S. A., Acting Assistant Surgeon. Granted leave of absence for thirty days from September 24, 1906, and excused for a further period of sixty days, from October 24, 1906.

RICHARDSON, S. W., Pharmacist. Granted leave of absence for seven days, from August 18, 1906, under paragraph 210 of the Regulations.

ROSENAU, M. J., Passed Assistant Surgeon. Granted leave of absence for one day, August 11, 1906, under paragraph 189 of the Regulations.

SAVAGE, W. L., Acting Assistant Surgeon. Granted leave of absence for thirty days, from August 11, 1906.

SCOTT, E. B., Pharmacist. Granted leave of absence for four days, from July 26, 1906, on account of sickness.

SCOTT, E. B., Pharmacist. Granted leave of absence for three days, from July 31, 1906, on account of sickness.

SILL, R. H., Acting Assistant Surgeon. Granted leave of absence for fifteen days, from August 17, 1906.

WHITE, J. H., Surgeon. Directed to proceed to Mobile, Ala., for special temporary duty, upon completion of which to rejoin station at New Orleans, La.

WOODWARD, R. M., Surgeon. Detailed to represent the Service at the meeting of the British Medical Association at Toronto, Canada, August 21 to 24, 1906.

Board Convened.

Board convened to meet at Cebu, Philippine Islands, for the purpose of examining Pharmacist C. R. McBride to determine his fitness for promotion to the grade of Pharmacist of the Second Class. Detail for the Board, Passed Assistant Surgeon V. E. Keiser, chairman; Passed Assistant Surgeon Carroll Fox, Recorder.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army for the week ending August 18, 1906:

APPEL, D. M., Lieutenant Colonel and Deputy Surgeon General. Detailed for duty and member of examining board for promotion or advancement of medical officers, Army General Hospital, Presidio of San Francisco, Cal., during the temporary absence of Lieutenant Colonel George H. Torney, deputy surgeon general.

BANISTER, J. M., Lieutenant Colonel and Deputy Surgeon General. Left Fort Riley, Kansas, on thirty days' sick leave of absence.

BARTLETT, C. J., First Lieutenant and Assistant Surgeon. Arrived at Camp Tacoma, American Lake, Washington, for duty.

BOSLEY, JOHN R., First Lieutenant and Assistant Surgeon. Upon arrival at Seattle, Wash., will proceed to Jefferson Barracks, Mo., for station and duty.

BRECHEMIN, LOUIS, JR., First Lieutenant and Assistant Surgeon. Arrived at Camp Tacoma, Murray, Wash., for duty.

BUCK, CARROLL D., First Lieutenant and Assistant Surgeon. Relieved from duty at Fort Leavenworth, Kansas, and ordered to the Army General Hospital, Presidio, San Francisco, Cal., for duty.

CLAYTON, JERE B., Captain and Assistant Surgeon. Arrived at Camp of Instruction, Fort Riley, Kansas.

CONNOR, C. H., First Lieutenant and Assistant Surgeon. Relieved from duty at Fort Stevens, Oregon, and ordered to the Army General Hospital, Presidio, San Francisco, Cal., for duty.

DAVIDSON, W. T., Captain and Assistant Surgeon. Arrived at Camp Tacoma, Murray, Wash., for duty.

DEVEREUX, J. R., First Lieutenant and Assistant Surgeon. Relieved from duty at Fort Logan, Colorado, and ordered to the Army General Hospital, Washington Barracks, Washington, D. C., for duty.

HARTSOCK, F. M., Captain and Assistant Surgeon. Detail as examiner of recruits, New York city, is revoked.

HOWARD, DEANE C., Captain and Assistant Surgeon. Granted twenty days' leave of absence.

IRELAND, M. W., Major and Surgeon. Left Washington, D. C., *en route* to the Army General Hospital, Presidio of San Francisco, Cal., on temporary duty.

JONES, PERCY L., Captain and Assistant Surgeon. Detail as examiner of recruits, Portland, Me., is revoked.

KIRBY-SMITH, R. M., Captain and Assistant Surgeon. Upon arrival at San Francisco, Cal., will report for duty at the Army General Hospital, Presidio of San Francisco, Cal.

KOERPER, C. E., First Lieutenant and Assistant Surgeon. Relieved from duty at the Army General Hospital, Washington Barracks, Washington, D. C., and ordered to Fort D. A. Russell, Wyo., for duty.

LEWIS, W. F., Captain and Assistant Surgeon. So much of par. 22, S. O. 282, War Department, December 5, 1905, as details him for examiner of recruits, is revoked.

MILLER, E. W., First Lieutenant and Assistant Surgeon. Relieved from duty at Camp Mabry, Austin, Texas, and from duty at Fort Clark, Texas, and ordered to Fort Riley, Kansas, for duty.

MURTAGH, JOHN A., First Lieutenant and Assistant Surgeon. Detail as examiner of recruits, San Francisco, Cal., is revoked.

O'CONNOR, R. P., First Lieutenant and Assistant Surgeon. Relieved from duty at Army General Hospital, Presidio of San Francisco, Cal., and ordered to Fort Leavenworth, Kansas, for duty.

PERSONS, E. E., First Lieutenant and Assistant Surgeon. Relieved from duty at Fort Flagler, Wash., and ordered to take the first available transport sailing from San Francisco, Cal., to Manila, and upon arrival at the last named place to report in person to the commanding general, Philippines Division, for assignment to duty.

PURNELL, H. S., First Lieutenant and Assistant Surgeon. Left Camp of Instruction, Islay, Wyo., on leave of absence for thirty days.

REED, HOWARD A., First Lieutenant and Assistant Surgeon. Relieved from temporary duty in the Department of California, and will report at once to the medical superintendent, Army Transport Service, San Francisco, Cal., for duty on the transport *Logan*.

SCOTT, GEORGE H., First Lieutenant and Assistant Surgeon. Now on leave at Denver, Colo., will proceed to Camp of Instruction at the target and manœuvre reservation near Fort D. A. Russell, Wyo., for duty. Upon completion of which he will return to Denver, Colo., and resume his leave.

SMITH, LLOYD L., First Lieutenant and Assistant Surgeon. Relieved from duty as surgeon, U. S. Army transport *Logan*, and ordered to West Point, N. Y., for duty; granted five days' leave of absence.

STEDMAN, C. J., First Lieutenant and Assistant Surgeon. Upon arrival at Seattle, Wash., will proceed to Camp of Instruction, American Lake, Washington, for duty. Upon abandonment of camp, ordered to Fort Stevens, Oregon, for duty.

TRUBY, WILLARD F., Captain and Assistant Surgeon. Left Fort Niagara, N. Y., with 3rd Battalion, 12th Infantry, *en route* to Mount Gretna, Pa., for duty at Camp of Instruction.

USHER, F. C. M., Captain and Assistant Surgeon. Left Fort Brady, Mich., *en route* to Camp of Instruction, Fort Benjamin Harrison, Ind.

WOODALL, WILLIAM P., First Lieutenant and Assistant Surgeon. Relieved from duty at Army General Hospital, San Francisco, Cal., and ordered to Camp Mabry, Texas, for duty. Upon the abandonment of Camp Mabry, ordered to proceed to Fort Clark, Texas, for duty.

WOODSON, R. S., Major and Surgeon. Left Fort McDowell, California, *en route* to Camp of Instruction, American Lake, Washington.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy for the week ending August 18, 1906:

DOWNEY, J. O., Assistant Surgeon. Appointed an assistant surgeon, from August 1, 1906.

MINTER, J. M., Assistant Surgeon. Appointed an assistant surgeon, from August 1, 1906.

MOORE, J. M., Surgeon. Appointed surgeon to the *Puritan*.

PARKER, E. G., Surgeon. Commissioned a surgeon, from March 24, 1906.

Births, Marriages, and Deaths.

Died.

ALVAREZ.—In San Salvador, South America, on Thursday, August 2nd, Dr. Emilio Alvarez.

BREVARD.—In Charlotte, North Carolina, on Saturday, August 11th, Dr. Robert Joseph Brevard, aged fifty-seven years.

CORNICK.—In Norfolk, Virginia, on Thursday, July 26th, Dr. William F. Cornick.

CRAWFORD.—In Chicago, on Wednesday, August 8th, Dr. Samuel Crawford, aged thirty-two years.

ELLIS.—In Ashland, Virginia, on Sunday, August 12th, Dr. Daniel S. Ellis, aged fifty years.

HERROD.—In Maysville, Indian Territory, on Sunday, August 12th, Dr. G. W. L. Herrod.

LATANE.—In Richmond, Virginia, on Saturday, August 11th, Dr. Thomas Latane, aged eighty-one years.

MATHEWS.—In Worcester, Massachusetts, on Sunday, August 5th, Dr. George W. Mathews, aged thirty-one years.

MCCAW.—In Richmond, Virginia, on Monday, August 13th, Dr. James Branch McCaw, aged eighty-three years.

MONTANYE.—In Hurley, New York, on Saturday, August 11th, Dr. W. Deda Montanye, aged sixty-nine years.

ROBERTS.—In Wilmington, Massachusetts, on Sunday, August 12th, Dr. Frederick A. Roberts, aged thirty-three years.

SCOTT.—In Ottawa, Ontario, on Tuesday, July 31st, Dr. John M. Scott.

STARK.—In Los Angeles, California, on Tuesday, July 31st, Dr. Mary E. Stark.

WARFIELD.—In Philadelphia, Pennsylvania, on Thursday, August 9th, Dr. James H. Warfield, aged seventy-two years.

Married.

BAKER—STEVENSON.—In Worthington, Minnesota, Dr. Harold W. Baker and Mrs. Maxwell Stevenson.

JAUCH—HOTCHKISS.—In San Francisco, California, Dr. Joseph W. Jauch and Mrs. Mary A. Hotchkiss.

JONES—KELLY.—In Dorchester, Massachusetts, on Wednesday, August 8th, Dr. Frank P. Jones and Miss Alice M. Kelly.

LUNDBECK—DATLESSEN.—In Brooklyn, New York, on Saturday, August 11th, Dr. Charles J. Lundbeck and Miss Emma H. Datlessen.

LYKE—KRIBS.—In Trempealeau, Wisconsin, on Saturday, August 11th, Dr. John B. Lyke and Miss H. Ray Kribs.

WADHAMS—GATES.—In Indianapolis, Indiana, on Saturday, August 4th, Dr. Sanford H. Wadhams and Mrs. Carra Atkins Gates.

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Lectures and Addresses.

ADDRESS ON CLIMATOLOGY.*

By E. L. SHURLY, M. D.,
Detroit, Mich.

Those who were present at the last meeting of this association will readily recall—(if indeed it is not in mind now)—the masterful discourse of my distinguished predecessor, Dr. W. F. R. Phillips, on the science of climatology. As a feeble supplement, it is my desire now to call attention to climatology particularly as a medical art, and the necessity for its continuous study.

Pursuant to history, medicine, as a particular department of learning in its evolution toward a concrete science and art from its budding in the beds of the occult religions and philosophies of antiquity to the present time, has suffered many undulations and mutations; and like its congeners, religion and political economy, has from time to time been the captive of doctrine and imperious authority (or universal thought), and has had like the Roman Empire, its Cæsars, its Charlemagnes, its Bonifaces, its Constantines, its Hildebrands, its Pope Johns, and its Ottos, to garner and press its exploits into sheafs of dependent empiricism or dogmatic mendacity. Yet, despite all this trammeling of human intellect and individualism characteristic of ancient and mediæval times, it has always been about the first entity of learning to escape and resume the journey of progress; and among all its branches, climatology as an adjuvant therapy has generally maintained some sort of standing—notwithstanding ofttimes nursed by superstitious Mohammeds. Indeed, she is one of the oldest therapeutic children of the family of medicine, for the ancients—the Chinese, the Chaldæans, Arabians, Persians, and Egyptians—practised the assignment of diseased persons to particular natural springs, or locations for out of door life. Even the open air treatment of pulmonary tuberculosis of which we boast to-day was generally practiced in ancient times. Although apparently holding such a place, it has been more as an empiric measures than a scientific art that climatology was recognized, until about fifty years ago when medical geography became one of the classic departments of medical learning, since which time the study of meteorology, and its promotion and supervision by the governments of civilized nations (foremost of which is our own) have greatly aided its progress and scientific elucidation. Besides this, the diffusion of population and the extensive intercourse between people of different localities have incited the study of climatic effects on various disease conditions.

Yet, notwithstanding all this, are we not yet somewhat ignorant of the principles of clinical climatology in relation to individualism, and are we not deficient in our laboratory investigations of air, water, and sunlight? Even with the facts and demonstrations at hand, we are still as much in the dark concerning the principles connecting these facts and demonstrations with the laws of disease and individual peculiarities as we are regarding the rationale of immunity or the various stamps of primordial living protoplasm. The increase and change of population and alterations of human customs, the changes in topography incident to the utilization of natural resources—especially the denudation of the surface of forests, the changes in soil and insect life—all serve toward the requirement of more study and observation concerning the relationship of disease.

Indeed, the influence of climate or locality on man cannot be wholly represented by the observations and comparisons of mean temperature or humidity. We know that there are other conditions, some of which we are probably ignorant of, which play an important part in either the development or repression of disease. We do not know as yet all the subtle effects of the sun's rays on the human economy. Undoubtedly there will soon be demonstrated specific elements of potency in sun beams similar to the Röntgen ray, which may clear up many of the mysteries attending climatic or weather effects on man. For instance, who can explain why the exposure of a healthy person for a little while to an east wind on a river bank, a hill, or in a baseball arena, will produce a sore throat (tonsillitis perhaps), even granted that pathogenic microorganisms are present in the person's pharynx? A chilling of the surface will not explain it exactly, for a similar effect will not, as a rule, follow a plunge into a river, lake, or any cold fresh water. Again, think of the curious relationship of so called articular or muscular rheumatism (now believed to be a bacilli genetic disease) to vicissitudes of weather in certain localities. Mere dampness cannot be the cause, for in some parts of the lake region acute articular rheumatism is comparatively rare, while in some dry mountainous districts it is quite common. Again, if we study the curious patho-

* President's Address read before the twenty-third annual meeting of the American Climatological Association, at Atlantic City, May 12, 1906.

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genic phenomena known as influenza in its relation to vicissitudes of weather independently of the specific microorganisms which are believed to be concerned in the causation of the disease. What do we observe?

Suddenly and simultaneously perhaps with a cold wave or a peculiar storm—as it were—a large portion of a community may be attacked with one or other of the clinical forms of influenza, so simultaneously and of such particular type that it would seem impossible for time enough to have elapsed for the incubation and spread of the disease by communicability alone, although the microorganisms are probably in the throat. The same may be observed with regard to acute pneumonia suddenly following a spell of low temperature and humidity. Now what are the agencies allowing the germ activity? Again, note the change of climate and telluric influences in those districts where the abolishment of intermittent and remittent fever and acute dysentery has taken place—districts where these were the most prevalent endemic or zymotic diseases; and where the festive mosquito still lingers to serenade us. I mention these diseases because their decline and extinction antedate the development of bacteriology and hygiene to their modern status of proficiency. Of course, it cannot be denied that the advancement of general hygienic conditions, such as improved drainage and water supply, have been a potent influence toward these results.

It cannot be said that the principles of climatology have yet been worked out to a practical development of the art. For instance, the assignment of A, B, or C to a particular climate and environment cannot yet be made with proper exactitude, although undoubtedly it can be done with better acumen now than formerly, when every patient who needed a change of climate or scene was sent to Texas, Minnesota, California, Colorado, or some other place, according to caprice or fashion. Even nowadays are we not dropping too much into routines or fads? For example, open air treatment anywhere for pulmonary diseases of all sorts? Or, mineral springs anywhere for chronic cardiac and kidney diseases? Is not the profession recommending this or that place or sanatorium without a careful study of the individual requirements of the patient and the best fitted environment for such patients? For instance, a health resort abounding in facilities for gambling and sports may be suitable, psychically, to some patients of the idle, degenerate class, but will such a place be as suitable for physical repair, or will an isolated ranch in the mountains with splendid air, dust free, sunshine, and equable temperature, suffice, if naught but a diet of blue corn beef, measly pork, and soggy bread, be furnished for the patient's nutrition?

But it is unnecessary to multiply instances of misfitting environment to individual case requirements before this body of observers. I merely mention these things in order to emphasize the growing necessity of further attention toward the development of the climatological art, which embraces the study of minute conditions or changes of atmospheric, telluric, domestic, social, and physical environment, including the animal and vegetable life of the region and the comparative static and mutable conditions of both, district and individual.

This association may be proud of its record. It has done much toward fostering and developing climatological science and art, and although, sometimes perhaps it may have lent its influences too much toward the study of pulmonary tuberculosis to the exclusion of the many other diseases quite as susceptible to climatic therapy, yet it has always been conservative and scientific. There are no hysterical enthusiasts, nor wheedling claqueurs for the popular ear, nor breezy promoters of popular crazes among its members. Yet it has given the widest scope of tolerance and opportunity to all, for the exploitation of ideas, as may be perhaps better expressed in the words of James Bryce, the historian, who says: "Everyone knows how little a man's actions conform to the general maxims which he would lay down for himself, and how many things there are which he believes without realizing; believes sufficiently to be influenced, yet not sufficiently to be governed by them."

Still, this glorious American Climatological Association has much yet to do in the development of climatological science and art. Its career should not be restricted to any one or two diseases, but should include the clinical climatic therapy and hygiene of every disease which may be affected by atmospheres, clouds, temperature, humidity, sun, and air effects—chemical and physiological, as well as the land, the water, the faunæ and floræ of each district of our country. Its good work must go on side by side with the pathologist, the botanist, the zoologist, the chemist, the physiologist and geologist, so that we may be able to know with tolerable accuracy why we send a patient to this, that, or other place, or natural spring; and what effects may be counted upon by such and such sojourn and environment, and further, that we may learn why the anthrax bacillus, the tetanus bacillus, the streptococcus which lurk in the soil everywhere, the typhoid bacillus, and the cholera spirillum which lurk in the stagnant pools all about, are so innocuous under certain conditions of personal equation and so pathogenic under other unknown conditions.

32 Adams Avenue, West.

Original Communications.

THE USE OF THE PESSARY.*

By H. A. Slocum, M. D.,
Philadelphia.

You will see, in the listing of this symposium, an application of the old saying: "The first shall be last, and the last shall be first," for although the use of the pessary is the last method mentioned on the list, it is the first to be used by practitioners all over the land. This is not my opinion alone, but one that is shared by others, both in this country and abroad. H. Macnaughton Jones (*British Medical Journal,*

* Read before the Obstetrical Society of Philadelphia, April 5, 1906.

1904, No. 5, p. 97) states that "In general practice treatment by pessary is probably more resorted to than is any other therapeutical step in the conduct of a gynæcological case." A. M. Leonard (*Medical Age*, 1904, p. 281) adduces testimony to show that pessaries are generally recognized as valuable to the gynæcologist, quoting Mann as follows: "Without pessaries I should not know what to do for a considerable number of cases that come to my office, and I should have to give up gynæcology, although I might continue to do laparotomies." Hirst (*Textbook of Diseases of Women*) remarks: "There has been a reaction against the indiscriminate use of pessaries that has gone too far. No one can successfully manage a number of cases of retroversion, no one can retain a considerable proportion of his cases, who has not mastered the art of supporting the uterus in this manner." F. H. Davenport, of Boston, thinks "This dislike and distrust of the pessary has been carried too far."

These quotations indicate the trend of mind in men who are meeting and dealing with these cases constantly, and constitute a perfectly logical resultant due to the fact that the pessary has secured successful results in a large proportion of cases when it has been judiciously used, Davenport estimating this proportion to be fifty per cent. It should be borne in mind that this does not refer to all cases of displacement, but to that class only, from which all contraindications are eliminated. The great outcry against the pessary has been caused by faulty judgment in its use. There are many cases where one should never even think of using a pessary, but the fitness or unfitness of any given case can only be determined through experience. This is recognized by those who have endeavored to master the subject, and their opinions have been frequently expressed. At a meeting of the German Gynæcological Society held in Halle a few years ago, Fritsch declared that he considered it easier to perform a laparotomy than to apply a well fitting pessary, and zealously advocated the treatment by pessaries. He had spent ten years in learning and considered it the most difficult subject in the whole of gynæcology.

The discussion of this subject might be carried to an indefinite extent if it should include all the various pessaries devised; therefore, when I speak of the instrument it will be understood that I refer only to the Smith-Hodge type. I consider it the most valuable form for ordinary cases.

The different opinions held by members of the profession as to the value of the pessary are based upon the varied results in its use, which are good, indifferent, or bad. If these results were invariably indifferent or bad, its career would soon terminate. That it has not done so, that the result is sometimes good, is a proof of its value when properly used. The same disagreement exists concerning operative measures, as shown in the diversity of operations devised for the correction of uterine displacements and extends to the subject of the mode of action of the pessary, prominent men in gynæcological societies differing radically in their conception of the *modus operandi*. Again, the men who are constantly operating have not that store of patience that this minor work demands, nor do they come in contact with so large a proportion of correctible cases, for they have been screened out as they pass through to the hands of the general practitioners, and only the obdurate cases which resist tampons, pessaries, hot douches and laxatives reach their field of vision. There is nothing remarkable in their antipessary attitude. Many of them, also, have forgotten the number of women they benefited years ago, when the peritonæum was sacred, and Alexander's operation, hysteropexy and all of their kind were not even the figments of a dream.

Function of the Smith-Hodge Pessary. As explained to me by Dr. Albert H. Smith and patent to every one, his modification of the Hodge instrument consists, first, in shortening the lower bar, thus bringing the lateral bars in converging lines to conform with the inverted pyramidal confines of the vagina, thereby lessening the chances of its extrusion from the body; and, secondly, curving the lower portion downward to carry it away from the urethra. Given a properly selected case and instrument, the function of the pessary is to push the posterior vaginal fornix upward and backward, and in so doing carry the cervix with it. It does not touch the uterus. As the uterus is pivoted upon a transverse axis (the broad ligament) from a point one inch or more below the fundus, to a point a little above the vaginal portion, the natural result of carrying the cervix backward is to rotate the uterus upon this axis, and sweep the fundus forward. The object in view being to carry the cervix as far back as possible, the Thomas modification (increasing the anteroposterior diameter of the upper bar to distribute the pressure over a greater area of membrane) does not seem desirable, as it tends to defeat this object, for, although it takes the posterior vaginal wall back to the desired position, the thickened bar prevents the cervix following it to the best advantage, and it is the position of the cervix alone that counts.

Indications for the use of the pessary. A. In all cases of uncomplicated retroversion when the uterus can be brought forward, especially in young women and in cases of recent origin, as after a fall or severe and undue muscular exertion. This result is sometimes accomplished at the first meeting; more frequently it is not secured until after several careful, well guided attempts have been made. At times the fundus is readily dislodged, but stubbornly refuses to reach anywhere near where it is desired to go, due to adhesions, postinflammatory deformities of the peritonæum, perfect coaptation of posterior uterine and anterior seated peritoneal investments and imperfect technics.

The most common causes are adhesions and peritoneal contractions, but one must not forget that absolute coaptation of rectal and uterine peritonæum may be so perfect as to prevent their separation; in other words, they are held together by atmospheric pressure. This fact I verified ten years ago at an operation in a case of retroversion that I had treated with tampons and pessary. The instrument gave relief, and the patient insisted upon its use, during which time the fundus came partly forward, but dropped promptly back when it was removed. When the abdomen was opened, the separation of the fundus from its bed was accompanied by a faint suction sound, but not a sign of an adhesion was present, nor was there contracting deformity of any kind, the fundus being brought forward without difficulty. The explana-

tion was found in the condition of the rectum. That tube was very distensible and relaxed as were the peritonæum and subperitoneal connective tissue resisting it. When efforts were made at reduction, even in the knee chest position, the rectal wall would follow the uterine wall in its forward movement, so closely, that at no time did it allow an intestinal coil to intervene, a *sine qua non* to success.

B. Temporary use before or after operation. Not every case of retroversion is in proper condition for operation when first seen. Apart from those presenting symptoms of endometritis requiring a preliminary curettage or other treatment, we meet with others of subinvolution with an antevertible uterus, in which the pessary is of unquestionable value in retaining the organ forward, while proper treatment is applied to reduce its size and weight. Neglect in utilizing it for this purpose has led to total failure. Recently I examined a patient operated upon by one of the ablest gynæcologists of this city, where a big, heavy uterus had torn loose from its attachment to the abdominal wall, and was lying in the hollow of the sacrum, after a hysteropexy of a few months before. A pessary should have been used in this case either before the operation or after, and perhaps both. In 350 hysteropexies done at the Kensington Hospital, Noble reports a relapse of five per cent. or seventeen cases. If the same result follows will other operators consider the benefits a pessary would have conferred if successfully used in every case? If circumstances will not permit preparatory treatment, the supporting assistance of a pessary after an operation upon a large, heavy uterus, is a measure of the most consistent character.

Among conditions other than subinvolution calling for this procedure may be mentioned chronic cystitis. After a hysteropexy and while the fundus is firmly held against the abdominal wall, the cervix may swing forward pressing the bladder against the pubic bone, causing great distress. This occurred in one of my own cases, and was relieved by the use of the instrument, which was worn for several months, at the end of which time successful treatment of the cystitis permitted its permanent removal.

After childbirth, in cases predisposed or predisposing to retroversion. If there is any time in uterine life when retroversion is most amenable to treatment, it should be during the puerperium, when advantage may be taken of the wonderful work of involution to guide this physiological process to a successful termination.

The judicious use of a pessary at this time, in cases which have been previously retroverted, or in which examination reveals that it is just beginning to occur, cannot fail to merit the approbation of thoughtful gynæcologists. The proper postpartum period for instituting this treatment will depend upon the various lesions which the tissues may have sustained during parturition, but in the majority of cases from the seventh to the fourteenth day will be sufficiently early. At a recent meeting of the Section in Obstetrics and Gynæcology of the New York Academy of Medicine, this use of the pessary was unanimously agreed upon by all who spoke upon the subject.

Without enlarging at all upon the matter at this time, I wish to mention the value of the pessary in the cure of sterility. My attention was called to the fact many years ago, by Dr. Joseph Price, whose large experience and keen observation well fitted him to deduce correct conclusions.

When should its use be forbidden? There are many contraindications to its use, some of minor quality, such as vulvar lesions (venereal sores, inflammation of Bartholin's glands), vaginitis, acute cystitis, and others, which the practitioner will instinctively recognize; others not so obvious should be taken into consideration. A very remote one, but still one to be remembered, is the predisposition to cancer. Neugebauer, Jr., found that out of 255 cases injured by the use of the pessary, eight had cancer, apparently caused by irritation of that instrument.

When, through laceration or relaxation, the retaining power of the vagina is lost, a pessary is useless. A conical vagina, narrowing rapidly to the insertion of the cervix; senile changes, rendering the mucous membrane smooth, inelastic and friable; the condition of the parts after amputation of the cervix; laceration of the cervix, especially if bilateral—all constitute prohibitory factors to the use of a pessary. Tumors of the uterus are included in this list, but their significance would vary with their size, character, and position.

Opinions differ concerning its use in retroflexion, but, personally, I am strongly opposed to it as its action is to decidedly increase the lesion.

Probably the worst results—the most painful and deplorable—follow the injudicious use of the pessary in adherent retroversions, and in tubal and ovarian inflammatory conditions, acute or otherwise, or in cases of simple prolapsed ovary, and peritonitis at any stage.

Not the least, among the contraindications, is the lack of special training and knowledge on the part of the practitioner, necessary in utilizing the instrument to the best advantage. This has been recognized for years. As far back as 1863 McClintock (*Diseases of Women*, p. 63), says "The employment of pessaries for supporting the uterus *in situ* has been strongly condemned by some authors of deservedly high reputation. But most of the objections which have been brought against them are founded on their abuse." Marion Sims (*Clinical Notes on Uterine Surgery*, remarks: "Each individual case must be especially studied, and that its complications and peculiarities must be investigated, understood, and regarded, if we will cherish the hope to be able to treat them certainly and successfully." Emmet thinks: "This subject is one of the most important and least understood. The practitioner to become an expert in fitting a pessary, that it may do no harm, must have a decided mechanical talent, and that the full benefit may be derived from the use of the instrument he must be able to appreciate slight shades of difference, which would be entirely overlooked by others." Skene believes that, "No one who is destitute of some knowledge and skill in mechanics will ever succeed in the treatment of displacements of the uterus by means of mechanical support."

I have selected these opinions chiefly from the writing of men who were unacquainted with our modern operations, mainly because, not having the

advantages we now possess, they studied this, their chief method of treatment, more closely, and developed their skill to the greatest extent.

In order to form some estimate of the frequency which retroversion is met with, I present a computation of 1300 cases, 1000 from my clinic at the Polyclinic Hospital, and 300 from notes in private practice. In the 1,000 hospital cases, retroversion was present in 165, 16.5 per cent. The hospital notes were so meagre that no conclusions could be deduced from them. In 300 private cases it occurred in fifty-seven or nineteen per cent. A careful examination of the histories of the latter group gives this result:

	Cases.	Per Cent.
Pessary used; reported cured	21	36
Pessary not used; reported cured	4	7
Pessary used; reported not cured	7	12
Passed from observation	23	40
Remaining under treatment	2	3

The forty-three per cent. of reported cures in this table closely approximate the fifty per cent. of Davenport.

And now I am about to make a statement that may seem heretical, but I am impelled to do it because I think it is the truth. While I believe retroversion one of the most frequent causes of suffering in women, I am being more and more convinced that it is *not necessarily pathological.* I know that many cases exist which give rise to no symptoms whatever. I have watched the progress of patients treated with pessaries and tampons, where the displacement was as great as at the beginning, yet the symptoms had been so entirely eradicated that the patients have refused further treatment, and have positively declared themselves well. I have met these same patients years afterward, and I have found them well and happy, having had no treatment in the meantime. The statistics I have made, though very meagre, show that nearly one woman in every five under treatment, has a retroverted uterus, yet a number of these cases become symptomatically well, with and without the use of a pessary and but very few out of the whole number ever really require an operation.

The sufferings induced in those cases which have become pathological are through involvement of the 3rd or 4th sacral nerve for the direct, and the inferior hypogastric and ovarian plexuses of the sympathetic for the remote symptoms, and are probably, at first, due to venous engorgement, as the veins of the uterus are unusually large. This hyperæmia may exist for a long time without giving rise to symptoms, and it is only when a certain point of engorgement is reached that they appear, and fluctuation to one or other side of this line will make for comfort or the reverse, this being greatly influenced by capillary and venous changes, and involvement of adjacent organs.

If I find, as I have found, retroversion absolutely without symptoms, I let it alone and do not tell the woman. It is far better for her not to know of it. If symptoms, direct or reflex, are present, and for relief of which the patient has applied to me, I recognize that the boundary line has been crossed and adopt my measures to meet the case. If tampons will suffice, well and good; if a pessary can be applied and give relief, it is used promptly. If after a reasonable trial all minor measures are unsuccessful, I explain matters clearly to the patient, advising an operation and, if she consents, I operate as promptly as I use the pessary.

In conclusion: Whatever opinions may be held by the opponents of the pessary, it is an established fact that too large a proportion of cases treated with it secure a symptomatic or positive cure to allow an unprejudiced mind, possessed of these data, to doubt that the pessary has its own proper place in the armamentarium of the gynæcologist and holds a field of usefulness and even importance in the treatment of retrodisplacements of the uterus.

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A DISCUSSION OF THE TREATMENT OF UTERINE RETRODISPLACEMENT.

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The fact of so many operations having been proposed and of so many procedures resorted to for the cure of retrodisplacement of the uterus emphasizes more forcibly than words that there is not one upon which we may rely to accomplish this end in every case. Notwithstanding from the writings and teaching of some members of the profession we might think differently. G. G. Bantock, of Edinburgh, in an article published in the *Journal of Obstetrics and Gynæcology of the British Empire*, January, 1905, advocates the use of the pessary to almost the exclusion of every other form of treatment. There are others as enthusiastic over Alexander's operation or some one of its many modifications, and there are still others who confine their efforts to ventrosuspension and, finally, no less an authority than G. Ernest Herman, advocates ventrofixation (*Journal of Obstetrics and Gynæcology of the British Empire*, January, 1906). The marked and irreconcilably different views entertained by surgeons of prominence on the subject, shows very clearly that it has been considered with entirely too little regard for the principles involved. If we are to keep pace with the progress of the age, we must turn our backs more to the day of empiricism and, as time goes on, we must strike from our eyelids the scales of blind faith and view every condition and every operation from the standpoint of the principles involved.

By retrodisplacement of the uterus we mean a turning backward of its body, retroversion and retroflexion. (The necessity for correcting the abnormality will form the subject of another contribution.) It is impossible to estimate with any degree of accuracy the frequency of uterine retrodisplacement. That it is a very common abnormity no one can gainsay. I attribute its presence in the nullipera more to the pernicious habit of binding the clothing, "tight lacing," around the growing girl's body than any other one cause. Proper regulation in dress, school duties physical exercise, and a moderate care at the "sick time"; in short, a proper regard for the growing body would make uterine retrodisplacement almost unknown in the virgin. A general run down condition of the system may contribute to the production of uterine displacement by weakening the supports of the organ. It may also be a result

of the displacement. Too often, whether an effect or a cause, it is disregarded in the management of patients with uterine retrodisplacement. It matters not what operation is done to restore the uterus to its normal position or how well it succeeds if we fail to give proper attention to the upbuilding of the general system we will not secure a satisfactory result, viz., a feeling of well being.

The question as to the relative frequency of retrodisplacement of the uterus in the nullipara and the multipara has been raised. Now it seems to me that when we recall the condition of the organ and its supports—the overheaviness of the former and the relaxed state of the latter—during the eight weeks required after full term delivery, for the process of involution to return them to their normal nonpregnant state; and also recall the abnormalities too frequently met with as results of traumatism during, or infection following, parturition, we must conclude that the malposition is more common in the multipara. Though it is not my purpose to enter into a discussion of the management of the puerperal state, yet being convinced that a large number of uterine retrodisplacements have, primarily or secondarily, their beginning during this period I feel impelled in this connection to call attention to the subject, and to indulge the hope that it may become customary to examine every woman a few weeks after she has been confined to determine whether or not a displacement exists or, as for that, the presence of any abnormality. If a displacement is detected so soon after confinement the probabilities are, we can, without operative interference, return the organ to its proper position, and by local applications of ichthyol, glycerin, etc., combined with general treatment stimulate a lagging involution to renewed activity that will restore the uterus, its ligaments, and surrounding tissues to a normal condition.

It will not be questioned that the ideal aim in the treatment of uterine retrodisplacement is to restore the organ to its normal position and have it held there by its natural supports. How well this can be accomplished in long standing cases remains to be determined by a careful investigation of the supports, what they are, how they act, in what way may they become faulty, and how may their deficiency be best corrected. Time will not admit of our reviewing this part of our subject as thoroughly as we would like. We can only refer briefly to each of the more important elements which furnish support to the uterus.

That the vacuum force of the abdominal cavity is an important factor in connection with the position of the uterus may be clearly seen in the ascent and descent of the organ, caused by the piston like action of the diaphragm during respiration. Of course, this force is decreased if the anterior abdominal wall becomes flabby and laxed, as it often does in the multipara. Proper care, including a judicial application of an abdominal binder during the puerperium, will generally prevent an impairment of the muscular force of the abdominal wall. When, however, the abdominal muscles have become weak and flabby, physical efforts that bring them in action, combined with massage, will usually increase, if not restore, their strength. Whether we can satisfactorily strengthen a flabby anterior abdominal wall by operative measures, I am not prepared to say.

It has long been a question whether the perinæum, or more properly speaking the pelvic floor, is a uterine support. I am convinced it should be classed as such, for by assisting in the support of the bladder—upon the upper and posterior surface of which the uterus rests—and the rectum, it contributes, though indirectly, to the maintenance of the uterus in its proper position. If this is true it necessarily follows that this structure should be carefully examined when the uterus is retrodisplaced, and any injury discovered properly repaired.

This brings us to a consideration of the tissues surrounding and connected with the uterus. The most important of these are the uterine ligaments. The uterus is necessarily a very movable organ in order, not only to perform its duties, but to adapt itself to the varying states of the other pelvic viscera. Though its ligaments are not kept in a state of constant tension, yet they fix a limitation to its mobility. As long as the posterior pair of ligaments prevents the cervix from sagging downwards and forwards, and the body is held anteriorly and in the median line by the round and lateral ligaments, so long will the surrounding bed of loose connective tissue, the unimpaired floor of the pelvis and the intraabdominal force prevent the uterus from sinking below its proper level. But when the ligaments allow the uterus to become more vertical than normal, retrodisplacement, which by some authors is regarded as the first stage of procidentia, will be the result.

Now, the question that confronts us is, when the uterus has become retrodisplaced, what are the means at our command for correcting the abnormality, and how do they serve our purpose? We will consider first, the use of the pessary. The Hodge-Smith variety of this instrument, or some modification which acts on the same principle, is the only one that deserves notice. The principle involved in the use of the pessary is the tilting of the fundus forward by forcing the cervix backwards and upwards. Of course if the organ is fixed by adhesions the use of this instrument is precluded. Nor do I see a place for it in the treatment of retroflexion. In this condition the cervix is held backwards and upwards in its normal position, but the organ is bent upon itself, forming a concavity posteriorly, in which the upper bar of the pessary would, as it were, fit without correcting the false position. Now when the displacement is due largely to the stretching of the uterosacral ligaments, as in retroversion, the pessary may prove serviceable in some cases. I do not think it should ever be considered a curative agent; because, while it may in effect shorten these ligaments, in reality it does not do so and therefore as soon as it is removed the displacement will return. A woman may become pregnant while the pessary is in position, and after passing through the puerperal state it be found that the retroversion does not return. In every instance of this kind I believe the cure should

be attributed to the physiological activity, produced by the pregnancy, and the subsequent involution, causing the uterine supports to regain their control over the uterus. I have never been able to use the pessary when the ovaries rested on the bottom of Douglas's cul-de-sac. In these cases the indirect pressure of the instrument on the prolapsed ovaries invariably produced distress. To attain in any case success with this instrument, much skill must be exercised in fitting it to the contour of the vagina. When properly adjusted it should produce no symptoms. Though believing it still has a place in the treatment of retroversion, I do not think it is applicable in more than a small per cent. of cases. The mere fact of its being a foreign body and capable of causing local irritation makes it objectionable in every case.

We come now to the discussion of the operative measures proposed for the cure of uterine retrodisplacement, either by restoring to the ligaments their normal function or furnishing substitutes for them. In retroflexion, uncomplicated by any other condition than an endometritis that calls for operative interference, it seems to me the surgical indications are limited to a curettage and an extraperitoneal shortening of the round ligaments. For in these cases the elongation of the anterior ligaments furnishes the principal defect in the support to the organ. I do not believe the structural changes at the point of flexion creates an indication for the removal of a wedged shaped piece transversely from the anterior wall of the uterus. The bending of the organ upon itself is responsible for these changes and, it would seem if the flexion is corrected by properly drawing the body forward, Nature will, in all probability, cause a return to normal. But even if this is not true, I do not see that the removal of the tissue from the anterior wall of the uterus, as has been suggested, would help matters, though it might, by forming a strip of scar tissue in the front wall of the organ at the level of its internal os, prove a source of trouble, should pregnancy occur, in the dilatation necessary for the passage of the child.

As to the method of shortening the anterior pair of ligaments in uncomplicated retroflexion, I do not believe there is any better, certainly no safer, way than exposing them at the external rings, drawing them out, crossing them subcutaneously and attaching each to its fellow and the pillars of the external rings of the opposite side—a modification of Alexander's operation. The ligaments are not hard to find when the operator is familiar with the work. If they are not found at the external rings the inguinal canals may be laid open. The proportion of hernias following this operation is too small to be used against its adoption. Unfortunately, retroflexion comprises only about 13½ per cent. of uterine retrodisplacements (Mundé, *International Medical Association*, 1881). In retroversion all of the uterine ligaments are elongated. But if the displacement is not complicated by any condition that requires the abdomen to be opened, it seems to me, the indications other than those of possible complications are to shorten the uterosacral and round ligaments, without exposing the patient to the danger of opening the peritoneal cavity.

The problem of extraperitoneal shortening the round ligaments has been solved by Alexander's operation. Can as much be said of Bovée's operation on the uterosacral ligaments through the vagina? If so, by combining the two operations into one we will have technics that should prove satisfactory in the treatment of uncomplicated retroversion. I have followed this plan of treatment a number of times, and while I am favorably impressed with it, I am not prepared to take a positive position in advocating it. Because I am not thoroughly satisfied that the damage to the posterior pair of ligaments, resulting from parturition or the sagging downwards and forwards of the cervix uteri, does not make it impracticable to restore their strength in a satisfactory proportion of cases by folding upon themselves. If, however, Bovée's operation will effectually shorten the uterosacral ligaments it is of greater service in the treatment of retroversion than is Alexander's. Because if the cervix is drawn upwards and backwards, which the restoration of the function of the uterosacral ligaments will do, the fundus of the uterus will probably tilt forwards to its normal position. In this case it would only be necessary for each of the uterine supports to do its duty in order to prevent a return of the malposition. In other words, the division of labor would be again properly distributed to the supports of the organ. This is by no means true after Alexander's operation, for the holding of the fundus forward by the shortening of the round ligaments does not correct the downward and forward displacement of the cervix.

And so long as this is not done, it is manifestly true that the long axis of the uterus remains more vertical than natural and the organ, as a whole, occupies a position anterior to the normal. In the presence of both of these conditions it is undoubtedly true that there is an abnormal tendency for the body of the organ to turn backwards and, therefore, the amount of labor by the round ligaments to prevent it doing so is proportionately increased. Now in view of the fact that these ligaments are never called upon to sustain much force for any continuous length of time in the normal state, it is very questionable in my mind whether they should or can be expected to do the increased duty imposed upon them, when Alexander's operation is alone done for retroversion. I, of course, do not mean to say that this operation will invariably fail to cure retroversion. But that it will do so too frequently to warrant our pinning our faith to it seems to me quite probable.

The next step in our discussion is a consideration of the cases necessitating the opening of the peritoneal cavity. Should the vaginal or abdominal route be used? The advocates of the former claim that they can shorten the ligaments and do almost anything else to the contents of the pelvic cavity through a T shaped incision in front of the cervix. Also that there is less shock attending and fewer troublesome symptoms following this than the suprapubic opening. The supporters of the upper route assert that it brings

the field of action under better control; that Trendelenburg's position and the use of pads to keep the intestines out of the pelvic cavity, and thereby from being handled, has reduced the shock and the troublesome after symptoms to practically the same that attend and follow the lower operation; that one should be able to protect his field of action equally as well if not better when working above than below; that the stretching and tearing of the tissues at the base of the bladder by the subpubic operation is liable to interfere with the proper support of this organ, which, as we have pointed out, has an indirect, though probably important part in the maintenance of the uterus in its correct position. It appears to me that the arguments in favor of the upper opening are well founded and I am, therefore, inclined to advocate it in preference to the lower approach. In short, unless there is something which does not appear to me now to commend Vineberg's, Bode's, and Goffe's operations other than the advantages stated for the lower route as a means of approach, they are not, in my opinion, as desirable as one of the methods of shortening the round ligaments through the upper incision. The plan of sewing the body of the uterus to the edges of an incision through the anterior wall of the vagina (Mackrodt, Winter, Dührssen, and others) does not, it seems to me, present anything to commend it to a favorable consideration.

Having opened the abdomen suprapubically and properly dealt with the complications of the retrodisplacement, we must decide upon a method for holding the uterus in its proper position. If the displacement is a retroflexion I believe any of the methods of folding the round ligaments upon themselves will suffice. If it is a retroversion then the question of shortening the uterosacral ligaments must be considered. Unless this can be done, I do not believe the folding of the round ligaments upon themselves or upon the front of the uterus will effect a cure sufficiently often to be satisfying, because I seriously question whether adhesions between folds of the ligaments are capable of withstanding any considerable amount of tension. Bovee says that the posterior pair of ligaments can be successfully shortened through the upper approach as well as through the vagina. Of course, the same questions concerning the shortening of the anterior and the posterior pair of ligaments are involved here that we have considered in connection with uncomplicated retroversion.

There is but one operation on the round ligaments for retroversion that has, unassisted, proved satisfactory in my hands, viz., Ferguson's or Gilliam's operation. I have comparatively recently resorted to this method with much success. An examination after this operation will show the long axis of the uterus more vertical than, and in a plane anterior to, the normal, just as it is after Alexander's operation. This position of the organ, as we have previously said, necessarily increases beyond normal the tension on the round ligaments. But they seem to bear the increased burden better than after Alexander's operation or any of the methods of folding the ligaments upon themselves or upon the front of the uterus. The explanation of this is: First. Not only are the strongest portions of the ligaments, viz., those nearest the uterus, but also the tissues covering them put in use by being brought out through the openings to the sides of the medium incision. Second. The anterior supports to the uterus thus formed by the ligaments and their coverings goes directly forward from the organ to the abdominal wall. It has been said that after this operation the fundus of the uterus may become attached to the abdominal wall, or intestinal obstruction result from the passage of a loop of gut in front of the ligaments. Neither of these dangers should exist, because it is not necessary to bring the fundus in contact with the abdominal wall, and the space in front of the ligaments may be closed, as has been suggested by Ferguson.

Several operations have been performed on the broad ligaments, and though I see no objection, if the abdomen is opened, to taking a tuck in these structures, I do not think it is specially indicated, or that any operation that is confined to them will serve as a curative measure for retroversion, for I believe their supporting function is more in connection with the downward than the backward displacement. Bissell's operation, styled the "internal shortening of the round and broad ligaments," consists, in the language of Cleveland, "of cutting out a section on each round ligament, sewing the ends together, then stretching out the rent in the broad ligaments in opposite directions, and sewing them together at right angles to the round ligaments (*American Journal of Gynæcology*, 1902, i). I can hardly conceive of union between the ends of a cut round ligament being able to bear any considerable amount of tension, nor does it seem to me that the closure of the openings in the broad ligament would materially shorten or strengthen these structures. I am therefore unable to join Dr. Cleveland in his endorsement of this operation.

The plan of cutting the round ligaments loose from the uterus, threading them through the broad ligaments, and sewing the free ends to the posterior surface of the organ (E. C. Frisbee, San Francisco) has no advantage of the methods of shortening these ligaments at their anterior extremities. But to my mind is inferior in two respects: First, it transfers the point of tension on the uterus nearer the lower pole of the organ and thereby increases the force necessary to keep the fundus forward. Second, through the severance of the principal origin of the funicular artery the blood supply to the round ligaments is reduced, and thereby their strength probably impaired.

Baldy draws the round ligaments through openings made in the broad ligaments, to the posterior surface of the uterus, where they are fastened at the level of the internal os. He does not make it clear whether or not he severs them from their normal uterine attachments. He states that the uterus is tilted forward to a "normal anterior position," "that the whole pelvic floor is lifted from its sagging position," and that the ovaries and tubes are lifted up and supported.

I hardly think the first can be true, for it does not seem to me that the transferring of the attachment of the round ligaments from the upper to the lower end of the uterus would tilt the body, though it might pull the whole organ forward. That the operation will give some support to the uterus and the ovaries, I have no doubt, but I cannot bring myself to the opinion that it will "lift up the whole pelvic floor from its sagging position."

We come now to the operation of ventrosuspension. When the physiological activity of the uterus is at an end, either as a result of normal or artificial menopause, I see no objection to doing ventrosuspension other than the small risk of intestinal obstruction by the wrapping of the bowel around the artificial band. When the uterus is active, particularly if pregnancy is a probability, I do not think ventrosuspension can be considered a satisfactory procedure. When I recall that in pregnancy the uterus rises above the umbilicus, I am forced to believe that the false band extending from the anterior abdominal wall to the uterus—particularly if to a point on the posterior surface of the organ as in Kelly's operation—will either stretch beyond recovery, break, terminate the pregnancy prematurely, or produce a condition that will cause dystocia. The last is done by holding the fundus downward and forward, necessitating the cervix and the lower end of the uterus rising upwards and backwards to, if not above, the sacral promontory. In other words, causing the growing organ to turn almost upside downwards, and such a condition has been found. Where pregnancy and confinement has followed this operation without abnormal manifestations or a return of the organ to its false position I believe the artificial band broke or stretched beyond repair; but that the physiological activity in the uterus and its surrounding tissues, inaugurated by the pregnancy, caused them to return to a condition so nearly normal as to enable the supports to do their duty.

If what we have said is true of ventrosuspension how much greater must be the risk after ventrofixation. To my mind this operation has absolutely no place in the treatment of retrodisplacement when the uterus is physiologically active. Indeed, I would not have regarded it of sufficient importance to have been mentioned in this connection had it not been for a recent contribution from so prominent a gynæcologist as Dr. Herman, advocating it in preference to other operations. In order to be certain to get fixation, Dr. Herman strips the peritonæum from the area to which the uterus is to be sewed and attaches the front of the organ directly to the muscular structure of the abdominal wall midway between the umbilicus and the symphysis pubis. He asserts that there will be no interference with the function of the organ. That an organ like the uterus, whose functions requires it to undergo such marked changes in size, can be made immovably fast to a point on the abdominal wall, and its physiological activity remain unhampered, does not appear reasonable, nor is it borne out by the recorded experience of the profession.

TYPHOID INFECTIONS OF THE APPENDIX.

By Maynard A. Austin, M. D.,
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Kelly says: "A case of appendicitis clearly demanding immediate interference ought to present the syndrome of pain, tenderness, muscular rigidity and fever." Richardson says: "Let any of these symptoms be absent, and doubt as to the existence of an acute appendicitis arises." Murphy with an experience of eight typhoid cases operated in his first three and refused to operate upon his later cases, all recovering. His conclusions were that "An operation should not be performed, except in special cases." Murphy further says that a perforation is about the only symptom demanding surgical interference in a typhoid infection of the appendix. Cushing, however, has collected seven cases of perforative typhoid appendicitis operated on, and but one of the cases recovered. When the last two paragraphs are considered it becomes evident that Dr. Murphy's radicalism in his first three cases and his conservatism with his last five patients, gives us little knowledge outside of statistics. Typhoid appendicitis terminates by resolution or by perforation. If eighty-five per cent. of the cases die following perforation it would seem bad judgment to allow perforation to occur before operating, and this is what Dr. Murphy's statements indicate.

A simple appendectomy is usually all that is found necessary in early typhoid cases, and all the cases in the literature at my disposal show the deaths after appendectomy in these cases to have occurred from some later complication of the typhoid fever, and not from any immediate result of operative interference.

The question of diagnosis of typhoid fever and appendicitis from the usual source of infection may seem easy to solve until one has had the experience of being called in to distinguish such conditions. Two such cases having been referred to me in consultation in the last year, it is my pleasure to make brief report of them:

Case I.—On August 23, 1906, I was called to Alexandria by Dr. Keller to see Mrs. C——, who had become suddenly ill four days previous. She was subject to chronic constipation, but gave no history of any special symptoms prior to the day Dr. Keller first saw her. She took sick with pains in the abdomen, sickness at the stomach, and attempts at vomiting; pain slowly became localized on the right side, with the onset of a slight amount of fever; tenderness, which at first was shown over the entire abdomen, became localized to an area of the size of a dollar, exactly over the middle point in the line, passing from the right anterior superior spinous process of the ilium to the umbilicus.

The patient was a young woman with two children, of a nervous temperament, and after the second day complained so seriously of the pain that opiates had to be administered to give her some relief. The only sign lacking to make the diagnosis of appendicitis conclusive was the absence of muscular rigidity. This was not marked at any time during her illness. On the fourth day I was called in consultation and found the woman suffering great pain, with a limited area of tenderness, a fever of 101.5°, pulse 110, general abdominal symptoms excellent, no sign of tympany or intestinal paresis, no evidences of perforation, no signs pointing to hepatic or renal colic, bowels moving freely when stimulated.

Lacking the evidences of abdominal rigidity, and sus-

pecting the pain to possibly be exaggerated by the nervous temperament of the woman, operation was not advised, but the application of an ice bag to the right ileac region was suggested as a possible means of relief. The question of typhoid possibilities was fully considered, and yet further symptoms were necessary for corroboration or otherwise. During the next two days there was little or no change, the ice bag controlling the pain to a great extent. The temperature showed a little rise, going up to 102°. The bowels were active, and the abdomen otherwise normal.

On the seventh day the pain became suddenly aggravated, and the ice bag not giving relief, it was removed, and hot applications applied. Temperature became elevated to 104° in the evening, and signs of a collapse was accompanied by tympany. Opiates were finally resorted to, and I was telephoned to see her again, and to come prepared to operate if I found it necessary. On arriving early next morning I found that the temperature had fallen again, the patient had required several hypodermics of morphine ere I arrived to give her relief from the pain, the area of tenderness was still limited in extent, there was no sign of a tumor, and very little rigidity. Summing up the symtomatic evidences, the patient was rapidly getting worse, the cause of the worst symptom was located undoubtedly in the appendix, and its removal was indicated, inasmuch as morphine could not be indefinitely continued, awaiting a definite lesion, demanding immediate surgical intervention.

Operation revealed the lower portion of the ileum, the cæcum, and the appendix involved in a profound infection, the lymphatics enlarged and almost black in their turgescence. The appendix was swollen, vessels dilated and congested, a few adhesions bound its tip to the pelvic wall, and its removal was rapidly accomplished. Following the operation the pain disappeared, and on removal of the dressings a few days later a few rose spots were apparent. The abdominal wound closed primarily, and the case proceeded uninterruptedly as a typical typhoid case thereafter.

There were evidences of degenerative changes in the tip of the appendix, which I believe would have terminated in a perforation had the case continued without interference twenty-four hours longer.

Now in this case the symptomatic evidences of typhoid were entirely overshadowed by the signs of the appendix lesion. Yet the appendix lesion was such as to produce no abdominal rigidity. The pain itself was in this case the immediate symptom demanding relief, inasmuch as its sudden aggravation was accompanied by signs of collapse and a rapid rise in temperature.

CASE II.—A short time after this I was called to Fairmount by Dr. Charles to see a patient in the third week of a severe typhoid infection, who had suddenly developed acute pain, tympany, and exaggerated tenderness over the right side. On careful examination I eliminated the possibilities of a perforative lesion, and by auscultation of the region about the ileocæcal valve, determined that the source of trouble lay in a probable ulcer at that point. The gas would periodically accumulate in the lower part of the ileum, and on its discharge through the ileocæcal valve (which could be easily distinguished with the stethoscope) the pain would become excruciating. This condition continued about two days, but under the influence of turpentine stupes and high colonic irrigations, the excessive tympany was reduced, and the pain allayed. Patient went on thereafter through a normal though protracted convalescence.

Killiani reports two cases similar to the one of Dr. Kellers. He says both had the following clinical picture: "The patient had an acute attack of appendicitis, localized pain, tenderness, abdominal shock, vomiting, temperature going up to 104°, pulse to 120. Extirpation showed a beginning typhoid ulcer of the appendix, with typhoid bacilli. Later on, general, well marked typhoid symptoms followed with recovery." Killiani further remarks that "I am under the impression that in both cases the typhoid ulcer would have perforated but for the operation."

359 UNION BUILDING.

ELECTROLYSIS IN THE TREATMENT OF DEAFNESS DUE TO STRICTURE OF THE EUSTACHIAN TUBES.

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A considerable proportion of all cases of deafness of the nonsuppurative variety are due either wholly or in part to stenosis or narrowing of the Eustachian tubes. This narrowing may be caused by a general thickening of the mucous membrane and submucous structures throughout the whole length of the tube, or a stricture may exist at one or more points only. A favorite site of obstruction is at the junction of the cartilaginous and bony portions of the Eustachian canal, *i. e.*, about half an inch from the tympanic end of the tube and one inch from the nasopharyngeal opening. In many cases the stenosis is found in the first half inch, and in others an organized deposit (the result, probably, of a former acute catarrhal otitis) is discovered blocking up the tympanic tubal orifice. These strictures increase in density with age, being easily penetrated or stretched in young persons, and often of almost cartilaginous hardness in middle or advanced age, where the lesion has lasted a long time.

As long as there has existed a science of otology worthy the name, this condition has been recognized, and attempts made to overcome it. Gradual dilatation by forcing in currents of air under pressure, the injection of stimulating fluids and vapors designed to absorb the adventitious tissue, and finally the passage of bougies of various substances have all been employed with varying success. Of late years the principle of electrolysis has been used, following reports of this method in the dilatation of urethral strictures. The method was advocated by several European otologists, and Dr. Duel, of New York, was instrumental in placing the perfected technique before the profession of this country several years ago. Since then the subject has received a good deal of attention, and many reports, some enthusiastic, others lukewarm, have been published. The present writer has had such uniform success with the method in the cases it was designed to help that he is a frank advocate of the procedure, and the following cases are selected as showing the type of patients benefited by it:

Two symptoms are prominent in stenosis of the Eustachian tube—deafness and tinnitus. Impairment of hearing may be of any degree, but is

usually not extreme; the noises faint or intolerably distressing.

Case I.—C. S., a fireman, aged thirty years, presented himself with a history of fine high pitched ringing in the ears which had persisted for over a year, following a succession of colds in the head. Deafness was slight and not an item of complaint. Shortly after the onset of the aural disturbance, fearing deafness, the patient had sought treatment at a clinic, and had his ears inflated by the Eustachian catheter twice a week for nearly a year. No improvement in the symptoms was experienced, but it was possible to obtain a better inflation as time went on.

On examination the hearing was found slightly diminished, the ear drums somewhat retracted, and both Eustachian tubes uniformly and firmly contracted throughout their whole length. Treatment consisted in passing the electric bougie once in two weeks with one or two inflations in between. The current was used for about five minutes in each ear. For inflation a stimulating vapor of iodine, menthol, and camphor was employed. Improvement began to be noted in about two months, and gradually the tinnitus passed away, first absenting itself in the evening. Treatment was kept up with diminishing frequency for seven months. At the end of this period hearing was practically normal, and tinnitus had been absent for some weeks. There has been no relapse during the year that has passed since treatment ceased.

In this case it will be observed that the ordinary method of treatment had been persisted in with exceptional faithfulness, both on the part of physician and patient, and it is possible that in time relief might have come by this means. As a matter of fact, however, no improvement was had until the bougie was used.

Case II.—Mrs. S. V., a housewife, aged thirty-five, came for treatment of deafness and "stuffiness" in left ear. She had been hard of hearing for some time on the right side, but the present acute condition in the left ear alarmed her. The acute symptoms complained of were found to be due to impacted cerumen, and prompt improvement followed its removal. Both ears were then tested with the following result: Right ear, watch one inch; forced whisper, fifteen feet. Left ear (the good one!), watch one inch; whisper, sixteen feet. Upon inflation with the catheter, it was found difficult to force air through the left tube, its walls being soft, swollen, and œdematous. The drum on this side was slightly retracted and pinker than normal, and a diagnosis of hypertrophic O. M. C. C. was made. Tinnitus was present, but patient was not much annoyed by it. The bougie was passed at intervals of ten days, one treatment by inflation with the stimulating vapor before mentioned intervening. In two or three weeks the tube was well open, the sounds heard through the auscultation tube nearly normal, and hearing so much improved that patient was content to stop treatment. On the right side the condition was of much longer duration, the drum much contracted, dead white and thickened, and the tube fairly patent. Here little improvement could be expected in such a short period, and little was had.

This case would, with reasonable certainty, have been equally benefited by simple inflation, but it would have been necessary to continue treatment for a much longer time. It was remarkable how quickly the swollen and thickened mucous membrane both of the tube and middle ear returned to a condition approaching the normal under the application of the electrified bougie.

Case III.—S. W., a physician, aged forty-five, had noticed gradually increasing deafness in his left ear during a period of about a year, with at times loud roaring tinnitus. The tinnitus had become very troublesome of late, and the deafness prevented the use of the ear in examining the chest or even in using the telephone. On testing it was found that the watch was heard only on contact, acumeter at three inches, and forced whisper fifteen feet. The drum was much thickened, opaque, and slightly retracted. The Eustachian tube did not seem to be markedly obstructed, although inflation was not thoroughly satisfactory. Treatment by inflation per catheter was kept up irregularly two or three times a week for several months, periods of relief from tinnitus and some improvement in hearing being obtained, but always relapsing on cessation of treatment. Finally the bougie was suggested and accepted. Tinnitus disappeared after the second treatment with this instrument, and has not returned for several months. The hearing distance was more than doubled in the following month, and the patient felt relieved from all symptoms, using the ear as before in physical diagnosis.

Here again inflation was given a thorough trial and accomplished very little until the tube was thoroughly opened with the bougie. The stricture in this case was in the bony portion of the tube and was quite dense.

Case IV.—H. G., hotel keeper, aged fifty years. This man gave a history of marked deafness in both ears for over twenty years. The auditory disturbance appeared and reached its maximum in about a year. During this time he had a series of colds, and an attack of malarial fever for which he took large doses of quinine. During the succeeding years he continued taking quinine on and off for neuralgia. Examination of the ears showed both drums to be very much retracted and shrunken, presenting to the eye about half the normal area. Both Eustachian tubes were stenosed to an extent that I have never seen equaled in any other case. It was possible to get an occasional puff of air into the middle ear only when great force was used, when the catheter was crowded snugly into the tubal orifice, and when the patient made the effort of swallowing at precisely the right moment. He had been under treatment for months at a time, with many different specialists, and he stated that he had never before felt the air penetrate into the ear. It is a noteworthy fact that no one had attempted to employ the bougie, and no investigation of the tube had been made except the futile efforts to inflate with the catheter.

Hearing tests showed no perception of watch, acumeter, or whisper. The raised voice was heard two to three feet, but a good deal of dependence was placed on lip reading. Bone conduction was nearly normal on both sides. With such an amount of obstruction in the conductive mechanism, we would naturally expect greatly increased bone conduction. The test was therefore interpreted as showing a certain amount of labyrinthine involvement, due probably to the quinine. It therefore became a nice question as to how much improvement, if any, was to be hoped for as a result of opening up the tubes, and the partial restoration of the drums and middle ear to their normal condition.

Numerous sittings were required to penetrate the tubes with the bougie. One dense stricture was passed only to encounter another. On the right side the bony canal appeared to be solidly filled up. Finally the tympanic cavity was reached, but the channel thus made promptly closed again. On the left side the condition was not so obstinate, and the tube was opened to practically the normal extent. The patient was then taught the use of the Politzer bag, and this was put into his hands to use night and morning. By this means he can now get the air into both ears, and the ultimate

result is to about double the amount of hearing he possessed. Instead of being very deaf, he is now only "hard of hearing," and the difference thus expressed was a welcome improvement to a patient who has a business to carry on. The moderate tinnitus which he complained of was not influenced to any appreciable extent, and it is probable that his habits as to quinine may have done permanent damage to the labyrinth.

In all of these cases the indication was plain, to render pervious the Eustachian canal, and with one exception this was accomplished with the bougie. Symptoms due to other lesions must be reached in other ways. There is, it must be remembered, always trouble in the middle ear when the tube is stenosed and the normal air pressure in the tympanum reduced. But this cannot be satisfactorily treated until the tube is rendered patent.

Not a few aurists declare that they achieve equally satisfactory results with hard rubber or whalebone bougies. My own experience has been diametrically opposite, but the larger calibre of these bougies is advantageous in stretching strictures near the mouth of the tube immediately following electrolysis. I have not found them of any service in stenosis of the isthmus or of the bony canal. The electrolytic method, on the other hand, is least satisfactory as to permanency in hard strictures near the pharyngeal end of the tube. These strictures are somewhat similar to those in the urethra, for the cure of which this method was originally devised and speedily abandoned. These tissues are elastic and somewhat erectile, and strictures in them tend to contract after dilatation.

For the benefit of those who may not be familiar with the technique a brief description of the procedure is added. The apparatus consists of a gold wire, olive tipped, bougie attached by a cord to the negative pole of a galvanic battery of sufficient voltage to overcome the body resistance. Forty volts is strong enough. An ordinary hand electrode is connected with the positive pole of the battery, and grasped by the patient. The Eustachian catheter, insulated by winding with rubber tissue, is placed in position and the ear inflated in the ordinary manner to make sure that the catheter is properly situated. The iodine, menthol, and camphor vapor is used in inflation, and I believe has a valuable influence in preventing infection. The bougie is now passed through the catheter, and on through the tube as far as it will go without exercising force, and the current turned on until three to five milliampères are indicated by the meter. No stronger current is necessary. The sensations of the patient must also guide the surgeon, for pain should be avoided. Having engaged the stricture, the bougie is allowed to lie snugly in contact for a few moments, when it will be found possible to advance the point a short distance. This manœuvre is repeated until the stricture is passed and the surgeon is satisfied that the tube is open, when the bougie is slowly withdrawn and the current turned off. Often the patient will notice a fine crepitation while the bougie lies in contact with the obstruction, and this is taken to mean that the electrolytic process is going on satisfactorily.

Inflation should be performed before, but not immediately after the bougie is used, for fear that air should be forced through a possible puncture of the mucous membrane into the loose surrounding tissues, and so set up a traumatic emphysema. Treatments with the bougie should be about ten days apart, with one or two inflations between.

The main elements of success with the method are time and patience. The surgeon must be prepared to devote from one half to three quarters of an hour to a treatment of this sort, and this has, I believe, been a factor in rendering the method unpopular with some busy otologists. Where, however, the requisite time is given and patience and care exercised in the technique, results are generally satisfactory and often brilliant.

79 WEST ONE HUNDRED AND FOURTH STREET.

DIAGNOSIS OF TUMORS OF THE STOMACH.*

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(From Professor Sailer's Clinic for Diseases of the Stomach and Intestines, Philadelphia Polyclinic Hospital and College for Graduates in Medicine.)

Tumors of the stomach are formed (1) by the organ itself in a condition of abnormal dilatation or contraction and (2) by nodular or massive outgrowths of its walls (Osler).

The tumor produced by a dilated or dislocated stomach is not a tumor in the true sense of a neoplasm or new growth, but the changes in the size, shape, and position of the stomach bring about alterations in the appearance and contour of the abdomen suggesting the presence of a neoplasm. In these cases the outline of the stomach can frequently be seen through the abdominal wall, particularly in patients who are emaciated and whose abdominal walls are thin and relaxed. In other cases, although the abdominal walls are moderately thick, the region occupied by the stomach may be seen to protrude above the level of the abdomen, with, at the same time, if gastroptosis be present, a sinking in of the epigastrium. Gastroptosis and dilatation of the stomach are not infrequently produced by a tumor of the pylorus. There are, however, many cases in which no tumor is present.

Tumors of the pylorus are usually, but not always, associated with dilatation of the stomach. In Osler's series of thirteen cases of dilated stomach, the organ itself formed a prominent tumor on inspection in ten. In all of the cases the existence of a nodular pyloric tumor was determined. A dilated or dislocated stomach may occupy any or nearly all the regions of the abdomen.

Fig. 1 shows a case of complete gastroptosis in which the stomach formed a prominent tumor.

CASE I.—Annie H., white; aged sixty years; single; born in Ireland; cook by occupation. Family history negative. Previous history: measles and rheumatism. She has been suffering from dyspepsia for the past twenty-five years. In the last five years her symptoms have become more marked and there has been a gradual loss in weight. Her appetite is poor and she is un-

* Read at a meeting of the Kensington Branch of the Philadelphia County Medical Society, 1905.

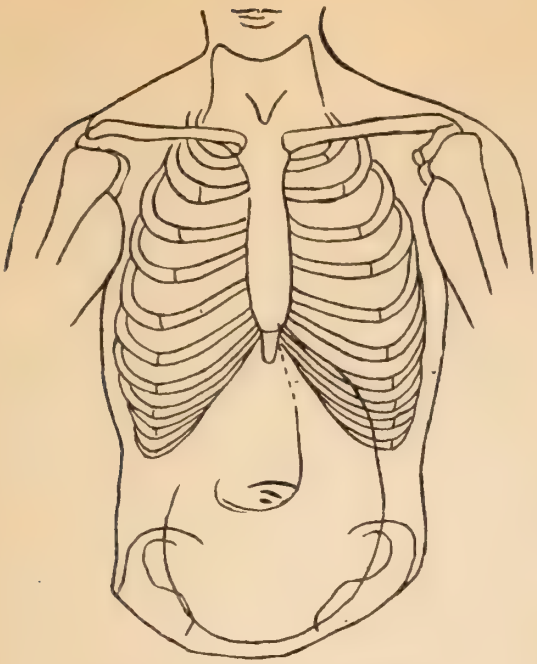

FIG. 1.—Gastroptosis with ectasis.

able to eat solid food. Thirst is not excessive. Vomiting occurs about an hour after eating. There is considerable belching and regurgitation, also a burning feeling in the stomach which begins about an hour after eating. Pain is not present. The bowels are constipated. When asked the question if she removed her false teeth before eating, a practice, by the way, which is not uncommon, she gave an affirmative answer.

Physical examination: Small woman of slight build and poorly nourished; color good; lungs negative. Apex beat of the heart is in the sixth interspace in the nipple line. Inspection of the abdomen shows a mass filling the whole lower quadrant below the umbilicus, with a distinct groove in the median line produced by the recti muscles. Peristaltic waves can be seen in the left side of the mass passing downward and to the right and apparently terminating in the mass on the right side, where the movements are from below upward. The peristaltic waves pass more slowly across the median line. There is a tympanitic note on percussion all over the mass. On palpation the mass is soft, elastic and compressible. Splashing can be elicited in the whole lower abdomen. CO_2 inflation confirmed the diagnosis. The abdominal walls are weak and relaxed, and Webster's and Stiller's signs are both present.

As in this case, a diagnosis of the position of the stomach can frequently be made on inspection alone. However, it is not advisable for one to limit the examination to inspection, but it is even necessary to carefully and systematically go through the routine of inspection, palpation, percussion, and inflation.

In many cases of gastroptosis the signs are usually not so pronounced as were those in the case to which I have just referred. In that case the signs were very marked, even with the patient in the recumbent position. In other cases of gastroptosis when the patient is standing, the viscera gravitate toward the lower abdomen giving it a very prominent and almost characteristic appearance of the disease.

Fig. 2 shows a case of gastroptosis in which the stomach could be plainly seen through the abdominal wall to follow the respiratory movement of the diaphragm. It was most visible in the median line and the centre of its transverse diameter, which was fourteen centimeters, was at the umbilicus. The downward displacement with each inspiration was 1 centimeter. Both the lesser and the greater curvatures of the stomach were visible. A subsequent radiograph taken of the stomach in this case showed the organ to occupy a slightly lower position.

There are two conditions in which the stomach itself, in a state of contraction, may form a definite, palpable tumor; first, in occlusion of the œsophagus, when the organ shrinks and may be felt as a narrow, firm cord, lying below the margin of the left lobe of the liver; second, when there is diffuse thickening of the stomach walls with contraction of the lumen in cirrhosis or in diffuse cancerous infiltration (Osler). In occlusion of the œsophagus contraction of the stomach occurs, as a result of the long continued emptiness of this viscus.

When the stomach occupies its normal position fully two thirds of it lies beneath the ribs in the left hypochondrium, and in contact with the abdominal walls are only part of the body and the pyloric region. Practically, however, we find that the organ is often depressed and so enlarged that a much more extended area is exposed for palpation. The only fixed portion of the stomach is the cardiac orifice, which is deeply situated, covered by the left lobe of the liver, and externally corresponds to the junction of the seventh left costal cartilage with the sterum. Tumors of the cardiac orifice cannot be felt at all, even when extensive. Those of the fundus, posterior wall, and a considerable part of the lesser curvature can only be felt when of large size. Tumors of a considerable extent of the greater curvature and a large section of the anterior wall are in accessible situations.

The pylorus in its normal position is usually covered by the liver, and is situated about an inch below and to the right of the xiphoid cartilage; when the organ is distended the pylorus is forced downward and further to the right to the extent of about

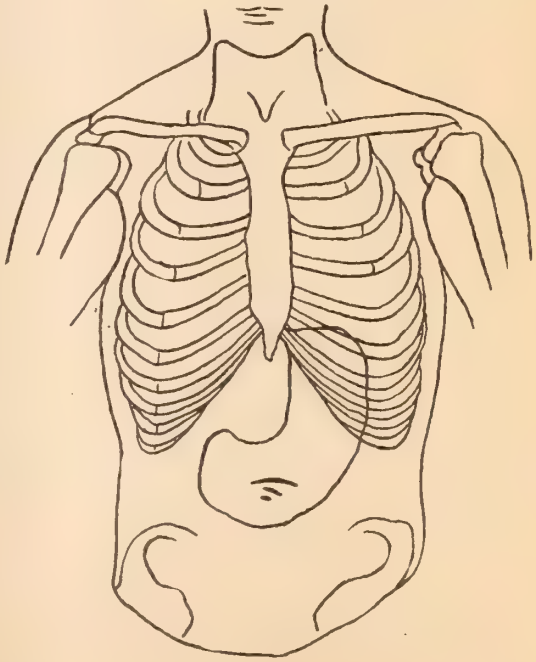

FIG. 2.—Gastroptosis in a woman of twenty-eight years

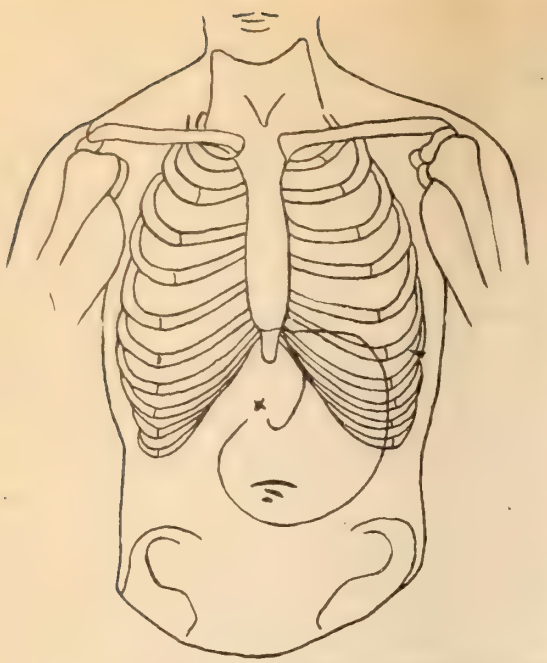

FIG. 3.—Subvertical gastroptosis with a probable palpable pylorus from Case II.

one or two inches. The normal pylorus forms a definite ring like muscular valve readily to be seen and felt when the organ is exposed, and it can also be felt through the abdominal wall during life under favorable conditions; that is, when the stomach is depressed or in a state of atony and the pyloric ring is below the edge of the liver, particularly in cases with a thin abdominal wall. If the pylorus is palpable, it is felt as a small, transversely placed cylindrical body varying in position with respiration, and which sometimes gives the impression of a structure alternately in contraction and relaxation. In some cases it may even be rolled beneath the finger, and at intervals gas may be felt bubbling through it. On auscultation gas, more pronounced after inflation, or the peristaltic sounds produced by escaping contents of the stomach into the duodenum may be distinctly heard. These sounds are best heard by having the patient lie on his left side as pointed out by Cannon, and as I, myself, have also observed, and placing the stethoscope over the pyloric region.

Fig. 3 shows a dislocated stomach with a small mass in epigastrium which is probably a palpable pylorus.

CASE II.—M. L., female; colored; aged forty-two years; housekeeper. Family history is negative. She gave a previous history of having had peritonitis ten years ago; otherwise she has been healthy. Complains of headache for the last six weeks, lasting five or six days at a time, accompanied by nausea and vomiting. She has a pain in the heart and feels weak. Appetite is poor, and there is a full and heavy feeling after meals. Considerable belching and regurgitation of liquid from the stomach. Bowels are constipated. Cough and dyspnœa. Her normal weight is 137 pounds, and at present she weighs 136 pounds.

Physical examination: Build normal; tongue clean; teeth are in good repair; lungs and heart are negative. Shape of the abdomen is concave and tension of walls lax. Slight separation of the recti muscles, the tenth ribs are attached by their cartilage to the ninth, etc. Abdominal distension and epigastric pulsation. There is tenderness in the epigastrium and at the sides of the spine. Liver and right kidney are palpable. Spleen is not palpable; no splash in the colon. The position of the stomach as outlined by direct and auscultatory percussion, by the use of tuning fork percussion, and by the gastrodiaphane used with a transilluminating medium is shown in Fig. 3. The mass in the epigastrium is marked, and is a smooth, firm, cylindrical shaped body. It has a diameter of about half an inch; no friction. The pulsation is transmitted from the aorta over which it lies. It is not tender; no thrill. Marked respiratory and passive motility are present. There is no cachexia.

The most common form of tumor of the stomach is carcinoma. Sarcoma is only occasionally met with. Harlow Brooks, *Medical News,* July 15, 1905, pp. 119-122, found sarcoma of the stomach four times in 1,200 autopsies, and of the 175 cases of sarcoma of the alimentary canal collected by Corner and Fairbank, fifty-eight were of the stomach. Myoma, fibroma, and lipoma are occasionally observed; sometimes these form polypoid growths, and in other cases the neoplasm is sessile (Coplin). Cicatricial contractions, and thickening due to ulcer, hypertrophy of the musculature of the pylorus, tuberculous lymph glands, etc., also produce tumor masses of the stomach.

In a series of thirty-eight cases reported by Nordman from Körte's Clinic in which resection of the stomach was performed for tumor, carcinoma was present in thirty-six; one was due to sarcoma, and one was due to tuberculosis. These last two tumors were both of the pylorus and were both palpable before operation. The most frequent site of tumors of the stomach is at the pylorus, and these usually lead to obstruction of that orifice. Pyloric constriction and obstruction are less frequent in sarcoma than in carcinoma, and according to Coplin about one-third of the cases of sarcoma involve the pyloric region. Stenosis of the pylorus and of the cardia are occasionally relieved by a sloughing of the tumor. Cancer of the body of the stomach in some instances produces hourglass contraction.

Inspection alone can occasionally reveal the presence of a tumor of the stomach. This mode of examination may teach us where the swelling is located, whether it is movable, and in what direction it moves. It may show us that the stomach is dilated or dislocated, or may lead us to suspect some obstruction to the pyloric orifice of the stomach whenever we see visibly increased peristaltic waves in ectasis. In some cases the tumor itself is visible beneath the skin. Tumors of the stomach follow the respiratory movements of the diaphragm. Respiratory motility occurs in ectasis and also in cases of gastroptosis; however, the motility will be very slight, if not lost, in cases in which the stomach is no longer in contact with the diaphragm, i. e., in complete gastroptosis.

In general, tumors of the curvatures of the stomach show greater respiratory motility than do tumors of the pylorus (Riegel). The type of breathing must always be considered when estimating the significance of respiratory motility, as many patients when they are requested to take a deep breath are in the habit of performing costal respiration, that is, they dilate the thorax, and the epigastrium, instead of being pushed out, is drawn in. According

to Riegel, the determination of expiratory fixation of tumors of the stomach is more important for the diagnosis than the test for the respiratory motility of the organ, and quotes Minkowski who first described this phenomenon, "If a tumor belong to the stomach, the intestines or the mesentery is grasped between the fingers and fixed in one position at the height of inspiration, the upward movement of the tumor on expiration can be prevented. If the tumor of the stomach is adherent to the liver, this is impossible, nor is it possible in tumors that belong to the liver or the spleen." If the whole stomach is dislocated it is particularly easy to prevent respiratory upward movement of the tumor by fixation. The tumor is always larger than you expect from an examination through the abdominal wall. This is important and should be borne in mind when considering the advisability of operation.

Case III.—*Cancer of the Pylorus.* The position of

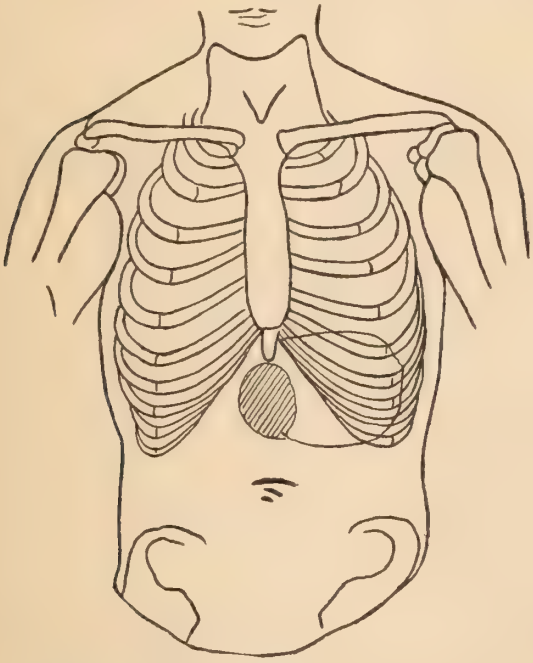

Fig. 4.—Cancer of the pylorus in Case III.

the tumor is shown in Fig. 4. P. H., male; white; born in Ireland; sixty years of age; married; occupation laborer.

Previous history: He had mumps, scarlet fever and varicella when a child; typhoid fever at thirty-one and variola at thirty-two years of age, but enjoyed good health from that time until one year ago, when he met with an accident and fractured his ribs on the right side. Recovery was uneventful. Present condition began in April, 1905, or six months before coming to the clinic, when he complained of a severe pain in the epigastrium, a little to the left of the median line. This was later followed by vomiting, which occurred after each meal. He also complained of feeling weak and tired. In the early part of June he was admitted to the University of Pennsylvania Hospital, where he remained for about a month. A diagnosis of carcinoma of the stomach was made. Some time in June the pain which had been constant up to that time suddenly disappeared after drinking a glass of ale; however, the pain returned and occurred together with nausea and vomiting after eating. His stomach is tender to pressure, appetite is poor and the bowels are regular. He has lost thirty-five pounds in weight in the last six months.

Physical examination: Large man; nutrition fair; color pale; teeth defective. The tongue is moist and coated white in the centre. Lungs and heart are negative. Inspection of the abdomen shows a large globular swelling in the epigastrium in the position of the pyloric region, and it extends from the xiphoid cartilage to a point midway between the ziphoid and the umbilicus. The mass is seven centimetres long and five centimetres in breadth, oval in shape; its surface is smooth; no friction, and it has the consistency of cartilage. There is a pulsation which is apparently transmitted and not expansile. No thrill on pressure. During respiratory motility it descends three centimetres; at the end of inspiration the fingers can be placed between the mass and the liver, and the upward movement of the mass can be prevented. There is also free, passive motility, due to gravity, as it drops when the patient stands. Percussion gives a tympanitic note. On auscultation there is a dull thud, synchronous with the systolic pulse. The surrounding structures are not involved. There is a mechanical obstruction at the outlet of the stomach, and a functional disturbance producing dyspepsia and vomiting. There is no evidence of metastasis. Cachexia is present. Peristaltic waves are visible. The tumor is tender to pressure. The supraclavicular lymph glands are not enlarged. Inguinal glands are palpable.

The patient was advised to remain in the hospital. A few days after his admission an examination made of the abdomen failed to detect the mass which was so easily palpable three days before, and which, as was subsequently shown at the operation which was performed a week later, was the size of two fists.

The gastric contents, blood, and fæces were examined by Dr. Swan, with the following result:

November 3, 1905.—150 c.c. of gastric contents aspirated one hour after an Ewald test breakfast. Lactic acid positive; blood with aloin test positive; with guaiac test negative; fat droplets, amorphous débris, mucus and a large number of the Oppler-Boas bacilli present.

November 4, 1905.—Gastric contents: Lactic acid present; free hydrochloric acid absent; total acidity 18.

November 6, 1905.—Fæces; blood, aloin test, present; by the guaiac test negative.

November 8, 1905.—Blood examination:

Erythrocytes	4,770,000
Leucocytes	8,320
Ratio	1-575
Hæmoglobin, per cent	48
Color index, per cent	0.46
Polymorphonuclear neutrophiles, per cent	79
Lymphocytes, per cent	14
Transitional, per cent	3
Eosinophiles, per cent	1
Myelocytes, per cent	3
Leucocytes counted	100

Gastrodiaphane was used on November 7, 1905, but the stomach could not be illuminated.

After his admission to the hospital his stomach was washed out once a day for three days prior to the operation, and, although the patient was on a liquid diet and prolonged lavage was employed, the stomach could not be thoroughly cleansed, as some particles of food continued to come away with the wash water. Owing to the advanced stage of the disease operation was not urged. However, the condition was explained to the patient and the question of operation was left to himself to decide. The patient decided to take the chances of the operation, which was performed by Dr. Stewart on November 10, 1905. The mass involved the lesser curvature and the whole of the pyloric end of the stomach, and was of the size of two fists. Large nodules projected into the lumen of the stomach, which explains the inability to cleanse the stomach by lavage. The growth had extended to the anterior surface of the body of the pancreas, and a nodule of about the

size of a small hen's egg was situated in the transverse mesocolon. The stomach and transverse colon were resected. The patient died from septicæmia three days later, on November 13, 1905. No autopsy.

The diagnosis was not difficult in this case, for the history, signs, and symptoms were typical. The case, however, illustrated one point in particular, namely: that a large tumor of the pylorus may be present and easily palpable to-day, and to-morrow no tumor can be felt. Tumors of the pylorus are usually palpable, and what has been said in reference to the normal pylorus partly holds good here, i. e., the position, the contraction, and relaxation, also the presence of gas bubbling through it, a sign which is according to Osler of the very greatest importance. It is by palpation chiefly that we are enabled to determine the presence or absence of pyloric tumors. If ascites is present it is difficult to palpate the boundaries of the stomach unless the ascitic fluid is removed. It is never well to rely upon one examination, and the stomach should be examined before and after eating, also when the patient is standing as well as when lying down. In those cases in which a tumor is suspected an examination of the patient in the knee-elbow position, according to Riegel, Osler, and others, often gives valuable information as to the relation and position of a tumor, and should never be omitted in doubtful cases. In cases of cancer of the stomach the abdominal wall is usually not very resistant, neither is the growth particularly sensitive. The patient may complain of only a slight tenderness.

If patients with a tumor of the stomach are examined both when the stomach is empty and when it is filled to different degrees by inflation, marked differences in the position of the tumor will probably be discovered. As soon as the gas or air is allowed to escape, the tumor will drop back into its former position; therefore, the first thing to observe is whether or not the tumor remains in the same position and maintains the same form before and after the stomach is inflated. Riegel says tumors of the pylorus generally move to the right and slightly downward, less frequently upward, during inflation. Those of the posterior wall may disappear and be no longer palpable. Tumors of the lesser curvature are forced backward, while those of the greater curvature and those of the liver are pressed anteriorly against the abdominal wall, and in this manner become more prominent, but tumors of the anterior wall of the stomach and of the greater curvature usually become dislocated downward on inflation, and may occasionally become less accessible to palpation. This locomotion of tumors according to the state of distention of the stomach is important, not only for the diagnosis of the location of the tumor, but also for determining whether or not adhesions exist. The latter point is of great practical importance, for the motility of the tumor demonstrates at once that widespread and solid adhesions have not formed. This is particularly important, whenever surgical interference is contemplated. Inflation should still be performed, even if it is firmly established that the swelling felt is a tumor of the stomach, for no other manipulation gives us better information in regard to the form, size, and position of the stomach and the motility of the tumor. In doubtful cases inflation of the colon may be performed, as this procedure may furnish valuable information.

CASE IV.—*Cancer of the Pylorus.* The patient is a female; white; aged forty-five years; married; no pregnancy; housekeeper. She has lost twenty-six pounds in weight in the past three months. Her bowels are constipated and thirst is excessive. Vomitus amounted to eight litres. Physical examination showed the lesser curvature of the stomach to be below the umbilicus. The greater curvature extended to the symphysis pubis. There is a mass obstructing the pylorus which is an occupant of the right iliac fossa.

Osler says that the most difficult cases to recognize are those in which the walls of the stomach are extensively infiltrated, or where there are massive tumors of the stomach. In some the tumors may be so extensive, occupying such a large area in the left

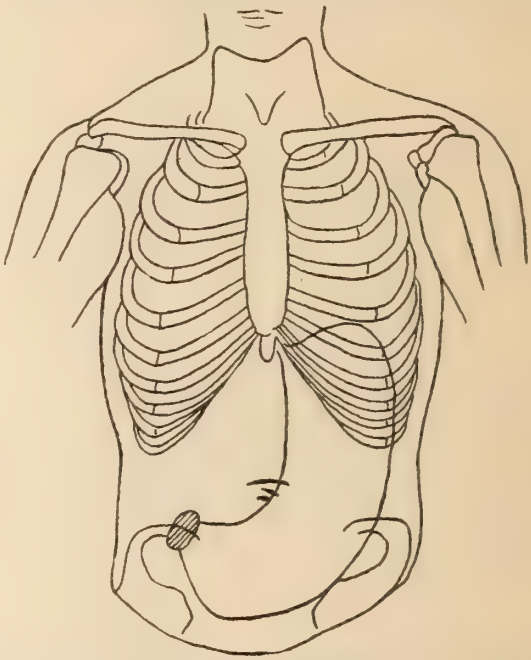

FIG. 5.—Cancer of the pylorus; gastroptosis with dilatation of the stomach in Case IV.

side of the abdomen, that some doubt exists whether it is not associated with the spleen or the kidney. A case of this kind was reported by W. F. Cheney, *Medical News*, xxxvi, p. 972-976, 1905.

The patient is a male; age thirty-seven years. He complained of pain in the region of the spleen of eight months' duration. He came from a malarial district, felt weak and tired; he had also discovered a lump in his left side. There were present mild dyspeptic symptoms, no vomiting, no constipation. Examination: Visible mass on the left side, extending as low as the umbilicus. On palpation this was found to have a sharp lower edge like that of an enlarged spleen. On percussion, dulness was found to be continuous with the splenic dulness. Autopsy by Dr. Ophüls. A large nodular tumor of the stomach about the size of two fists was found. The carcinoma was adherent to the anterior abdominal wall and did not descend on inspiration. No analysis of the gastric contents had been made. The diagnosis was thought to be an abscess or a growth of the spleen.

Sir William Bennett, *Clinical Journal*, of London, England, xxv, No. 15, p. 225, 1904, reported a case of cancer of the stomach in which the tumor involved the whole of the organ from the cardiac to

the pyloric orifices. The tumor was high up and immovably fixed by adhesions to the parts behind. Although this growth was so extensive, no tumor was palpable at any time, not even under an anæsthetic. Broadbent also adds that there are cases in which a large tumor exists, involving the whole of the stomach, which gives rise to no symptoms whatever, the tumor, in fact, being the first thing noticed. Kuttner in a lecture delivered in Ewald's clinic and reported by H. L. Knight in the *Clinical Review*, Chicago, May 19, 1905, pp. 90 to 98, says a point to be remembered is that cancer of the lesser curvature of the stomach is apt to cause a pleural irritation, so, if you have an unexplainable left sided pleuritis, it should always suggest a careful examination of the stomach, as we regard this as a symptom of great value.

Benign tumors of the stomach can be diagnosticated only when a mass is palpable, or when they produce obstruction.

Schnitzler reported a case of apparent tumor of the stomach depending upon spasm, and Einhorn also reported a number of cases most of which were associated with gastroptosis or enteroptosis, and that the apparent tumor depended upon prolapse of the left lobe of the liver, exposure and thickening of the abdominal aorta, hypertrophy of part of the abdominal muscles, and possibly adhesions around the lesser curvature of the stomach.

When the stomach is dislocated, or when it occupies the vertical position, the lesser curvature can be palpated and may give the impression of the presence of a tumor, or, again, under these conditions, the pancreas is exposed and in thin subjects, it too, may be palpable. Riegel says, as a matter of fact, the pancreas can occasionally be felt through the stomach when it is empty, even though the latter is not dislocated. For a further differential diagnosis the reader is referred to the textbooks that deal with the subject.

The x ray is not only of value in diagnosticating the position of the stomach, but it is also probably of service in diagnosticating the presence of tumors. According to Holzknecht, *Berliner klinische Wochenschrift*, xliii, No. 5, abstracted in the *Journal of the American Medical Association*, March 31, 1906, p. 994: "If the shadow is indented at some point, or if there is a gap anywhere, or the outline is like a picket fence at some part, it is easy to diagnosticate a tumor or other anomaly in the stomach wall."

At a meeting of the College of Physicians of Philadelphia, March 7, 1906, Dr. Henry K. Pancoast, who is in charge of the Röntgen ray department at the University of Pennsylvania, said, in discussing the paper of Dr. Charles B. Worden on *A Critical Study of Gastroptosis with Special Reference to Outlining the Stomach*, that "Much has been accomplished in a short time in this work, i. e., the Röntgen ray, in the diagnosis of disease of the gastrointestinal tract, and it is to be hoped that further improvement in the details of the technique will add still greater value to this method of diagnosis. A most important point gained would be the possibility of making a comparatively early diagnosis of carcinoma of the stomach. Constrictions and kinks at or near the pylorus can be demonstrated, but the cause of them cannot always be shown in a picture. In our one case of carcinoma of the stomach examined so far by the x ray and bismuth method the skiagraph showed a distinct irregular outline of the greater curvature near and at the pylorus, whereas the skiagraphs of over forty other stomachs examined showed a regular outline in this region. The disease had advanced far enough in this case to make the diagnosis clinically with reasonable certainty, and the clinical and skiagraphic diagnoses were afterward confirmed by operation. The appearance of the stomach outline in this case was so distinctly different from the others as to lead one to place more dependence upon the skiagraphic findings. Nothing can yet be promised, but we can hope to make the x ray diagnosis of gastric carcinoma of some value in the future." I saw the x ray plate of this case and the irregular outline of the greater curvature of the stomach was very striking.

Einhorn has found the gastrodiaphane to be of assistance in determining the presence of tumors of the anterior wall of the stomach. The method is not difficult and should be employed in doubtful cases.

Since tumor is not an early sign in malignant disease of the stomach, and as we know a very large tumor may be present and still escape detection, if after a careful examination of the case and reasonable grounds are found to exist, leading us to suspect the presence of malignancy, the best interest of the patient will probably be served by recommending an exploratory laparotomy, rather than to wait for the appearance of tumor to confirm the diagnosis.

2412 North Sixth Street.

REPORT OF A CASE OF LITTLE'S DISEASE.

By Alfred Glascock, M. D.,
Washington, D. C.,
(From the Government Hospital for the Insane.)

R. A. L. Male, single, aged twenty-two; education, fair; occupation, stenographer.

Family History: Both parents enjoy good health and give no evidence of having ever suffered from nervous or mental diseases. With the exception of the maternal grandfather being an alcoholic and a cousin dying insane in an asylum, the family history is negative. The patient's mother was forced to be delivered of a dead infant by instruments a year after her marriage; her five subsequent labors were most difficult and were due, according to her statements, to a rather small pelvis.

Personal History: The patient, who was the fourth child, was a breech presentation; he was delivered by an ignorant servant, as medical assistance and other help were not available at the time. The mother remembers that after the birth of the breech, the head hung within the os uteri and she believes the nurse made undue traction backwards on the child's body in order to release the head. The patient was born somewhat over time, and was quite large at birth; he was a normal infant, and began to stand on his feet at eleven months, but after this he made very little progress, and at four years of age he was still unable to walk properly; he "wobbled" about and fell frequently. Contractures began in the knees and ankles at an early age, and five tenotomies were performed when a child to overcome his deformities; these were certainly greater at that time than at present, the improvement resulting from the many treatments he received. He formerly walked with such marked adduction of his legs that his gait was "cross legged." His

arms have never been involved in this trouble. Aside from this nervous disease he has never suffered from any serious illness, and has never had convulsions. Before puberty he was considered quite bright, and was regarded by his parents as a "model child." At the age of fourteen, however, a change began rather suddenly and he became morose in temper and erratic in conduct; marked untruthfulness and deception appeared and he grew lazy and absolutely neglectful of his studies. Prior to this time he had been far advanced in school for a boy of his age. The moral deficiencies and weaknesses became more pronounced as he grew older and at eighteen he began alcoholic and sexual excesses; he has never contracted venereal disease.

Although studying very little during the past five or six years, by the aid of a keen interest in his environment and an unusually retentive memory, he has attained a fair education. He became a competent stenographer two years ago and obtained a good government position at that time, but he lost it almost immediately by his dissolute habits. The patient's lameness has in no way prevented him from getting about, and he has always exercised without tiring, as much as the average youth. He enjoys outdoor sports, and illustrating the noninvolvement of the arms in the disease, he can catch a ball with skill and handle a bat well. He is fond of the popular novels; and is a good card and chess player. By those who do not know him intimately he is generally liked, for he is inclined to be light hearted and genial, but he is egotistic and exceedingly wilful, and when deprived of his own way he becomes sullen and then hysterical. On several occasions quite recently he refused all food for several days when reproved for wrong doing. I have never been able to elicit hallucinations or delusions, and I have been unable to obtain any history relative to these disorders. The patient has no speech defect. He is witty and quick at repartee, but his companions agree that he "tries to be too smart." He is endowed with a good critical sense; he is an amusing mimic, and is ever ready to draw upon a large store of anecdotes which he tells in an entertaining manner. Generosity is one of his good traits; he is exceedingly liberal with borrowed money, and has been observed to purposely spend it on the lender, yet although many debts were incurred by him he has never been known to settle with his creditors. Last summer his frailties of character were brought more clearly to the light when he wandered about the country in an impulsive and aimless manner, becoming involved in divers troubles and contracting large debts. The patient has now been idle for two years, and he is making no plans for his future.

Physical Examination: March 1, 1906. Height, five feet six; weight, one hundred thirty pounds. He is well nourished and quite muscular for a cripple; there are no apparent stigmata of degeneration; hair abundant and dark; complexion tanned; skin over body white, smooth, and free from eruptions. At both popliteal spaces are scars from old tenotomies. Lymphatic glands are not enlarged. Eyes: Iris gray, pupils equal in size; they respond promptly to light and accommodation. Sympathetic and consensual reflexes present. No nystagmus. Tactile sensibility is not impaired. Sense of position normal; he can locate promptly and accurately the touch of cotton, wool, and the prick of a pin over entire body. Sensibility to pain is acute, and he easily distinguishes heat from cold. There are no formications or zones of hyperæsthesia. Nerve trunks are free from tenderness, also the muscles on deep pressure or percussion. Motility of facial muscles is unimpaired; the muscles of arms are fairly well developed and, as stated, are not involved in the disease.

Nothwithstanding the involvement of the lower limbs, they are remarkably well developed for a cripple, but the left one has suffered more than the right, and the circumference of the left calf is from one half to three quarters of an inch less than the other. The gait is spastic; there is muscular rigidity in both legs; when walking he shuffles both feet along and lifts them very slightly from the ground. There is talipes equinus on the right side and talipes valgus of the left foot. Both lower limbs are adducted when walking, the right knee having a tendency to cross the other. He swings the left limb from the hip, and does not bend the knee on this side during locomotion. Tests by the galvanic and faradic currents show no abnormalities. Coordination is good in both arms and legs, and he does not sway when standing with feet together and eyes closed; he cannot balance himself well on one leg with closed eyes. Reflexes: Both knee jerks are greatly exaggerated; ankle clonus is very pronounced on both sides; there is a partial reaction to Babinski reflex; the plantar and cremasteric reflexes are present. There is no disturbance of the reflexes of the upper extremities. Tremors are absent. There has never been any disorder of the functions of the bladder or rectum. Urinary analysis is negative. Circulatory, respiratory, and digestive systems show nothing abnormal.

Conclusion.—The case cited, presenting so many points of interest, prompts me to give a brief resumé of the history of Little's disease before concluding.

The disorder was first discovered by Little in 1846, and he then called it "congenital spastic rigidity of the limbs." Thirty years later Seguin discovered a similar condition, which he termed "tetanoid paraplegia." In 1873 Erb published a paper on "Spastic spinal paralysis," and in the same year Charcot spoke most probably of this malady under the name of "spasmodic dorsal tabes." A few years later, from a more careful study of the writings of Seguin, Erb, and Charcot, "spastic spinal paralysis," or "lateral sclerosis," developed as an independent malady. This disease was then generally recognized for a long time, but after various controversies its real existence was denied, and the symptom complex constituting the disease was thought to be a form of dorsal myelitis. Several years ago, however, the Germans and the French revised the work of Little; they classified the disease as a separate disorder, and named it after him.

Little held that the affection was due to an injury to or lack of development of the pyramidal tracts of the cord; it was prenatal or natal in origin and most frequently followed premature or forced delivery. This latter difficulty, I think, was without doubt the cause in the case under consideration, which presents all the diagnostic features of the disease. I sum them up as follows: The early appearance of the spastic gait; the contractures following closely; exaggerated reflexes; ankle clonus; the bilateral nature of the malady; the absence of disorders of the sensorium; and the noninvolvement of the bladder and rectal reflexes. The patient's infirmities of character, which appeared at puberty and which became so pronounced recently, are recorded to be a frequent accompaniment of Little's disease. I might add that several recent authorities describe a special "cerebral type," in which nystagmus, speech disorders, and athetosis are featured, with imbecility or early mental deterioration.

A REVIEW OF THE PRESENT DAY THERAPY OF PULMONARY TUBERCULOSIS.*

By B. M. Randolph, M. D.,
Washington, D. C.

If the presentation for your consideration of a subject so well worn as pulmonary tuberculosis requires any apology, sufficient excuse is found in the importance of a disease which plays such an appalling part in producing the death rate and invalid list of all civilized communities. Indeed, the very profusion of literature and discussion on the subject tends to confuse and bewilder us, and makes it the more necessary from time to time to thresh the subject over, and try to separate that which is of practical value from that which is merely speculative, or of undemonstrated benefit. It is with a view of reviewing the methods employed in curing consumption, and drawing out a discussion as to their relative merits, that this paper is presented to you this evening.

To rehearse all the remedies which have been employed to cure this disease would be to delve into history in a fashion not contemplated in the scope of this paper. I propose to discuss only those measures which are to-day recognized as having beneficial effect on the disease. I may say at the start that the present view is that no remedy now known has any specific action in either destroying, or inhibiting the tubercle bacillus in the body, or in acting as an antidote to its toxines. We recognize the fact that, while our remedies do relieve the symptoms, arrest the progress of the disease, and, in many cases, result in permanent cure, they do so only by aiding the inherent resisting power of the body through the development of an improved nutrition.

I think there are many who do not believe that pulmonary tuberculosis is ever truly cured. The statement that consumption is curable is the watchword of all organizations engaged in the antituberculous crusade, and some of us think this statement is unjustified. This skepticism brings us face to face with the definition of what constitutes a cure. We must remember that the same word may have a different meaning to different persons. Intoxication means to the scientist poisoning; to the lawyer and layman, drunkenness. The word tuberculosis itself means to the physician infection with the tubercle bacillus, and the wide range of pathological changes produced by the development of that organism in animal tissue; to the average layman it means cough, fever, pain, sleeplessness, wasting away, and a gradual, but inevitable descent into the valley of death. A cure means to the ordinary citizen the cessation of the manifestations of disease and the restoration to a sustained condition of health. With this understanding of the word, we are justified in proclaiming to the laity that consumption is curable. The physician's idea of a cure is the result obtained when the patient is relieved from all manifestations of the disease, subjective and objective, and is free from any process, condition or infection which of itself tends to reproduce that disease at a period more or less remote. In other words, he is cured when he is restored to health, and is justified in the expectation of remaining in health, provided he is not again exposed to the primary ætiological factors of the disease.

We cannot apply this test rigidly to tuberculosis, because we are ignorant of several steps in the pathological process. We do not know the length of time between the advent of the bacillus and the development of tubercle; nor the whereabouts of the bacillus during that time; nor how long it may remain latent in the body; nor what physical or chemical changes convert tissue which has hitherto resisted its development into a fertile soil; nor whether this change is brought about by a temporary suspension of Nature's resisting forces, or otherwise. We do know that metastatic tuberculous foci of great severity may develop from a lesion so mild as to produce no symptoms; and yet we find at autopsy hundreds of cases of healed tuberculosis in patients who have never given the slightest evidence of the disease. The process of healing is the same as in all focal lesions of connective tissue. The focus is surrounded by a zone of newly formed connective tissue cells, which, as soon as the destructive or irritative stage is arrested, become converted into dense fibrous or cicatricial tissue. No case can be spoken of as cured, unless all the foci of the disease are obliterated by such a development of fibrous tissue. The determination, then, of a permanent cure depends on whether the bacilli thus encapsulated can ever regain access to normal tissue, and become producers of fresh tuberculous foci. Personally, I do not believe it is possible. A cured case may be reinfected from without, but not from the bacilli entombed within dense scar tissue. Though I do not go to the extent of believing that every man is somewhat tuberculous, I do believe that most persons who live any length of time in our modern cities, have tubercle bacilli in their bodies at some time or other. I consider the man who is anatomically cured, as described, has as much right to call himself free from this disease, as those who harbor the organisms, but have not developed the disease.

While on the subject of terms, I may mention two words, the use of which in this connection tends to convey a false impression to the lay mind. To speak of tuberculosis as contagious causes the uninformed to class it with smallpox, scarlet fever, and measles, and is calculated to produce a feeling against patients suffering with consumption, which is both unreasonable and unjust. The laity should be made to understand that the one source of the disease is the sputum of infected patients, but that the disease cannot be transmitted if this sputum is disinfected or destroyed at its source. The other word to which I refer is heredity. Though there is reason to believe that an infant may come into the world infected with tubercle bacilli, such an occurrence is so rare as to have no significance in the ætiology of tuberculosis. It can hardly be doubted that some persons have tissues which furnish a specially apt soil for the bacilli to grow in, and that this susceptibility may be transmitted from parent to child. Such a person, however, provided he is not infected from without, is as safe

* Read before the Medical Society of the District of Columbia, February 14, 1906.

as the most robust. I believe that discussion on heredity serves only to bewilder the laity, and to divert their attention from the question of prime importance in the propagation of tuberculosis, and that is infected sputum.

It has been amply demonstrated that the essential remedies in curing consumption are: 1, Rest; 2, pure air; 3, and food. There is a tendency today in the enthusiasm over the wonderful results derived from these three agents, and because of the injurious effects of drugs injudiciously employed, or used with an improper conception of the purpose to be accomplished by them, to deny the latter a place in the treatment of consumption. I am of the opinion that every case presents, at some time in its course, important phases, which are successfully met by the intelligent exhibition of drugs, and that, without deleterious effect on the patient either immediate or remote. I believe the beneficial effects obtained by the aforesaid agents are both facilitated and enhanced by the proper use of medicine, and have no hesitation in claiming a fourth place for drugs in the treatment of this disease.

1. *Rest.*—This is a relative term which may be applied to anything between the normal activity of the healthy body, and profound dreamless sleep. What may constitute comparative rest for one person may be abnormal physical exertion in another. We must, therefore, in deciding to what extent rest must be insisted on, consider not only the stage and activity of the tuberculous process, but also the individual's occupation and habits, as well as complicating disease.

In all destructive lesions, and especially in those accompanied by the absorption of toxines, it is a well established principle that regeneration and repair are best accomplished when the part is at rest. Nature has supplied us with an inducement to submit to this treatment by making pain a predominant symptom of inflammation or injury of any part, where motion is the result of voluntary muscular action. The prompt formation of pleural and peritoneal adhesions has the same purpose. So long as the resisting power of the body is insufficient to counteract the amount of toxines being formed, the disease is in a progressive state and the newly formed connective tissue cells are successively attacked and undergo necrosis. The toxic products are absorbed into the general circulation, and produce the fever, the accelerated respiration, and the rapid irritable heart action characteristic of this stage. If at this time excessive physical exertion is indulged in, the already overtaxed respiratory and circulatory systems have additional work thrown upon them, the tissues in the neighborhood of the lesion become congested, and the work they are trying to do is interfered with. At the same time, the oxidizing function of the blood already engaged to its utmost has thrown upon it the waste of increased muscular metabolism. It follows then that rest, during the stage of progression, which stage is indicated by the temperature, the respiration, and the heart action, is essential. When the disease process permits it, exercise may, and should be, begun and gradually increased, as the patient is able to endure it without hurt; for exercise in disease, as in health, increases the strength, improves the appetite, promotes oxidation, and helps elimination. The patient should have the benefit of these factors when he can do so without disadvantage to himself. It is here that the continuous control and watchfulness maintained in sanatoria exercise the greatest benefit. A conscientious and intelligent patient may, when impressed with the importance of pure air and abundant wholesome food, be trusted to carry out instructions in these matters; but no man can be the proper judge of the ever changing status of his disease, which is the index of how much or how little rest he must take. It is remarkable how prevalent the idea is that if a certain thing does you good, more of it will do you more good. I am convinced that there is no cause responsible for so many backsets as the failure to understand and meet the indications for rest.

2. *Pure Air.*—Air is breathed into the lungs to furnish the tissues with the oxygen necessary for the chemical reactions constituting the phenomena of cell life. If this were the only point of view from which the air surrounding the consumptive patient had to be considered, it would follow that any air containing a normal percentage of oxygen, and free from all substances which are irritating to the respiratory tract or injurious to the human organism, would be equally good. This view is maintained by some. But we have to consider also the effect of air as a bathing fluid, and hence the modifying effects produced by various atmospheric conditions on the cutaneous nerve endings, and through them on the central nervous system and the circulation.

The skin, with its numerous nerve endings and abundant capillary circulation, has very important functions connected with body metabolism. It is an organ of sense, an organ of excretion, and an organ of heat regulation. These functions are intimately dependent on one another. The nerves governing the sense of temperature by their control of the cutaneous capillary circulation, govern the conservation and loss of heat, and by altering the relation between the external and internal blood supply, exercise a profound influence on the entire circulation, and hence on body nutrition. The eliminative function of the skin, whose importance and extent is too little realized, is absolutely controlled by the cutaneous capillary system—that is, through the agency of the sensory nerves. Winternitz, Baruch, and other advocates of hydrotherapy have amply demonstrated the remarkable effects produced on this cutaneous capillary system by the intelligent application of water under varying conditions of duration, temperature, mechanical force, and evaporation. When we bathe the body in air, the variations in temperature, humidity, and pressure must affect the functions of the skin in the same manner, though of course in a more feeble fashion than is the case with the less volatile fluid water. If we add to these considerations the chemical action of sunlight, the psychic effect of a change of scene, the stimulating effect on the respiratory apparatus, and the unquestioned,

though unexplained increase in hæmoglobin and red cells produced by removal to higher altitudes, we must admit that climate may at least play the part of an adjuvant in the prescription for the tuberculous patient.

Undoubtedly many very diverse climates seem to have a very pronounced beneficial effect on the disease. The Adirondacks, New Mexico, Arizona, Colorado, Southern California, Western North Carolina, Northern Africa, San Moritz, the Riviera, and the German mountains all seem admirably suited, and yet present an astonishing variety of climate. It seems to me that the end to be sought in the choice of climate is the same as in the case of hydrotherapeutical measures—that is, *reaction*. Whether we use the warm, cold, part, or full bath pack, drip sheet, or douche; whether we are treating febrile conditions, cardiac disease, nervous disorders, or anæmia, the end always sought and without which the treatment is a failure, is the proper reaction of the circulation to the measure employed. In like manner, when the consumptive is exposed to fresh air, if the changes brought about are promptly followed by a response on the part of the vessels resulting in the establishment of a normal healthy reaction between the cardiac and peripheral circulation, the result will be satisfactory. But if the cutaneous capillary circulation, after being stimulated to primary contraction by cold, remains in such a state of contraction; or if the enervating effect of too warm and moist air produces a continued relaxation of this system, thus interfering with the proper movement of the blood, through the capillaries, and hence through the veins, heart, lungs, and arteries, the result is not a success.

The factor of climate, then, resolves itself into a question of reaction. Any climate will be suitable where this reaction can be insured when the patient is continuously in the open air. The selection of a climate is based entirely on consideration of the individual case. We must weigh the patient's age, his habitual surroundings, his occupation, and complicating disease. It is well known that persons with organic heart lesions do badly in very high altitudes; that rheumatics are injured by cold, damp climates; that persons with profound anæmia cannot stand as rigorous a climate as the plethoric. Persons who have dwelt in a warm enervating climate must not have too sudden a change to a severe one, and vice versa. Further, we must consider psychological features. Those with little education and provincial habits are subject to a grave degree of nostalgia, when too greatly removed from their customary surroundings. Many have not the moral stamina to make a business of getting well, and are prone to the temptations of dissipation or social pleasures. Such will not receive benefit from any climate, unless subjected to efficient control. We must also take into consideration the fact that the patient, when his treatment is completed, may have to return to his old habitation. In such cases it is better to select a climate as much as possible like the native one, rather than one where relapses are likely to occur on leaving it. Last, but not least, we must consider the patient's financial condition. He must not be sent away from home at all, unless he can be maintained in at least as good circumstances as those to which he is accustomed, and that for a sufficient length of time to effect a cure.

3. *Food.*—As we have seen that the chief end to be attained in dealing with consumptives is improved nutrition, it follows that feeding plays a leading part in our treatment. Too much stress has been laid on the idea that we must crowd a patient with as much milk and raw eggs as we can induce him to swallow, irrespective of his power of assimilation and the state of his digestive tract. The principles of diet in consumption are the same as those in any other disease where we wish to improve nutrition—that is, to give only such quantity and quality of food as can be assimilated, no more, no less. It is true that a large number of patients can, under proper conditions, ingest and digest an astonishing amount of milk and eggs, but this is by no means always the case. In tuberculosis, as in typhoid fever, we find many who can tolerate milk for a short time only, or not at all. The same is true with eggs. Other persons can take them only after careful training of their digestive organs. Others have a positive distaste for one or both of these articles, or soon tire of them. Again, we find persons in whose diet carbohydrates, fats, or fruits, and fresh vegetables have always prevailed, and these take unkindly to the large proteid percentage. Those who have practised much among the negroes must have been impressed by the early age at which the infant gets away from the exclusive breast and bottle diet, and begins to partake freely of the rank, greasy food of his parents. Efforts to substitute wholesome, nutritious beef for fat hog meat in the diet of this race have met with strong protest. It is a mistake to make these persons take three or four quarts of milk and a dozen or more eggs daily; and he who does this will generally find that first the appetite rebels and then symptoms of intestinal toxæmia develop.

The alimentary canal is proverbially prone to disturbances in consumption, and it is our duty to ascertain its condition at every stage and regulate the food accordingly. A varied diet, nutritious in character, well cooked, and within the digestive capacity of the patient, will give better results than indiscriminate stuffing with milk and eggs. I do not wish to be understood as saying that these articles are not to be recommended in the consumptive's dietary, but only that they should be used intelligently. The stage of the disease and the patient's individual taste, habits, and digestive capacity furnish the indications for the quantity and quality of his food.

4. *Drugs.*—Under this head I include all internal and external remedies. As I have said before, our present equipment does not furnish us with any remedy that has a specific effect on the tubercle bacillus or its toxines. Many things have been exploited as having such effect, but any good result they may have had is by improving general nutrition, and not by any specific action.

Antitoxic sera would seem to promise much. Beginning with Koch's tuberculin, which was

exploited over fifteen years ago, continuous efforts have been made to perfect an antitoxine which would be of practical benefit. None of these preparations, whatever claims of success have been made by their originators, have stood the test in the hands of unprejudiced observers. McFarland (*Textbook Upon the Pathogenic Bacteria*, Ed., 1904), after referring to the work of Koch, Tizzoni, Centanni, Bernheim, Paquin, Maragliano, and others, has this to say: "From these discordant observations, the more favorable of which are probably hasty records of inadequate or incomplete experiments, the conclusion that little is to be hoped from immune sera in the treatment of tuberculosis is inevitable."

Marmorek and von Behring hold the limelight at present in the subject of sera. Von Behring, by virtue of his great work in diphtheria and tetanus, and from his recent results in successfully immunizing cattle against bovine tuberculosis, seems to be entitled to the greater consideration. His proclamation at the International Congress of Tuberculosis in Paris last October has produced a sensation but little less than that with which the announcement of Koch's "lymph" was received. The world has understood him as promising a specific cure for tuberculosis. What he said was: "My method is destined, I believe, to protect men threatened with phthisis against the consequences of infection." Arnold Klebs (*Journal of the American Medical Association*, December 16, 1905), in a careful critical review of von Behring's address, as published in the *Münchener medicinische Wochenschrift*, concludes as follows: "How much ultimately suffering mankind is to profit cannot be predicted, nor can Behring's expressed, though carefully and ambiguously worded expectations mean anything but a plausible, by him yet unproved hypothesis of a curtive principle, applicable in human tuberculosis."

The only drugs that are to-day generally prescribed simply because the patient has consumption, that is, with any idea of specific influence, are cod liver oil and creosote. Cod liver oil does undoubtedly help those persons whose digestion can tolerate it, but its benefit is due to the fact that it is an easily assimilated fatty food. It never has done more than improve nutrition, thus indirectly influencing the disease. It did valuable service in this way, while we were awaiting the development of a rational treatment. It is still of great service in selected cases and seems especially suited to the stomach of the negro.

Creosote is a stimulant expectorant, has a sedative influence on the nerve endings of the gastric mucosa, prevents fermentation in the stomach, and is an intestinal antiseptic. By its action on the bronchial mucous membrane it directly improves and relieves the cough. By its local action on the stomach and intestinal tract it prevents those dyspeptic, fermentative, and irritative conditions which interfere so much with the proper assimilation of food. As a result, digestion is better, the appetite improves, and there is a gain in nutrition, the aim of every therapeutical measure of value in this disease. It is due to improved nutrition and strengthened resisting power that we have fever, cough, and sweats diminished, and weight increased. I am against the advice found in most works on therapeutics to increase the dose of creosote as long as the stomach will tolerate it. This plan had some excuse as long as it was believed that the drug exerted a direct action on the bacillus; but since that view has been abandoned, the "limit of tolerance" plan has no rational foundation. We do not give creosote to kill, or inhibit the bacilli, but to get the results enumerated. Hence, we should regulate the dose to the end, and not go beyond the quantity necessary to attain that end. I have seen more than one poor patient have added to his sufferings a deranged digestion, when a victim of the "limit of tolerance" method of administering this drug. When this limit is ascertained, it is too late, as the damage has already been done, and time and vitality are lost in repairing this damage.

Beside these two drugs we have the whole pharmacopœia, and I believe we should not hesitate to call on it to meet symptoms as they arise. We must control the cough sufficiently to see that it does not interfere with sleep and rest. We must relieve pain, control sweats, keep the eliminative functions in working order, and help the appetite. In doing this, however, we must not forget that the ultimate end of all our treatment is to improve nutrition, and must therefore never employ any medicine which can have either an immediate or remote effect in deranging digestion, or otherwise interfering with our chief object.

A paper on this subject would be incomplete without mention of the aid furnished to the preceding remedies by hydrotherapy. The powerful effect of water externally applied in improving nutrition is but too little realized. Aberg, Winternitz, Brehmer, Ziemssen, Baruch, and many others have long employed this treatment in consumption with the most excellent results. In order to obtain these results, one must have a thorough knowledge of the physiological action of water and of the technics of administration. In the hands of the unskilful it is a dangerous remedy, as the slightest mistake in determining the proper measure to be employed, the duration of the treatment, and the temperature of the water will cause a failure to benefit, and may do much damage.

To summarize, the chief points to which I have endeavored to draw your attention are:

First.—That every method of treatment of pulmonary tuberculosis, which has stood the test, has for its prime object the improvement of nutrition.

Second.—That we cannot become narrow advocates of any one remedy, system, or method, but owe it to our patients to employ every available means that will lead to improved nutrition.

Third.—That we must take into consideration every circumstance connected with each individual patient, and modify our remedies both in their selection and application, according to the needs of the case.

Treat the patient and the patient will take care of the disease.

1744 N Street, Northwest.

FOUR CÆSAREAN OPERATIONS AND A LABOR COMPLICATED BY FIBROMATA IN WHICH HYSTERECTOMY WAS PERFORMED ON THE SIXTH DAY OF THE PUERPERIUM.

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The following is a report of five cases that stand out conspicuously among the 305 deliveries that occurred in the maternity department of the New York Foundling Hospital during the year from November, 1904, to November, 1905:

Case I.—I. B., a primigravida, twenty-two years old, born in the Dominion of Canada, was admitted to the hospital on April 18, 1904. She had a deformity from childhood, a marked double lateral and rotary curvature of the spine, the upper describing a concavity to the left and the lower to the right. There was marked settling of the ribs between the crests of the ilia and prominent posterior. The measurements were between the spines twenty-two c.m., between the crests, twenty-five c.m., right oblique eighteen c.m., left oblique eighteen c.m. Transverse outlet was eight c.m. On vaginal examination the promontory of the sacrum was to the left.

Towards term the increasing size of the uterus caused great discomfort in that she was obliged to sleep in a semiprone position, and in walking about had to support the weight with her hands. Here was a typical rickety dwarf who presented the classical obstructions to a natural delivery, leaving no choice but a Cæsarean operation to save her life and that of her child. With the consent of the patient she was prepared for a Cæsarean section and hysterectomy.

On November 11, 1904, the abdominal cavity was opened by a medium vertical incision between the umbilicus and symphysis. A loop of intestine was found lying between the anterior abdominal wall and the anterior surface of the uterus. After dislodging it the uterus was opened on the anterior surface by a vertical incision, and the child and the placenta removed. The broad ligaments were ligated with No. 2 plain catgut, the supravaginal portion of the cervix cut across, and the uterus with the right ovary removed. The other looked to be in better condition and was left behind. The peritonæum was closed over the stump with a continuous suture of No. 2 plain gut. In the right broad ligament was found a hard mass which on section proved to be a fibroid tumor.

The abdominal wall was closed in layers with No. 2 plain gut and a subcaticular suture of the same material. Dry sterile dressing applied.

The child, a boy, weighing six pounds and six ounces, was vigorous and strong. Mother and child were discharged in good condition on December 6th.

The lesson to be learned in the study of this case is the fact that the field of operation may be occupied by a loop of intestine, and therefore haste should not be a factor in the operation lest an accident occur which will delay it and imperil the life of the mother.

Case II.—Mrs. H. C. I., a primigravida, thirty-five years of age, native of the United States, was admitted to the maternity department of the Foundling Hospital on October 26, 1904, in her fifth month of pregnancy. She was a native of Virginia, and came on to New York to place herself under observation, having been under my care about a year before for menorrhagia due to the presence of a fibroma. The uterus was curetted, and she was told that if pregnancy occurred it would be wise to keep herself under observation because the fibroma, being mural, might increase in size or cause uterine contractions. The tumor was of about the size of a cocoanut, with smaller tumors near the fundus. These tumors complicating pregnancy usually accommodate themselves to the growing uterus and seldom offer obstruction to the advancing head unless they grow between the folds of the broad ligament, and there of course they are fixed.

In this case the second stage advanced to complete dilatation and engagement, when the pains gave out in midforceps position. The completion of the second stage by forceps presented no special difficulty. After the third stage a hard, smooth mass was seen between the navel and the anterior superior spine, which moved with the uterus. The cervix was high up and could just be reached by the finger tip. The fibroid came down behind the lower uterine zone, making it difficult to pack the cavity with gauze. The persistent oozing called for the packing. In twelve hours the packing was removed and the discharge was moderate in amount. The questions at once came up, Would the presence of that fibroid dam back the normal discharge and invite sepsis, or would it act as an irritant? Both could be answered in the affirmative, though each succeeding day proved that the danger from sepsis was not great. The temperature on the second day rose to 102°, but the pulse was soft and full at 100. Almost immediately after the gauze was removed the unequal contraction of the uterus caused pains so severe that the patient begged for relief by operation. After the use of anodynes for four days it became a question of morphine habit or removal of the tumor. Though I hesitated to perform a capital operation so early in the puerperium, still the indications were so strong that delay would be the more dangerous. The temperature, which had been ranging from 100° to 102°, dropped to normal, and the pains ceased in the second day after operation. I felt justified in allowing the patient to go into labor, knowing that as a rule fibromata seldom obstruct delivery. At the same time there was an understanding with the patient that if an emergency should arise I was to use my judgment in meeting it. I felt justified in allowing some days for observation of the conditions after labor, and I felt that any further delay would invite disaster. As it was, the operation relieved the pain immediately and she nursed her baby in comfort.

Case III.—L. F., a primigravida, twenty-six years of age, born in the United States, was admitted to the maternity department of the Foundling Hospital on March 23, 1905, in her eighth month of pregnancy. She was poorly nourished, and gave a history of hip joint disease dating from her sixth year. The right hip was ankylosed, and there was moderate lordosis. The affected hip was encircled by three scars of old sinuses, and there was one in the gluteal region between the buttocks. The pelvis was funnel shaped, and there were deformities of hip and spine. The measurements were: Between the spines twenty-three c.m., between the crests twenty-six c.m., right oblique twenty c.m., left oblique nineteen c.m., external conjugate seventeen c.m.

The indications were clearly for delivery by Cæsarean section. At a convenient time with the consent of the patient she was prepared for the operation. On April 20, 1905, the peritoneal cavity was opened by a median vertical incision extending from the umbilicus nearly to the symphysis. The anterior wall of the uterus was divided in the same line, exposing the child, which was in the R. S. A. position. The child was removed and handed over to an assistant. The placenta and membranes were then manually removed. The child was a boy weighing six pounds, and was in ex-

cellent condition. She was discharged in good condition on the 14th of May.

The two following operations of Cæsarean sections were performed for reasons outside of the conventional, and strange to say were done within twelve hours of one another:

CASE IV.—V. B., thirty-four years of age, born in the United States, had been under the observation of Dr. T. J. Dunn from her second month of pregnancy. I was invited by the doctor to see her in consultation in the third month. The reason for the conference was to ascertain just how much obstruction the fibromata, which complicated the pregnancy, would offer the delivery. The position of the larger fibroid was in the lower uterine zone and to the left. It seemed to be fixed, but judging from our experiences we granted that in the growth of the uterus it might clear itself of the pelvis and be harmless. As conception progressed month after month the large tumor did not change position and for that reason Dr. Dunn advised her to place herself under observation in the hospital so that we could observe her labor closely from the beginning.

Accordingly, she entered the maternity department of the Foundling Hospital early in October, and the labor was expected on the 15th. She went over the expected date, and on the 20th of October she began to have great discomfort from the weight and pain from the tumors. With a stimulating laxative of castor oil she went into labor on the 26th of October. The pains during the first stage were good, but she could not accomplish much in the way of dilatation. The effect of the pains was not being directed to the cervix, which remained high up and to the right, the left pelvis being occupied by the large tumor. She was in labor for twelve hours. Calling Dr. Dunn into conference, we agreed that any further delay in a uterus in tonic contraction would result in traumatism. With the consent of the patient a Cæsarean operation was decided upon with the possibility of hysterectomy. Without any delay the median operation was performed, a large healthy male child was extracted, and the uterus inspected. A small tumor at the fundus was pale and bloodless, and the large one that had offered the obstruction was found to be situated in the folds of the broad ligament on the left side. Great difficulty was experienced in dislodging it from its bed, the uterine contractions having forced it firmly in the pelvis. So great was the pressure that already central necrosis had started in. The centre was soft and contained a quantity of free blood. The lower uterine segment showed the effect of continuous pressure of the advancing head, being deeply discolored from a dark indigo to a purplish brown. The indications for a complete hysterectomy were clear, and it was performed. The boy weighed eight pounds and twelve ounces. Her convalescence was rapid, the temperature reaching 100° but once. Both mother and child were discharged in good condition on November 13, 1905.

The points to be observed in this case are that a broad ligament fibroid is not easy to diagnosticate when complicated in pregnancy, that all fibroid complications should be carefully observed, and that no uterus in a state of tonic contraction should be given more than twelve hours without interference.

CASE V.—E. W., a primigravida, eighteen years of age, born in the United States, was admitted to the maternity department of the Foundling Hospital early in July. She was in good general health and well formed. Her pelvic measurements were ample. Dr. R. S. Haynes, the house obstetrician, had her under observation for some time and made the diagnosis of a large child with an abnormal head and a heart action that was slow and full. The head apparently occupied a great part of the lower abdominal zone. On account of the normal pelvic measurements we desired to learn just how much engagement would take place after full dilatation had been secured. In justice to the patient that much was due her. After full dilatation had been accomplished by Dr. Haynes with the graduated Champetier de Ribes bags, and no sign of engagement, we declined to brook any further delay. The situation was explained to the patient and she gave her consent for a Cæsarean operation. Our reasons for a Cæsarean operation as opposed to a craniotomy were that the child was alive with vigorous heart action, and the chances of delivery of a living child were very good. It was the quickest method of delivery, and the operation was a clean and open one. At three o'clock on the morning of the 28th of October a median operation was performed, and the child removed. Some difficulty was experienced in extracting the after coming head through the uterine incision, so large was it. The child was a male weighing thirteen pounds six and one half ounces, and hydrocephalic. There was only slight asphyxia, the respirations being spontaneous. The measurements of the child were:

Suboccipitopregmatic,	15	c.m.
Suboccipitofrontal,	15.50	c.m.
Occipitofrontal,	21	c.m.
Occipitomental,	21	c.m.
Biparietal,	19.50	c.m.
Bisacromial,	14.50	c.m.

In circumference they were:

Occipitofrontal,	57	c.m.
Suboccipitofrontal,	52.50	c.m.
Bisacromial,	40	c.m.

The sagittal suture was 35 c.m. long and 3.40 c.m. wide. The anterior frontal was 25 c.m. and the posterior frontal was 5.80 c.m. There was an anterior, posterior, and two lateral fontanelles open.

The length of the child was 58 c.m. There appeared to be no other defect than the hydrocephalus. During the first day after his birth he cried a great deal, was cyanotic at intervals, and had one convulsion. He gradually failed and died on the morning of November 3rd, just one week after delivery.

Autopsy.—Opening the calvaria there was apparently no cerebrum, the basal ganglia and cerebellum were present, there were four quarts of fluid within the membranes. There was marked congestion of both lungs with considerable atelectasis. Under the conditions the child did well to live a week, and its death was a blessing.

The mother made a smooth recovery and was discharged in good condition on November 13, 1905.

I have reported these five cases because of their peculiar interest. The two deformed pelves offered no other solution to obtain a living child. The two labors complicated by fibromata showed in one that the neoplasm did not obstruct the delivery, but that in the uterine contraction, after the third stage, the tumor of its own weight obstructed the free discharge of lochia, and became so great an irritant that its removal was imperative in the first week of the puerperium. In the other the difficulty of making a diagnosis of broad ligament fibromata complicating labor is not easy. In view of the fact that tumors of a fibrous nature usually take care of themselves, it was only just that the patient should be allowed to go into labor. It became the duty of the surgeon to be prepared for the emergency should there be an obstruction.

In the case of the monstrosity there is no scientific man who would question the wisdom of the

Cæsarean section. The operation is quickly done, and is clean, with no troublesome treatment to be pursued after the patient leaves the table.

I must refer again to the presence of the loop of intestine found in the field of operation. It is a good object lesson against haste.

139 West Seventy-seventh Street.

IS NERVOUS DYSPEPSIA A DISEASE SUI GENERIS?

By Achilles Rose, M. D.,
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The classification of stomach neuroses in medical literature has had different periods. During the seventeenth and eighteenth centuries many forms of gastric disorders were called nervous dyspepsy. With the development of pathologicoanatomical discipline during the middle of the nineteenth century anatomical conditions as the cause of what was called nervous dyspepsy were found, and the existence of purely nervous dyspepsy was denied. Again, in 1879, Leube formulated a system of description of nervous dyspepsy which is entirely theoretical and very indistinct. Many writers then assumed that cases of so called nervous dyspepsy for which no anatomical basis could be discovered, were manifestations in the stomach of general neurasthenia or hysteria.

Studying the relations of atonia gastrica to gastric disorders we arrive at the conclusion that many cases which have been diagnosticated as hysteria, neurasthenia, or nervous dyspepsy, are nothing but manifestations of atonia gastrica.

The physiological function of the diversified crosswise fibrous arrangement of the three flat muscles of the abdominal wall, supported by the rectus abdominis, consists in preserving the physiological position of the abdominal viscera, simultaneously regulating the movements of the fluid contents of these viscera, controlling to some extent the secretion, the circulation, and the innervation.

When the abdominal wall becomes atonic, when the muscular fibres are relaxed, diastatic, elongated, the fasciæ and tendons flaccid, when there is splashing sound, the abdominal vessels can no longer support the viscera wholly or partly, nor control their functions as under normal conditions, and the first consequence is that these organs leave their normal position and sink down. Such ptosis is conducive to many pathological conditions, especially gastric disorders of anomalous secretory as well as motoric functions. All pelvic organs, the stomach, the intestines, kidneys, liver, uterus, may be involved in different ways by gastroptosia. (By this word I mean abdominal relaxation.)

The reflex effects upon innervation are many, and, as mentioned already, many cases which have been diagnosticated as hysteria, neurasthenia, or nervous dyspepsy, are nothing but manifestations of atonia gastrica. Nothing is easier than to furnish conclusive evidence. When we have to deal with a case diagnosticated as nervous dyspepsy in which splashing sound can be elicited, we apply the abdominal plaster strapping, that is, we relieve the relaxation, and if by means of this strapping the gastric symptoms are relieved, we cannot doubt any more as to the cause of the dyspepsy.

Abnormal forces of pressure and traction which make themselves felt in the relaxation of the abdominal walls have been investigated too little in regard to their pathological and nosological importance, while the forces that may be turned to account in order to regulate abnormal pressure and traction, have not met with sufficient therapeutical recognition. The enthusiasm entertained for bacterial, chemical, or toxic processes has caused modern medicine to forget almost entirely the importance of mechanical conditions. When we relieve by means of abdominal support the symptoms of so called nervous dyspepsy, we have a scientific foundation for our therapy, while medicinal treatment is frequently but a blind experimentation with unknown quantities.

I beg to refer to my numerous writings on the relation of atonia gastrica to different nosological and pathological conditions.[1] In all these publications the abdominal belt for the relief of gastroptosia and the mode of its application are fully described.

The adhesive plaster belt, if properly applied, and with proper selection of the kind of plaster used will be borne by most patients comfortably for about five weeks. Not only is there no complaint, but great enthusiasm of the beneficial effect pronounced by the patients. Those whose skin is so exceedingly sensitive that the plaster becomes intolerable are rare exceptions.

126 East Twenty-ninth Street.

Bernard Shaw on Vivisection in Animals and Man.—The following editorial is to be found in the New York *Sun* of May 13, 1906: Speaking at a meeting of the British Union for the Abolition of Vivisection, Bernard Shaw criticised the attitude of the medical and surgical practitioner toward human as well as animal vivisection. When, he remarked, it was a question of earning sixty guineas in an afternoon it was a very strong temptation to a man who could do that by performing an operation to believe that an operation was necessary where it was not necessary. He did not think it was good public policy for any person to have a strong pecuniary interest in mutilating his fellows. He did not say that the surgeon actually knew that an operation was unnecessary, but if they gave a man sixty guineas to believe a thing he would have a strong disposition to believe it. The world has learned that Mr. Shaw's tongue is a two edged sword, that it is sharp, long and pointed, and does great execution when he runs amuck. Human nature is weak, and some of it, as is known by other people than the author of "Mrs. Warren's Profession," may be influenced by money. To the honor of mankind be it said that men of the type of Benedict Arnold are *aves raræ,* and though there are doubtless men in the profession of surgery, as in all vocations, within whose brains the gray cells of conscience may be badly nourished or congenitally absent, they are proportionately as few and far between as the Iscariots and the Arnolds. "Put yourself in his place" is the golden rule of the conscientious surgeon as of the conscientious author, for, after all, it is but a question of conscience, and it may be that even the intellectual runner amuck will prove a factor in quickening the professional conscience. Who knows?

"God moves in a mysterious way
His wonders to perform."

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[1] Achilles Rose, Atonia Gastrica and a New Method of Treatment. *New York Medical Journal*, May 11, 1901.
Achilles Rose and Robert C. Kemp, *Atonia Gastrica.* New York: Funk & Wagnalls Company.
Achilles Rose, Atonia Gastrica in Relation to Chololithiasis. *The Postgraduate,* June, 1906.

Our Readers' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LIII.—How do you treat burns? (Closed August 15, 1906.)

LIV.—How do you treat spasmodic croup? (Answers due not later than September 15, 1906.)

LV.—How do you treat acute articular rheumatism? (Answers due not later than October 15, 1906.)

Whoever answers one of these questions in the manner most satisfactory to the editors and their advisors will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short; if practicable, no one answer to contain more than six hundred words.*

All persons will be entitled to compete under the regulations laid down by the postal authorities. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL.

The prize of $25 for the best essay submitted in answer to question LII, has been awarded to Dr. Henry C. Becker, of New York, whose article appeared on page 389.

PRIZE QUESTION NO. LII.

THE TREATMENT OF HEMICRANIA.

(Concluded from page 391.)

Dr. G. A. Moore, of Palmer, Mass., says:

It is not my intention to give a list of therapeutical don'ts, relative to this condition, with the exception of one: Do not use morphine in these cases unless it is absolutely necessary. The most important measure is to promote a thorough elimination, and this is well done by administering epsom salts in fairly good sized doses. Whether called early or after the case is well advanced, order a dose of salts; send the patient to bed in a quiet, darkened room; apply heat or cold, according to which is more beneficial, to the head and neck, sometimes a mustard paste over the sympathetic is of value. Prescribe acetanalide with or without caffeine, as is indicated. The acetanalide is not given, solely for relief of pain, but also to promote the excretion of uric acid, which it does better than sodium salicylate, though this last is a favorite agent with many in these cases. For twenty-four hours give fair doses, 40 grains of sodium bicarbonicum every five hours, and in severe cases ergot, fifteen to thirty mm., every four hours. Of course there are cases in which it will be necessary to resort to morphine or some other derivative of opium. In such cases I give one sufficient dose rather than small doses repeated throughout the day. It will be found, however, that in conjunction with ergot the sufficient dose will represent a much smaller amount of the drug than if used alone.

Usually this treatment is sufficient. Electricity so valuable in many forms of headache has been of but little use to the writer in this condition; chloral, hyoscine, and cannabis indica have been tried and discarded. Frequently a second dose of magnesium sulphate is required, before the toxines which are annoying the inflammable neurons, are gotten rid of. These salts may be administered even when the patient is suffering from nausea, and always with happy effect.

In the interval examine the patient carefully for gastric, nasal, or ocular difficulties, and correct any wrong conditions found. Particular attention should be given to the stomach. While ocular symptoms often abound in hemicrania, the writer has found but little to indicate an ocular cause of this malady.

In the foregoing there may seem to many a paucity of therapeutical agents, but I believe the fewer drugs used to attain the desired result the better.

Dr. Isaac W. Brewer, of Fort Huachuca, Arizona, notes:

Hemicrania is a constitutional neurosis, the principal symptoms being periodical attacks of pain in the head, generally along the fifth nerve, associated with nausea, vomiting, and disorders of vision. The cause of the disease is obscure. Heredity plays an important part. Many of the victims are gouty, and errors of refraction and diseases of the nose and adjacent cavities appear to be causes. Errors of diet and the autointoxication associated therewith appear to be the most usual exciting causes. Underlying all of these factors is a nervous condition that is not well understood.

The patient is generally aware of the impending attack several hours in advance of the first symptoms of pain. My experience has been that the patient awakes with a feeling of heaviness in the head which soon develops into a distinct ache in one temporal region. The pain soon spreads to the other side, and becomes intense and throbbing in character and is exaggerated by the slightest noise or light. There is pain behind the eyeball, and dimness of vision, nausea, and vomiting, if the stomach contains food. The bowels are frequently constipated, and the urine high colored and very aromatic. These attacks recur with more or less regularity; sometimes as often as once a week, and again the interval is much longer. Usually the patient knows what will provoke an attack and avoids it.

Persons who are subject to hemicrania should lead as hygienic a life as possible, avoiding excesses of all kinds and any undue excitement. Their eyes should be examined, and any errors of refraction corrected by proper glasses. If there be disease of the nose or the adjoining cavities it should be treated. Persons who are gouty should have their diet regulated and take a proper amount of outdoor exercise. The diet should be simple, and care should be taken to avoid those things that disagree with the person.

Each attack must be treated upon its own merits. Cases in which the nervous system appears to be most at fault do well on large doses of the bromides or upon cannabis indica. In my hands

static electricity has proved most useful in this class of cases. Cold packs often afford relief. It has been my experience that in the majority of cases the gastrointestinal tract is at fault, and I have found the following plan of treatment to be the best in such cases:

As soon as symptoms appear the patient is given a warm bath, followed by an enema of salt water, and if the stomach is full it is washed out. A saline cathartic or broken doses of calomel are now given, and the patient placed in bed in a cool, dark room, and directed to drink freely of plain or mineral water. This is best taken cold, as the object is to flush out the kidneys. The pain in the head is best relieved by an ice bag to the forehead or a cold compress. This treatment will usually relieve an ordinary attack in a few hours. Caffeine alone or combined with acetphenetidin (phenacetin) or antipyrine may be used, but in my hands they have not proved satisfactory. Whatever the treatment food should be withheld, unless the attack lasts more than twenty-four hours, or the patient be feeble, then it is necessary to administer some predigested food.

Dr. B. M. Randolph, of Washington, D. C., states:

The treatment of hemicrania is divided into prevention and cure. As is always the case with diseases of undetermined pathology and ætiology, treatment has always been empirical. The cause of hemicrania is not determined. Some claim that it is an autointoxication; others a disease *sui generis*, like epilepsy; again others maintain it is a form of epilepsy. Clinical experience has led me to believe the periodic attacks of headache, associated with nausea and many other functional disturbances, and known as hemicrania, to be produced by the association of three ætiological factors: 1. An inherited neuropathic tendency. 2. Chronic functional disturbances or habitual failure to follow a normal mode of life, resulting in chronic autointoxication. 3. Exciting causes which precipitate the explosion.

1. A neuropathic inheritance does not mean the inheritance of any diseased condition, but rather an unstable nervous organism, which is easily upset by trifling disturbances. All healthy organs have, in addition to the power of performing their normal functions, a margin of power which enables them to meet abnormal demands. In the neuropathic this margin in the nervous system is absent or reduced to a minimum. The result is an exaggerated sensitiveness and absence of recuperative power.

2. While most sufferers from hemicrania have the described temperament to a greater or less degree, the disease itself is an autointoxication, chronic in character, cumulative in action, culminating in an acute outbreak, just as does an attack of gout. A number of conditions may be responsible for the production of the toxic material. Constipation, chronic digestive disturbances, improper food, improper habits of eating and drinking, are among the most frequent causes. Latent appendicitis, gallstones, and other inflammatory conditions may be to blame. There is one frequent cause of autointoxication that is apt to be ignored, and that is muscular inertia. The manifest function of voluntary muscle is the performance of certain mechanical movements which minister to our needs and convenience. We lose sight of the fact that the muscular system is Nature's crematory for a large portion of the waste of metabolism. A "torpid liver" is often a liver overtaxed with oxydizing processes left undone by muscles that are drones. Massage, electricity, and hydrotherapy give relief in such conditions, because they stimulate oxydation in the lazy muscle. Many sufferers from hemicrania have flabby, relaxed, undeveloped muscles from habitual disuse. They are only employed for a hurried nervous locomotion, which is the very reverse of healthy exercise.

3. The exciting causes of hemicrania are fatigue and worry which produces fatigue. Fatigue is only healthy when it is the result of healthy exercise of the functions of the body. Women are especially liable to fatigue which is of the most unhealthy sort. Social engagements, shopping expeditions, the worry over dress and social ambitions, the vexations of household routine, and a host of other petty annoyances from which they cannot detach themselves, cause the expenditure of untold nervous energy. Fashions in dress which interfere with proper respiration, and compel an attitude which requires a continuous tension on certain groups of muscles in order to maintain equilibrium, are no small factors in the production of unhealthy fatigue. Worrying is a gift of the devil, a bad habit, the result of morbid temperament and lack of control, and possibly a symptom, as much as a cause of the autointoxication. Eye strain acts both as a predisposing and an exciting cause of migraine attacks, but correction of refractory errors will not relieve every case of hemicrania.

Having ascertained the conditions responsible for the autointoxication, common sense will point the way to their removal. Having instituted the proper therapeutical and hygienic treatment, we must bring to bear all possible influence to induce the patient to break up unwholesome habits.

The treatment of the attack itself is most unsatisfactory. Mild cases may be relieved by any of a number of sedative or analgesic remedies. The typical severe attack, associated with nausea and vomiting, runs its course uninfluenced by drugs. No drug taken by mouth can be absorbed during nausea. My best results have been obtained by giving ⅛ grain of calomel every half hour till it is retained, and continuing this dosage till one grain is retained. The nausea may often be controlled by a mustard plaster. Keeping the patient in a dark, quiet room, using such alleviating measures as cold wet compresses or some of the menthol preparations to the head, controlling the nausea by sinapism, and getting in the calomel as soon as possible, seem to me to shorten and modify the most severe attacks.

The only scientific and satisfactory treatment, however, lies in preventing the attacks.

Therapeutical Notes.

Treatment of Warts.—Dissolve fifteen grains (1 gramme) of bichloride of mercury in one ounce (30 grammes) of flexible collodion, and apply carefully a small quantity to the wart once a day.—*Journal de médecine de Paris,* June 10th.

Traumatic Dermatitis.—The following has been recommended in cases of dermatitis with great irritation:

℞ Zinci oxidi, ... 1 part;
Olei amyd. dulcis, ... 1 part;
Adipis lanæ, ... 1 part.
M. To be spread on lint and applied to the part affected.

The Practitioner, August.

Radium Therapy in Pædiatrics and Gynæcology.—Abbe thinks this subject of importance. The substance is now much more powerful than when first prepared. also the individual reaction is now more clearly appreciated. Concerning the radiations the alpha rays are most abundant and least penetrative, the beta rays are fewer and more penetrative, the gamma rays are fewest and most penetrative. The container of the radium may be of glass, aluminum, or mica, each having its advantages for particular conditions. The most satisfactory results of treatment have been in connection with birthmarks, lupus, and keloid. In advanced cases of cancer of the uterus it relieves some of the symptoms and may be curative in the early stages. It is the most desirable means for the treatment of inoperable strictures of the rectum and œsophagus, giving more comfort to the patient than colostomy or gastrastomy.—*American Journal of Obstetrics.*

On Instillation of Atropine in One Eye in Convergent Squint.—Fröhlich, in *Klinisches Monatsblatt für Augenheilkunde,* January, 1906, treated nine cases of convergent squint by ordering convex glasses and by dropping atropine into the fixing eye. A cure was effected in four cases; the disappearance of the strabismus, however. was not always accompanied by an improvement of the sight of the squinting eye. In the other cases the treatment failed; yet it involved some interesting changes which are worth recording. One only case remained quite uninfluenced. Temporary alternation of the squint was observed in the second case; while in a third, constant convergence of the good eye occurred as long as atropine was continued. The same reversal which, however, did not disappear on the discontinuation of atropine, took place in a fourth case, in which the child exhibited also the interesting phenomenon of false projection when the nonfixing eye was covered. These periods could be distinguished in the course of treatment of the fifth case. During the first, the squint became alternating, and the vision of the originally squinting eye improved considerably. In the second period, not only the squint, but also the sight of the two eyes became reversed. During the third period, on the discontinuation of atropine, the original condition of squint and visual acuity reestablished itself.—C. Markus in *The Ophthalmoscope.*

Protocetraric Acid for Seasickness.—Protocetraric acid is a derivative of cetrarin, obtained from Iceland moss (Cetraria islandica). It was first described by Knopp and Schnedermann, and subsequently studied by Hesse. Brissemoret and Degny, in the service of Huchard (*Journal des practiciens,* September 25, 1897) first utilized its antimetic effects. Recently, Chevalier has called attention (*Bulletin général de thérapeutique,* May 23rd) to its usefulness in the treatment of vomiting in *mal de mer.* It overcomes the spasmodic contractions of the stomach and relieves gastric irritability, and substitutes normal peristalsis. The action of this remedy upon the central nervous system is not very marked. In rather large doses it acts as a bulbomedullary paralyzing agent; but in therapeutical doses this action is usually not evident; nevertheless. it should be taken into consideration in explaining the action of the drug in suppressing the vomiting of tabes and of pregnancy, which are of central origin. The alcoholic solution (0.16 to 1 c.c.) may be employed in doses of twenty-five to sixty drops several times a day equivalent to 0.5 to 0.6 gramme of protocetraric acid in the twenty-four hours. The solution may be dropped upon a lump of sugar.

Treatment of Rhinopharyngitis in Children.—Le Marc'hadour, in the *Journal de médecine,* describes the methods he adopts. He introduces, three or four times a day. into the nostrils tampons of absorbent wool, drawn out to a point, and holding boric petrolatum, to which can be added astringents:

℞ Acidi borici, ... 1 part;
Antipyrini, ... ½—1 part;
Petrolati, ... 20 parts.
M.

Menthol in oil can be used instead for children who cannot stand the tampons, or who will not allow them to be introduced. Bigger children should take either of these powders:

℞ Thymolis iodidi, } ..... āā ʒi.
Lactosi, }
M.

Or

℞ Alumin. acetotartrat. ..... ʒi;
Lactosi. ..... ʒ i½.
M.

At the same time local applications for the nasopharynx must be made by means of sprays of boric acid solution. If the effect is delayed the pharyngeal surface must be directly treated by swabbing with iodized glycerin (equal parts), or with the following:

℞ Iodi, ... gr. iv;
Potass. iodid. ..... ʒss;
Ess. menth. pip., ... ♏iv;
Glycerini, ... ʒv.
M.

Twice a week, afterwards once, the nasopharynx must be gently massaged by means of a curved probe wrapped round with absorbent wool

in such a way as to pass behind the soft palate. More energetic rubbing helps greatly to reduction of the congestion of the mucous surface. As most of these children are lymphatic, general treatment, based upon cod liver oil, iodotannic syrup, and good feeding, should also be undertaken.—*The Practitioner.*

The Injection of Paraffin for the Cure of Ozena.—Out of twenty-two cases of ozena, taken without selection from among the patients at the dispensary of the Hôtel-Dieu, and from private practice, Guisez reports that there was in seventeen a complete cure obtained by the following method: By the injection of paraffin (not heated) under the mucosa, an effort was made to reduce the size of the nasal chambers. In this way it was sought to make it easier to clear the nose of secretions, and the formation of crusts was prevented. The technics is very simple; after cleaning the nasal mucosa and removing the crusts, the part to be operated upon is well cocainized (5 per cent. solution applied on cotton). Paraffin, softened by pressure, is delivered by a special syringe (Brockalet Lagarde), under the mucous membrane. The needle is introduced, for a certain distance, parallel with the surface, and the paraffin slowly injected as the instrument is withdrawn. In this way a lost turbinal may be artificially restored, but it will require several applications. In the same way elevations, artificial or spurs may be made on the septum nasi; or other injections may be made into the floor of the nasal chambers. At each injection, the quantity used should not be greater than one c.c. Subsequent injections, with intervals of five or six days, may bring up the total quantity required to build up a turbinal, to two or three c.c., at the most. All local treatment is suspended in the meantime, except that the patient is told not to blow his nose hard, and instructed to introduce a little sterilized petrolatum into each nostril and sniff it up well. At the end of two or three weeks, the local application of antiseptic solutions or irrigations may be resumed, which would have been useless or injurious previous to this time.—*Le Bulletin médical,* May 23, 1906).

Treatment of Chololithiasis.—Lorand, of Carlsbad (*L'Union médicale du Canada,* May 1, 1906), declares that the two most prominent factors in the pathogeny of biliary calculi are: (1) Stagnation of the bile, and (2) the immigration of bacilli into the bile passages as the prime factor, since they occasion the inflammation, which as Naunyn has shown, is the direct cause of biliary calculi. Lorand considers the faulty action of the thyreoid gland, or of the sexual organs, as one of the most important agencies in bringing about stagnation of the bile. In the morbid states which are thus produced all the process of nutrition are lowered. This constitutes the best foundation for the formation of biliary calculi. The insufficiency of the thyreoid may be only partial, and this is of much more common occurrence than complete insufficiency with myxœdema; the symptoms therefore may not be recognized. Since constipation plays an important rôle in the production of gallstones, every effort should be directed to overcome it. A mixed diet is preferable to one composed of meat exclusively, the patient should eat a quantity of vegetables, whole wheat bread, fruit, both raw and baked, grapes, etc. Mineral waters, especially the saline alkaline of Carlsbad, of which the purgative action is well marked, are recommended. Vichy is less active, and is preferred in some cases. The action of the waters, relieving local catarrhal inflammation, is heightened by the application of cataplasms of warm clay over the gallbladder. Under this treatment the sensitiveness of the part may disappear entirely in a few weeks. Subsequently the use of thyreoid preparation may be considered. In cases of empyema of the gallbladder, or obstruction of the common duct by a stone, surgical interference may be required.

A Lotion for Rhus Poisoning.—Dr. Starling Loving, of Columbus, Ohio, informs us that he has found this lotion promptly effective in almost all cases:

℞ Chloral hydrate, ...2 drachms;
Sodium hyposulphite, ...1 ounce;
Distilled water, ...1 pint.
M. S.: Keep the inflamed parts covered with a cloth constantly moist with the solution.

Dr. Loving adds that when this fails he gets good results with the official black wash.

Alcohol as a Test in Gastric Disorders.—In a communication to the Société de Biologie, M. Carnot (*Le Progrès médical,* May 19th) stated that the secreting power of the stomach may be tested with alcohol. If swallowed in a small quantity it causes a flow of gastric juice, which can be withdrawn with a tube and analyzed. The test is made three quarters of an hour after taking the alcohol. In normal stomachs the reaction is nearly the same in all. In pathological stomachs, some yield a hyperacid or higher peptic secretion, others (as in atrophic cirrhosis, cancer, etc.) there is no reaction whatever, and the liquid withdrawn contains neither acid nor peptic constituents. In cases of alcoholic gastritis the secretion is not acid, but it will digest albumin if acid be added. In some cases there is a hyperabundance of mucus.

Kinesitherapy in Tuberculous Arthritis.—Saquet, of Nantes, in a recent work on the treatment of white swelling by gentle massage and prudent mobilization, reported several cases in which systematic massage overcame the inflammatory process, and finally preserved a useful joint. P. Kovindjy (*Le Progrès médical,* May 19th), while approving of this method previous to suppuration, excludes from all massotherapeutical treatment cases of tuberculous arthritis in which pus is found. In other conditions, the so called dry arthritis, and in congestive cases, he recommends it, on condition that it is applied by a massotherapeutist, who is sufficiently experienced. In cases of abscess after surgical operation for removal of diseased bone, massage and judicious movements will restore a useful joint. Illustrative notes of cases are given.

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SIR JAMES BARR'S TORONTO ADDRESS.

We have to thank the editor of the *British Medical Journal* for proof sheets of the address in medicine delivered before the British Medical Association in Toronto last week by Sir James Barr, M. D., F. R. C. P., F. R. S. E., of Liverpool. It is preeminently a scholarly production. It always adds to the value of experimental investigation if the experimenter is at the same time a practitioner, for then his interpretations are tempered and checked by clinical observation; and such is the case with Sir James Barr. The subject of his address was The Circulation Viewed from the Periphery. Naturally it dealt for the most part with the capillaries. Within the space at our command we cannot attempt anything like a full analysis of the address, which is very long, but must content ourselves with brief references to a few of its features.

The importance of the subject is well set forth by Sir James when he says: "I have previously asserted that diseases of the heart most frequently arise from causes acting on the periphery, and hence there is here no room for specialism. The man who only studies the circulation with the aid of a stethoscope is a positive danger to society." As regards the rapidity of the capillary circulation, it is only when a record is to be made that the author makes use of any sort of apparatus; for ordinary observations he finds all that is necessary in a very time honored and simple procedure. "I have long," he says, "been in the habit of estimating the velocity by compressing the blood out of the capillaries in a given area and then watching the quickness or velocity of the return."

Speaking of patients the upper part of whose body is livid from cardiac weakness, he says very judiciously: "These patients do not require a cylinder of oxygen, with which they are frequently plied, but the judicious application of a little common sense, such as the intravenous injection of small doses of adrenalin or some cardiac tonic." The dependence of the velocity of the venous circulation upon the *vis a tergo* is vividly set forth in the statement that the rapidity is five times as great in the hanging arm as in the arm held out horizontally.

The address is not without touches of humor. Speaking of an alleged American divorce based on the fact that the woman's feet were habitually cold at night, Sir James says: "Possibly if the lady had been under medical treatment she might have conserved her own comfort, preserved the affection of her husband (though she might not have thought the affection of the brute worth preserving), and saved the notoriety of the divorce court."

SIR VICTOR HORSLEY'S TORONTO ADDRESS.

It was quite natural that Sir Victor Horsley should take for the subject of the address in surgery which he delivered last week before the Toronto meeting of the British Medical Association The Technique of Operations on the Central Nervous System, for it pertains to a department of surgery in which for many years he has played a prominent and brilliant part. The address was long and dealt with many aspects of the subject, but it was so technical that no adequate summary of it can be given within our present limits of space. For the opportunity of perusing it in print we are indebted to the editor of the *British Medical Journal*, who has kindly furnished us with proof sheets.

In the main, the address is a review of the progress of intracranial surgery during the last twenty years, the author drawing his data chiefly from his experience in the National Hospital for the Paralyzed and Epileptic, in University College Hospital, and in private practice. Sir Victor regrets that our diagnostic resources have not yet increased to such an extent as to put surgical intervention upon a very secure basis. Consequently, he intimates, the question of resorting to it must for the present be decided rather from an empirical point of view. He calls to mind the fact that in 1890 he himself proposed that in cases of Jacksonian epilepsy and other conditions suggestive of gross organic disease of

the brain a definite probationary period of medicinal treatment should be agreed upon, practically lasting for six or eight weeks, and then, after the failure of drugs, "in an elementary case where no urgent symptoms like optic neuritis existed, surgical treatment should be employed." Though he failed to get a general expression of opinion on this point, he found himself fortified by Dr. M. Allen Starr's declaration, in his work on *Brain Surgery*, that "the surgeon should be invited to consultation in the case after about three months' medical treatment had been unsuccessful"; and virtually such a course is now the general practice in the National Hospital for the Paralyzed and Epileptic. The address is replete with the mature thought of one of the most experienced operators on the central nervous system, and it will be found to be a solid addition to the literature of the subject to which it is devoted.

HUMAN INFECTIONS.

Recently, while visiting a farm, the writer was impressed with the number of dead chickens lying about, and inquiry elicited the fact that more than a hundred had succumbed to "chicken cholera" within a brief period. Even if nothing were definitely known about this disease, the most cursory consideration of the fact that without change of diet or of ordinary external conditions, or possibility of gross poisoning, so many deaths had occurred, in a short time, would indicate the existence of an epizootic. And, with our present knowledge, an epizootic means a readily transmissible germ disease. Yet this epidemic, which would occasion terror if it involved our own species or grave economic problems, if the victims were larger and of greater financial value, existed without involving human beings, various domestic quadrupeds, or even other fowls quite directly exposed to infection. As is often the case, the really significant feature of such a phenomenon lies in the unknown and not in the various known factors. Why does not the parasite of this disease find a suitable lodging place in other animal hosts, or, granting that it may actually be implanted in these other hosts, and live, for a time at least, why does it not thrive with sufficient virulence to cause a definite disease?

It is a prevalent but utterly false notion that the human species is especially the prey of parasitic life, and, in particular, of such parasites as are of microscopic size and produce symptom complexes of a general nature corresponding to the conception of an infection. As a matter of fact, some sixty or more infectious diseases are practically limited to the lower animals, whereas a liberal count, including the exanthemata, whose cause is unknown except, probably, in the case of variola, and including various rare and somewhat doubtfully specific processes, makes the number of infections attacking man only about fifty. George Freeman enumerates eighty-seven epizootic diseases affecting wild quadrupeds and twenty-seven affecting fishes.

Among the diseases which are, in the objective sense, distinctly human may be mentioned scarlet fever, measles, chickenpox, rötheln, and typhoid fever. The first four are, however, only clinical entities, and it is not impossible that they may be represented among the lower animals. If they are, the possibility of protective inoculation is suggested by the analogy of variola and vaccinia. The typhoid bacillus is capable of passing the alimentary canal of lower animals unharmed, and, under experimental conditions, it may cause some degree of intestinal toxæmia.

The three venereal diseases are, clinically, limited to the human species, yet the gonococcus can, in all probability, grow and produce lesions in the conjunctiva and cornea of many animals. The Ducrey bacillus can certainly develop in some lower animals, and the *Spirochæta pallida* has produced pretty typical lesions of syphilis in many individuals and several species of monkeys. Relapsing fever and many other diseases usually considered essentially human occur in monkeys, and it would be unwise to state that any given infection is solely human.

In discussing the limitations of infections according to the species of hosts, we must bear in mind that man is unique in that he always exists under more or less artificial conditions, including the use of cooked foods and various other details that have, in the course of the thousands of years of his existence, left an impress upon his physiology. He is also nearly unique in constituting a single species of a single genus, and in having developed no distinct varieties in the strict biological sense.

In regard to the distribution of parasites among different species of potential hosts, we may recognize certain limitations as due to accident, meaning relative lack of opportunity for infection or increased resistance, as in the case of septic and venereal diseases and some others. It is a very curious fact that, in our own species, certain infections are quite local, so as to be almost or quite unknown among races that have absolutely no immunity toward them. It is not surprising that typhoid fever and the exanthemata failed to develop in aboriginal America, shut off

by water and ice from the eastern continent, but the endemicity and only occasional extension of Malta fever, cholera, and various tropical infections are contrary to expectation.

Whether there is any true racial immunity or predisposition in human beings is doubtful. Only the five great races, distinguished by color and other characteristics, are at all permanent, and even these scarcely correspond to the varieties technically recognized by biologists in the lower animals and in the vegetable kingdom. There is, at least, no absolute racial immunity or predisposition, and the different degrees of prevalence of various infections in these five great races may be explained by differences of climate, opportunities for infection, nutrition, habits of life, etc.

PROFESSOR LANKESTER AND THE BRITISH MUSEUM.

The enjoyment of the recent meeting of the British Association for the Advancement of Science was somewhat marred by the announcement that Professor E. Ray Lankester had been summarily notified that he was expected to retire from his position as director of the Natural History Department of the British Museum in May next. The trustees of the museum have taken advantage of a clause in the Civil Service Superannuation Act to call upon Professor Lankester to retire from his position on account of having reached the age limit, sixty years, with a pension of £300 a year, and they have refused to explain their action.

As Professor Lankester states in a dignified letter to the editor of the *Times*, he was called to the post of director of the Natural History Museum in 1898, when he was over fifty years of age, and in accepting the position he voluntarily relinquished the Linacre professorship in the University of Oxford, tenable for life, with a six months' vacation each year and a salary of £900. After he had resigned his Oxford chair he learned that there had been an acute divergence of opinion among the museum trustees as to the desirability of the appointment. The fact that the three principal trustees, who appointed Professor Lankester in spite of this lack of unanimity, have now been replaced by three other principal trustees may explain why such action has been taken at this time.

Professor Lankester's reputation is established throughout the scientific world, and if this action by the trustees of the British Museum is allowed to remain unexplained in the case of a man so eminent in science, how much security can scientific men of less eminence feel when called to positions of public service? We see too many examples of lay trustees, of both public and private institutions, passing judgment upon the attainments of scientific men and interfering with their work. It is quite time that such treatment by lay trustees should cease. Usually some personal spite is at the bottom of the manifestations.

As the *Times* says editorially, "In any country but this it would be thought grotesque and monstrous that a distinguished man of science, asked to serve the state after the age of fifty, with his abilities fully tested and his scientific reputation fully established, should be treated on the same footing as a clerk who might never have done anything but copy a document and perhaps post a ledger."

This is a serious phase of the matter; but we cannot but think that a more serious aspect is the tendency which at the present day groups of men in high position have to determine the fate of other men, both young and old, by a sort of star chamber procedure.

PIG'S LIVER AS A REMEDY.

A remarkable case is reported by Professor Henri Desplats in the *Journal des sciences médicales de Lille* for July 28th. It was that of an intemperate man, thirty-five years old, who appears to have had cirrhosis of the liver. At least he had ascites of such a degree as to require his being tapped fourteen times between December 12th and March 31st, the liver was enlarged, there was a moderate manifestation of a supplementary venous circulation in the abdominal wall, and there were endothelial cells and a few lymphocytes in the ascitic fluid. He had other serious ailments, but their nature does not seem to have been made out very clearly. There was quite a persistent hæmaturia, and this was thought to depend on tuberculous disease of the kidney. At a certain period of his illness there was a cake-like exudate within the abdomen, and that was supposed to be connected with tuberculous disease of the omentum.

The most notable feature of the treatment was the employment of enemata of macerated pig's liver. Twenty-three such enemata, each containing about an ounce of fresh liver, were administered between February 6th and March 30th. The man recovered completely from all his ailments, and was able to resume a rather active occupation, though he did not reform his habits. M. Desplats regards the use of pig's liver as an

example of opotherapy, and to it he attributes the man's recovery. He states that in a previous instance of a similar sort he had used the same treatment with success. It may have been opotherapy which got the better of the hepatic disease, and perhaps the repeated tappings were sufficient to overcome the tuberculous affection of the omentum if that really existed, but it is not easy to understand what it was that cured the hæmaturia if indeed that depended upon tuberculous kidney disease. However, the remedy must certainly be innocent, and it may be well to try it in cases of hepatic cirrhosis.

THE RETROVERSION PESSARY.

It is but a few years ago that pessaries played a prominent part in gynæcological practice. Indeed, there was hardly an ambitious young practitioner of gynæcology who did not essay to win his spurs by inventing a pessary, and many of the products were ludicrous. Some special form of pessary was used, at least by its inventor, for each variety of uterine displacement, real or fancied. But gradually the consensus grew that the Hodge pessary or some modification of it, especially Albert Smith's, was the only suitable instrument for general use. This was a step in the right direction, though erroneous notions were entertained as to the action of the pessary, notably the preposterous idea that the upper bar of the pessary pressed the body of the uterus forward into place. There were a few practitioners who felt convinced that this view was incorrect, and they did not hesitate to say so, but their protests made no impression upon the makers of textbooks. Pessaries were used indiscriminately and without the employment of even an elementary degree of skill in their adaptation. The general result was in the highest degree unsatisfactory, and soon pessaries were almost entirely discarded. This action was doubtless hastened by the introduction of various operative procedures for the cure of uterine displacements.

But it was a mistake to give up the pessary altogether. Properly employed, it is still a most useful instrument, and really there was never a time when there were not a few who realized the fact. Now there are numerous indications that the usefulness of the pessary is to meet with general recognition and that the true mechanism of its action has at last been grasped by careful observers. Such indications may be seen in two of the contributed articles which we publish in this issue, Dr. R. S. Hill's and Dr. H. A. Slocum's. Each of these gentlemen understands the mechanical action of the retroversion pessary and explains it clearly. Each, too, sets forth adequately the limitations of the pessary. But the last word has not yet been said. In spite of its essential excellence, the Hodge pessary has its faults. If they were irremediable, we should have to tolerate them, but they are not. The pessary should not be wholly intravaginal; it should take its support externally, though it should not be any one of the wobbly affairs that are to be found on the market.

SYPHILITIC GASTROCUTANEOUS FISTULA.

A case of this kind is reported by Dr. Kuzmik (*Beiträge zur klinischen Chirurgie*, xlviii, 3; *Berliner klinische Wochenschrift*, July 16th). The fistula is attributed to a submucous gumma of the anterior wall of the stomach, which broke down and led to perforation. It does not appear that the author took advantage of the opening to perform experiments in gastric digestion.

A TORONTO SOUVENIR PUBLICATION.

Apropos of the recent Toronto meeting of the British Medical Association there has been issued a sumptuous publication entitled *Handbook and Souvenir of Canada*. It is a magnificent specimen of the printer's art, and it is an exceedingly valuable repository of varied information concerning the great country that adjoins ours on the north. The text has been prepared in a delightful spirit, and it is a pleasure to read it.

THE SO CALLED "REFORMED" SPELLING.

There is nobody like the faddists to apply pressure. Those of them who have long been trying to debase the English language have at last obtained money for the purpose from an enormously rich man, and they have induced the President of the United States to promise them his official cooperation. Even technical words are among their proposed victims, and, though this is not a literary journal, that fact warrants us in expressing the hope that medical writers will not yield to the craze.

"THIS DATA."

Twice on one page of a circular issued by the American Medical Association concerning its forthcoming *American Medical Directory* we find the expression "this data." But ordinary literary attainments are doubtless not indispensable in the compilation of a directory.

News Items.

NEW YORK CITY AND STATE

Changes of Address.—Dr. H. Kendall, late interne at Sydenham Hospital, to 60 East Seventh Street. Dr. Ejnar Hansen, to 244 West Fifty-second Street.

Personal.—Dr. William E. Hoffman has been appointed city chemist of Buffalo, to succeed the late Dr. Gustav W. Lehmann.

The Brooklyn Board of Health.—Dr. Frederic A. Jewett, for many years medical inspector in charge of the bureau of contagious diseases, in Brooklyn, has been retired. This action was taken by the Board of Health after Dr. Jewett had asked to be relieved from further duty.

Civil Service Examinations for the State and County Service.—The State Civil Service Commission will hold examinations in all parts of the State, September 15, 1906, for the following positions among others: Sanitary Chemist, Department of Health, $1,800; Sublibrarian (Classification) State Library, $1,200. The last day for filing applications for these positions is September 10th. The commission has been unable to secure a sufficient number of eligibles for Bridge Designer, Bridge Draughtsman, and Engineering Draughtsman, and qualified applicants for these positions have excellent chance of appointment. General examinations for Stenographer will be held in September and October. Full information and application forms for any of these examinations may be obtained by addressing Charles S. Fowler, chief examiner of the commission, at Albany.

An Ambulance Surgeon Mobbed.—A call sent from an east side tenement house on Friday, August 24th, to Gouverneur Hospital was responded to by the ambulance surgeon on duty, who found a male infant of seven months dead from diarrhœa. A great crowd gathered at the sight of the ambulance. The small apartment on the top floor was packed to suffocation. The ambulance surgeon before leaving said that he desired to examine the child thoroughly, but he was beaten back by a woman, who shouted in Yiddish that the surgeon was going to carve the body up. Excited women gathered about him and forced him to beat a retreat. A policeman found the stairway completely blocked and he sent for the reserves. By the time the surgeon was reached he was being badly handled by the women. The policeman's helmet was knocked off and he was being roughly handled in the same fashion when the reserves appeared. The woman was haled to court and assessed a fine of $2.

The Mortality of New York City for the Quarter Ending June 30, 1906.—According to the condensed report of the bureau of records of the Department of Health, for the quarter ending June 30, 1906, 18,928 deaths occurred during that period, or 632 more than were recorded for the corresponding quarter of 1905. The death rate for the quarter in 1906 was 18.29; in 1905 it was 18.25. Pulmonary tuberculosis claimed 2,319 victims during the quarter; tuberculous meningitis 221, and other forms of tuberculosis 113. There were 1,527 deaths from pneumonia and 1,223 violent deaths, including 67 cases of homicide and 191 of suicide. The deaths of children under five years of age numbered 6,237, of which 801 were due to summer complaints. Six deaths from smallpox occurred during the quarter. By far the greatest number of deaths—8,967—occurred in tenements. There were 6,362 deaths in institutions and 2,936 in dwellings.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending August 25, 1906:

	August 25.		August 18.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	101	22	113	10
Smallpox	3	..	1	..
Varicella	4	..	17	..
Measles	51	7	67	6
Scarlet fever	46	1	32	2
Whooping cough	27	8	51	18
Diphtheria	158	14	151	20
Tuberculosis pulmonalis	589	151	376	176
Cerebrospinal meningitis	9	10	9	4
Totals	988	213	817	236

PHILADELPHIA AND THE MIDDLE STATES.

Additions to the Cooper Hospital, Camden.—A four-story addition will be made to the Cooper Hospital, consisting of a receiving ward dining room, a children's ward, and a dormitory.

Typhoid Fever in the Neighborhood of Berwyn and Devon.—Twenty cases of typhoid fever have developed lately in this vicinity and a careful watch has been instituted over the whole section of the county. No source for the infection has as yet been found.

Meeting of the National Medical Association of Negro Physicians.—The second annual session of this society was held in Philadelphia, August 21st, 22nd, and 23rd. The meeting was held in the Odd Fellows' Temple, and some clinics were held in the Douglas Hospital.

Dr. MacCracken Returns.—Dr. J. C. MacCracken, who left for China last December, to help found a medical school under the auspices of the University of Pennsylvania, has returned to give some lectures on the work in the East and obtain some money for the school. He will be married in September, to Miss Helen Newpher, of New York.

Camden Antituberculosis Society.—A local branch of the New Jersey Society for the Prevention of Tuberculosis was started on Wednesday evening, August 15th, at the office of the mayor. The mayor is much interested and is assisted by Dr. Frank N. Robinson, a city councilman, and Dr. John T. Leavitt, the city medical inspector.

Improvements to the Almshouse (Blockley).—The quarters which have been used as out wards will undergo a thorough renovating and some additions will be made. Room for eight hundred more patients and a system of hydrotherapeutics will be arranged. The patients will be accommodated in the buildings of the Philadelphia export exposition.

Lebanon, Dauphin, and Lancaster Counties' Reunion.—These counties, which comprise the Fourth Censorial District of the State Medical Society, held their annual reunion at Inglenook, Dauphin County, on August 23rd. The members in charge of the arrangements were Dr. J. B. MacAlister, of Harrisburg, and Dr. W. J. Middleton, of Steelton.

Pennsylvania Exhibit at Toronto.—The system of the department of health of this State was shown at the Seventy-fourth annual meeting of the British Medical Association. It was the only exhibition of its kind and attracted much attention. The Commissioner of Health, Dr. Samuel G. Dixon, delivered the address on State Medicine, having for his subject The Prevention of Tuberculosis.

Appointments.—Dr. W. W. Richardson has been appointed assistant physician to the insane department of the Philadelphia Hospital. Dr. A. H. Claggett has been appointed medical inspector. Dr. T. H. Nelson has been appointed milk inspector. Dr. John H. Lehmann has been appointed as nuisance inspector. Dr. C. H. Gray has been appointed as out door physician and district surgeon of the ninth and tenth wards.

Scientific Society Meetings in Philadelphia for the Week Ending September 8, 1906.—Monday, September 3rd, Philadelphia Academy of Surgery; Biological and Microscopical Sections, Academy of Natural Sciences; West Philadelphia Medical Association; Northwestern Medical Society. Wednesday, September 5th, Association of Clinical Assistants of Wills Hospital. Thursday, September 6th, Obstetrical Society; Medical Society of the Southern Dispensary. Friday, September 7th, American Philosophical Society.

Philadelphia Health Report.—During the week ending August 18th, the following cases of transmissible diseases were reported to the bureau of health:

	Cases.	Deaths.
Malarial fever	2	0
Typhoid fever	131	15
Scarlet fever	20	0
Chickenpox	3	0
Diphtheria	38	4
Cerebrospinal meningitis	3	1
Measles	18	0
Whooping cough	71	12
Tuberculosis of the lungs	112	57
Pneumonia	23	22
Erysipelas	1	0
Puerperal fever	1	3
Septicæmia	1	0
Tetanus	2	0
Mumps	2	0
Cancer	12	12

The following deaths from transmissible diseases were also reported to the bureau of health: Tuberculosis, other than tuberculosis of the lungs, 9; cholera morbus, 3; diarrhœa and enteritis, under two years of age, 92. The infant mortality was 238; under one year of age, 169; between one and two years of age, 39. The total mortality amounted to 498, corresponding to an annual death rate in a thousand of 17.62, in an estimated population of 1,469,126. There were 42 still births, males 24, and females 18. No unusual meteorological phenomena were observed.

BOSTON AND NEW ENGLAND.

Charitable Bequests.—By the will of Daniel B. Wesson, of Springfield, Mass., $650,000 is given to the Wesson Memorial and Maternity Hospitals, of Springfield. By the will of Patrick F. Sullivan, of Boston, the following Boston institutions receive $5,000 each: Carney Hospital, Free Home for Consumptives, and St. Mary's Infant Asylum, and $2,500 is given to Holy Ghost Hospital for Incurables.

Typhoid Fever Caused by the Pollution of a Public Well.—Typhoid is reported epidemic in the town of Canaan, N. H., whose drinking water supply is furnished by a public well. It is intimated that the well, which is claimed by two factions, between which there is much ill feeling, has been purposely polluted by one of these factions, as a matter of spite. Thirty cases of typhoid, one fatal, have occurred. An analysis of the water has shown that it is badly infected with disease germs. The well has been closed and other sources of supply will be used until the well can be purified.

BALTIMORE AND THE SOUTH

The Jefferson County (Ky.) Medical Society.—At a meeting, held at Louisville, on Monday, August 27th, Dr. Oscar E. Bloch read a paper entitled Anent the City Hospital, and Some Local Anæsthetics and Analgesics in Eye, Ear, Nose, and Throat Practice was the subject of an essay by Dr. S. G. Dabney.

The Southeast District Branch of the Kansas Medical Society will hold a meeting at Pittsburg, Kas., on Tuesday, September 11th. The following programme has been prepared for the occasion: Report of Case of Hysteria, Dr. J. P. Scoles, Galena, Kas.; Ectopic Pregnancy, Dr. R. B. Gibbs, Pittsburg, Kas.; The Treatment of Superficial Cancers, Dr. R. M. Bennett, Mound Valley, Kas.; Prevention of Epilepsy, Dr. M. L. Perry, Superintendent State Hospital for Epileptics, Parsons, Kas.; Cholelithiasis, Dr. G. A. Blasdel, Garnett, Kas.; Surgery, Dr. Jabez N. Jackson, Kansas City, Mo.; Skin Diseases, Dr. William Frick, Kansas City, Mo.; Stones in the Kidney, Dr. A. H. Cordier, Kansas City, Mo. Several clinics have been promised for this meeting.

The Mortality of Baltimore.—According to the weekly report of the Health Department, for the week ending August 18th, eight deaths were caused by typhoid fever. Consumption headed the list, with 21 deaths. The report showed a total of 197 deaths, as compared with 191 the corresponding week last year, 201 in 1904, and 202 in 1903. The annual death rate in 1,000 of population was: Whole, 17.33; white, 15.60; colored, 26.60. The principal causes of death were:

Typhoid fever	8	Diarrhœa (under 2 years of age)	27
Scarlet fever	1	Bright's disease	12
Whooping cough	1	Congenital debility	15
Diphtheria	1	Lack of care	4
Consumption	21	Old age	8
Cancer	9	Suicides	3
Apoplexy	4	Homicides	2
Organic heart diseases	10	Accidents, etc.	18
Bronchitis	2		
Pneumonia	3		

The nativity of the decedents was: United States—White, 112; foreign, 31; colored, 44; unknown, 10. Six deaths occurred at Bayview Asylum, 27 in hospitals, and 9 in other institutions. The following number of cases of infectious diseases were reported, as compared with the corresponding week of last year:

	1905.	1906.		1905.	1906.
Diphtheria	4	14	Mumps	1	..
Scarlet fever	5	6	Whooping cough	6	..
Typhoid fever	66	73	Chickenpox	2	1
Measles	10	5	Consumption	9	12

The Physicians' Defense Company Barred in Kansas.—The superintendent of insurance of Kansas, by advice of the attorney-general, has refused a license to the Physicians' Defense Company, of Fort Wayne, Ind., and has ordered it to discontinue doing business in that State.

CHICAGO AND THE WEST

A Chinaman Licensed to Practise Medicine in Illinois.—Dr. Gin Wai Chan, a graduate of the class of 1906, National Medical University, of Chicago, has been notified by the secretary of the board of health that he has successfully passed the examination for a license to practise medicine in Illinois. Dr. Chan was sent here by the Chinese Government to study medicine, with a view to preparing him for the chair of surgery in the Imperial University at Pekin. It was through the Empress Dowager that the student was sent to Chicago to gain a medical education. It is said that he is the first Chinaman to pass the examining board of Illinois. Although a number of Chinese students have attended other colleges, none of them has successfully passed an examination.

Statement of Mortality in Chicago for the Week Ending August 18, 1906, compared with the preceding week, and with the corresponding week of 1905. Death rates computed on United States Census Bureau's figures of midyear populations—2,049,175 for 1906, and 1,990,750 for 1905:

	Aug. 18, 1906.	Aug. 11, 1906.	Aug. 19, 1905.
Total deaths, all causes	531	603	577
Annual death rate in 1,000	13.52	15.34	15.63
Sexes—			
Males	300	365	356
Females	231	238	221
Ages—			
Under 1 year of age	171	192	169
Between 1 and 5 years of age	52	56	65
Between 5 and 20 years of age	45	43	34
Between 20 and 60 years of age	182	209	220
Over 60 years of age	81	103	89
Important causes of death—			
Apoplexy	4	9	10
Bright's disease	41	48	35
Bronchitis	12	3	5
Consumption	53	63	46
Cancer	24	26	26
Convulsions	8	5	6
Diphtheria	4	6	5
Heart diseases	25	26	33
Intestinal diseases, acute	125	150	145
Measles	1	3	1
Nervous diseases	20	23	33
Pneumonia	27	29	16
Scarlet fever	7	5	0
Suicide	7	7	11
Sunstroke	0	6	2
Typhoid fever	5	6	9
Violence (other than suicide)	41	44	58
Whooping cough	3	3	8
All other causes	124	141	126

One eighth (72) fewer deaths were reported during the week than during the week previous. The principal reductions were in the acute intestinal diseases, 25; consumption, 10; and Bright's disease, 7. On the other hand, there was a sharp increase of bronchitis deaths—ordinarily the precursor of an increase of pneumonia. The decrease in the number of reported cases of the contagious and infectious diseases, noted in last week's *Bulletin*, continues, and the season of highest mortality is fairly over, with no serious increase above the average.

Statement of Mortality in Chicago for the Week Ending August 25, 1906, compared with the preceding week, and with the corresponding week of 1905. Death rates computed on United States Census Bureau's figures of midyear populations—2,049,185 for 1906, 1,990,750 for 1905:

	Aug. 25, 1906.	Aug. 18, 1906.	Aug. 24, 1905.
Total deaths, all causes	589	531	577
Annual death rate in 1,000	14.99	13.52	15.63
Sexes—			
Males	328	300	356
Females	261	231	221
Ages—			
Under 1 year of age	177	171	169
Between 1 and 5 years of age	59	52	65
Between 5 and 20 years of age	47	45	34
Between 20 and 60 years of age	225	182	220
Over 60 years of age	81	81	89
Important causes of death—			
Apoplexy	5	4	10
Bright's disease	31	41	35
Bronchitis	3	12	5
Consumption	58	53	46
Cancer	32	24	26
Convulsions	10	8	6
Diphtheria	5	4	5
Heart diseases	37	25	31

Intestinal diseases, acute	149	125	145
Measles	0	1	1
Nervous diseases	17	20	33
Pneumonia	34	27	16
Scarlet fever	4	7	0
Smallpox	0	0	2
Sunstroke	9	7	11
Typhoid fever	6	5	9
Violence (other than suicide)	28	41	58
Whooping cough	6	3	8
All other causes	141	124	128

GENERAL.

The Association of Military Surgeons of the United States.—The fifteenth annual meeting of this association will be held at Buffalo, on September 11, 12, 13, and 14, 1906. The Surgeon General of the Army has detailed Colonel Valery Havard, assistant surgeon general, and Captain Powell Fauntelroy, assistant surgeon, to represent the medical department of the army at the meeting.

The Marine Hospital Service Examinations.—At the recent examination for appointment in this branch of the Government service, there were twenty-six candidates, only four of whom were successful. These four came from widely separated districts—one from Texas, one from Louisiana, one from Tennessee, and the fourth from Michigan. The examinations are very rigid, and successful candidates must make 80 per cent. in every subject.

The American Roentgen Ray Society held its seventh annual meeting at Niagara Falls, N. Y., on Wednesday, Thursday, and Friday, August 29th 30th, and 31st, under the presidency of Dr. Henry Hulst, Grand Rapids, Mich. The other officers of the society are: Vice-presidents, Dr. Russell H. Boggs, Pittsburgh, Pa.; Dr. Clarence E. Skinner, New Haven, Conn.; Dr. Ennion G. Williams, Richmond, Va.; and Dr. Eugene W. Caldwell, New York; secretary, Dr. George C. Johnston, Pittsburgh, Pa.; treasurer, Dr. Leavitt E. Custer, Dayton, Ohio.

Reciprocity in Medical Licensure.—On August 24th the New York State Department of Education announced that as a result of the conference between the States of New Jersey, Michigan, and Ohio, formal agreements for reciprocity in medical licensure have been entered into between the States of New York and New Jersey, Michigan and Ohio, during the school year just closed. The basis upon which reciprocity obtains between these States is a license earned on examinations in either one of them. The candidate must present credentials from the officials of the State Board of Medical Examiners which licensed him, showing that at the time of such application he is a reputable practitioner. Provision is made for the inspection of the qualifications of an applicant either personally or professionally when there are reasonable doubts of his qualifications. The agreement has been signed by the representatives of the State boards and the education departments and remains in force until rescinded by formal action.

Trachomatous Immigrants Increasing in Number.—According to the New York *Tribune*, for August 23rd, more immigrants afflicted with trachoma are coming to this country just now than have come for several years. The immigration authorities are unable to understand this, as every immigrant before he purchases passage on any steamship line is obliged to undergo a medical examination. According to Frank T. Sargent, Commissioner General of Immigration, ten persons who were afflicted with trachoma have been deported every day during the last two months. Steamship companies, on whose vessels these immigrants are brought to this country, are heavily fined for every case proved against them, the fine being $100 for each case. For sixty days prior to August 4th, the Department of Commerce and Labor assessed in fines on steamship companies $8,100 for bringing into this country diseased aliens. Most of the diseased immigrants were afflicted with trachoma. On August 22nd fines were levied on steamship companies aggregating $1,200.

Some of the Social Features of the Toronto Meeting of the British Medical Association.—The total number registered at the meeting was 2,200. Among the great number of social events arranged for the members and their wives, was a visit to Niagara Falls and the power house, which was enjoyed by a party of 308, guests of Lieutenant Colonel Sir Henry Mill Pellatt, of Toronto. The annual dinner of the association was held at the Victoria Rink, and was attended by 608 persons. The president-elect of the association, Dr. R. A. Reeve, of Toronto, presided. Addresses were made by Sir James Grant, of Ottawa; Dr. Lapicque, of Paris, France; Sir William Hingston, of Montreal; Sir William Broadbent, of London; and Dr. Goldwin Smith, of Toronto, who proposed a toast to The Guests, to which Dr. W. J. Mayo, president of the American Medical Association, responded. The entire week was a most successful one and hospitality was unbounded.

Meetings of National and State Medical Associations During the Month of September. 1906:

NATIONAL.

American Association of Obstetricians and Gynæcologists, annual meeting at Cincinnati, on Thursday, Friday, and Saturday, September 20th, 21st, and 22nd.

American Electrotherapeutic Association, annual meeting at Philadelphia, on Tuesday, Wednesday, and Thursday, September 18th, 19th, and 20th.

Association of Military Surgeons of the United States, annual meeting at Buffalo on Tuesday, Wednesday, Thursday, and Friday, September 11th, 12th, 13th, and 14th.

Medical Society of the Missouri Valley, annual meeting at Council Bluffs, Ia., on Thursday and Friday, September 6th and 7th.

STATE.

Medical Society of the State of Pennsylvania, annual meeting at Bedford Springs, on Tuesday, Wednesday, and Thursday, September 11th, 12th, and 13th.

Washington State Medical Society, annual meeting at Spokane during September, to be announced later.

The American Electrotherapeutic Association will hold its sixteenth annual meeting at the College of Physicians, Philadelphia, on September 18, 19, and 20, 1906. Fellows and others intending to be present are requested to secure certificates of the railroad agent at the point of departure, in order that the cost of transportation may be at the rate of one fare and a third. Headquarters, Hotel Flanders, Fifteenth and Walnut Streets. The preliminary programme is as follows: The Past, Present, and Future of Physical Therapeutics, Dr. W. Benham Snow; Electricity in Joint Affections, Dr. H. Frauenthal; The Therapeutic Value of the Visible Spectrum, Dr. Margaret A. Cleaves; Proposing New Methods in Radiography, Professor Carlo Colombo; Effect of High Frequency Currents Upon Paraffin in the Tissues, Dr. John H. Carpenter; Locomotor Ataxia, Dr. Francis B. Bishop; A *Résumé* of the Radiometric Dosage of Röntgentherapy, Dr. M. K. Kassabian; A Case of Universal Eczema Cured by the High Frequency Current, Dr. Albert M. Cole; Treatment of Lumbago and Other Painful Conditions of the Muscles of the Back, Dr. W. Brockbank; Electricity in the Treatment of Neuralgia, Dr. A. R. Rainear; Electrotherapeutics in Neurasthenia, Dr. W. H. White; On the Use of Radioactive Thorium in Medicine, Dr. R. Wilson; Present Status of Electrotherapy, Dr. H. H. Roberts; High Frequency in the Treatment of Granulated Lids, Dr. C. S. Northen; Electricity as a Factor in the Treatment of Certain Chronic Diseases of the Stomach, Dr. Otto Juettner; Why Use Electricity Therapeutically? Dr. W. S. Watson; Measurement of the Intensity of the Röntgen Ray an Element of Safety and Uniformity in Therapeutic Results, Dr. Sinclair Tousey; Diagnostic Value of the X Ray in Elbow Fractures, Dr. E. Gard Edwards; Concentrated Light Energy, Dr. T. Barrett; Experiments with Light in the Treatment of Various Diseases, Dr. H. Finkelpearl; Rhythm the Dominant Factor in Therapeutics and in the Organic World, Dr. S. S. Wallian; Röntgentherapy in Tuberculous Glands, Dr. G. H. Stover; New Observations on the Value of the Radiant Light Bath, Dr. T. D. Crothers; When Are Electrotherapeutics Indicated, Dr. A. C. Geyser; Methods of Procedure in the Use of High Frequency Currents as Obtained from the Static Machine, Dr. Frederick DeKraft; A New Direct X Ray Meter, Dr. George C. Johnston; Electricity in Ocular Therapeutics, Dr. S. L. Ziegler; Cataphoric Treatment of Cancer of the Face, Dr. Samuel McClary, 3rd; Clinical Demonstration of High Frequency Currents in Ophthalmic Cases, Dr. L. Webster Fox; Clinical Demonstration of the Cataphoric Operation for Cancer, Dr. G. Betton Massey; Exhibition of Cases Under Radiotherapy, Dr. William S. Newcomet.

Pith of Current Literature.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

August 23, 1906.

1. Some Remarks on the Relations of the Gastrointestinal Tract to Nervous and Mental Diseases, By ROBERT COLEMAN KEMP.
2. Gastric Ulcer and Cancer, By CHRISTOPHER GRAHAM.
3. The Advantages of Separate Organizations for Training Schools and Hospitals, By ALFRED WORCESTER.
4. A Case of Primary Erysipelas of the Pharynx, By H. GLOVER LANGWORTHY.

1. Some Remarks on the Relation of the Gastrointestinal Tract to Nervous and Mental Diseases.—Kemp draws the attention to the relation of autoinfection from the gastrointestinal tract to nervous and mental diseases. He gives the history of such cases and a general review which seems to prove his theory.

2. Gastric Ulcer and Cancer.—Graham had before him the reports of eighty-two cases of gastric ulcer and cancer. Basing conclusions on the many histories taken at his clinic, he distinguishes about four stages in gastric ulcer development and expects cancer when it did develop to appear in the third or fourth stage, or often to be the fourth stage. (1) In the first stage of ulcer there is unusually good appetite with nutrition at par or even excessive; pain two to five hours after meals, when the stomach is empty or emptying itself. These patients present themselves to be relieved of pain which they say comes after meals, but which, in reality, is premeal pain. (2) The second stage may be established some months later, following several intermissions with recurrences, each increasing more or less in severity; appetite good, though perhaps not above normal; less satisfaction follows the hearty meal; pain is severe and comes sooner after food. (3) In the third stage desire for food may remain, it may be fair or decreasing, but the patient is afraid to eat because of distress, pain, gas, vomiting, sour eructations, bloating or sour burning stomach; there is but short food relief if any; perhaps obstructive symptoms; loss of flesh usual, and even cachexia may be present. Constipation, marked in all stages, is usually obstinate here. (4) When the undoubted fourth stage (cancerous) is reached the whole picture is intensified. The appetite is poor or absent, or even the smell of food may be repulsive. Meats and fats are especially avoided. Emaciation follows rapidly, often more so than can be accounted for by loss of appetite (toxic or perhaps food delay); strength drops from under the patient, languor is intense and he exerts himself with difficulty; the anæmic cachectic condition develops more and more clearly.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

August 25, 1906.

1. Certain Phases of Recent Work in Pathology and Physiology. Chairman's Address Before the Section in Pathology at the Fifty-seventh Annual Session of the American Medical Association, at Boston, By HENRY A. CHRISTIAN.
2. Two Desirable Reforms, By C. M. JACKSON.
3. Impracticability of State Reciprocity, By EDWIN B. HARVEY.
4. Entrance Requirements, By GEORGE W. WEBSTER.
5. The Treatment of Emaciation, By L. BREISACHER.
6. Mucoid Salts, By WILLIAM J. GIES.
7. Experimental Cerebrospinal Meningitis and Its Serum Treatment, By SIMON FLEXNER.
8. Tumors of the Carotid Gland (*Concluded*), By W. W. KEEN and JOHN FUNKE.
9. Paraffin Plates as an Aid in Operations for Extensive Symblepharon and for the Restoration of Cul de Sacs for Prothesis, By WILLIAM H. WILDER.
10. The Fetich of Disinfection, By C. V. CHAPIN.
11. Studies on Phagocytosis, By D. H. BERGEY.

5. The Treatment of Emaciation.—Breisacher remarks that leanness may be the result of various causes. It may be of an apparently hereditary character, or it may be acquired, and arise as a primary or secondary condition. The one great cause excluding certain emaciating diseases is the ingestion of an insufficient amount of food. This may result from a primary or secondary loss of appetite or a repugnance to food in consequence of various disorders, or as the result of emotions like pain, grief, sorrow, etc. It may be the result of faulty dietetic habit, from ignorance of the nutritive significance of particular foods, from the effect of eating but one or two meals a day by persons not constitutionally fitted for that sort of régime. It may be due to sexual neurasthenia, hysteria, and nervousness. In the treatment of this condition it is advisable to make a thorough examination of the patient, and to find out to what degree the stomach and bowels will bear forced feeding, and what foods these organs will most readily digest and absorb. The author maps out a diet list which will contain from 2,200 to 2,500 calories, and gradually increases the amount until he reaches a diet containing from 3,800 to 4,500 calories. He always resorts to tonics, both vegetable and mineral, pushing them to their physiological limit. The chronically under fed usually require from two to six months of very careful manipulation.

7. Experimental Cerebrospinal Meningitis and Its Serum Treatment.—Flexner states that the bacteriological examination of the exudates from the meninges, obtained by lumbar puncture, and at autopsy, showed the epidemic of cerebrospinal meningitis of 1904 and 1905 to be caused by *Diplococcus intracellularis* of Weichselbaum. He has made experiments on guinea pigs and monkeys. It was shown that the lower monkeys could be infected without great difficulty with the cocci, and made to reproduce the pathological conditions present in man in epidemic cerebrospinal meningitis. He, furthermore, experimented with antisera prepared in rabbits, goats, and large monkeys. The experiments show that the diplococcus is an organism possessing highly interesting and very peculiar biological properties. The author thinks that the special experiments dealing with the prophylactic and therapeutical properties of antisera prepared from this coccus are sufficiently encouraging to be more widely and closely studied. Should further experiments show that subcutaneous or intravenous injection of antisera can modify favorably the experimental disease in monkeys, there would be hope to combat the disease in man.

8. Tumors of the Carotid Gland (*Concluded*).—Keen and Funke report a case of rare tumor of the carotid gland, an inconstant gland, situated at the bifurcation of the common carotid artery, also called intercarotid gland, or retrocarotid corpuscle. There have been so far twenty-nine cases observed, twenty-seven operated in and two found post mortem. Nothing definite can be said about the ætiology. The diagnosis is not easy. Most commonly the tumor is thought to be a lymphoma or adinoma, sometimes tuberculosis of the gland, sarcoma or carcinoma has also been suspected. The authors give twelve positive and six negative facts in diagnosticating this tumor. With the exception of disfigurement, there are seldom any other annoying symptoms. Some of the tumors show but little tendency to malignancy, while others are very marked in this respect. Of twenty-six patients, nineteen recovered and seven died, one patient died without operation. As to surgical interference the writers endorse Reclus and Chevassu's opinion that every operation undertaken for tumor of the carotid body may require resection of the vessels and nerves of the neck. Interference should be undertaken, therefore, only when serious functional troubles or a rapid evolution of an apparently malignant character is present, thus justify-

ing an attempt, the consequence of which may be very grave. Apart from this we believe that the surgeon should not operate.

9. **Paraffin Plates as an Aid in Operations for Extensive Symblepharon, and for the Restoration of Cul de Sacs for Prothesis.**—Wilder says that the advantage of paraffin plate for holding mucous or Thiersch grafts in place in the fornix of the eyelids is obvious. It can do no harm to the cornea, and it can be built up as required to fit any conjunctival *cul de sac* that has to be lined with a Thiersch graft. The graft will adhere to the paraffin, so that it can be evenly smoothed out on it, and thus perfect coaptation is secured between the graft and the raw surface of the cul de sac. To accomplish this, the graft should be thin and large enough to cover all raw surface, no suture being required. With perfect coaptation the graft will have secured a firm hold at the end of forty-eight hours and the plate can be removed for cleansing the eye. In case of restoration of the socket for prothesis, it may be left in place for a considerable time, for the sac can be cleaned by irrigation through the holes in the plate. If it is so large that there is difficulty in removing it, it can be cut in two and the subsequent treatment continued with a plate that can be more easily inserted. The technics is described by the author, who also mentions that the paraffin should be hard, with a melting point not lower than 150° F. The Thiersch graft should be thin and cut from the least hairy part of the arm or leg, and it is to be transferred to the paraffin plate directly from the razor. The plate is thus covered with the graft, the raw side outward is inserted into the new fornix. The author has thus operated upon eight severe cases of symblepharon with good results, two even being total symblepharon.

10. **The Fetich of Disinfection.**—Chapin discusses the disinfection which is commonly carried out by health officials after death or recovery from contagious diseases. This official disinfection costs money and is annoying, and the author doubts its necessity and value. The pathogenic bacteria tend to die rapidly after discharge from the body, and there is therefore very little bacteriological evidence that things remain long infected. Therefore, contact between the noninfected persons and the infected things must be very direct and very close in point of time if the things are to transmit the infection. Besides, clinical evidence of the necessity of disinfection is wanting; the true explanation of the spread of contagion is the great number of unrecognized, atypical and carrier cases. Infected persons and not infected things are to be feared. The author, therefore, is of the opinion that official disinfection, as carried out at present, or as final precautionary measure, has little value in preventing the spread of the common contagious diseases. On the contrary, it is a powerful factor in preventing sanitary progress by encouraging belief in discredited theories. He concludes that, while it is by no means advisable to abandon disinfection entirely, it should not be made so important a part of public health work, and should not be insisted on, unless it is practically certain that no member of the household remains infected, and should be refused when it is probable that any member of the household is so infected.

MEDICAL RECORD.

August 25, 1906.

1. Functional Derangement of the Ears and Upper Air Tract in the Insane, By W. SOHIER BRYANT.
2. The Therapeutical Value of Artificial Localized Hyperæmia in the Treatment of Ambulatory or Dispensary Cases. With a Review of the Published Results and a Report of Personal Observations, By EDWIN BEER.
3. Surgical Diagnosis in Emergency Work, By WILLIS E. HARTSHORN.
4. Pneumothorax, with a Report of Fifteen Cases, By J. N. HALL.
5. Urethral Diverticula and Cul-de-Sacs, By NOAH E. ARONSTAM.
6. A New Management of Occipitoposterior Positions of the Fœtal Head, By M. C. O'BRIEN.

1. **Functional Derangement of the Ears and Upper Air Tract in the Insane.**—Bryant examined one hundred and sixty-one patients at the Manhattan Hospital, most of whom were chosen on account of their hallucinations of hearing. The rest were taken by accident, without any special plan. The psychiatric classification is as follows: Dementia præcox sixty-three, paranoia twenty, dementia paralytica twenty, alcoholic insanity nineteen, mania depressens sixteen, senile dementia fourteen, epileptic insanity six, various three. The ear classification is as follows: Otitis media catarrhalis seventy-one, otitis media purulenta (active or cicatrized) thirty-eight, foreign bodies fourteen, labyrinthine or nerve disease twenty-three. In ten of these the diagnosis was definitely established; in thirteen the diagnosis was not positively differentiated from adhesive processes in the middle ear. Among the one hundred and sixty-one cases there were fifteen with no ear disease; hallucinations of hearing one hundred and thirty-four cases, and only three cases had perfectly normal hearing. Of the one hundred and thirty-four cases with hallucinations of hearing one hundred and twenty had ear disease, sixty-three tinnitus. The improvement of the total of one hundred and sixty-one cases due to otorhinological treatment was only 3.7 per cent., while out of selected cases 62 per cent. showed marked improvement, and the balance some improvement.

2. **The Therapeutical Value of Localized Hyperæmia in the Treatment of Ambulatory or Dispensary Cases.**—Beer describes the various methods of producing artificial localized hyperæmia and the application of these methods in various diseases. There are two kinds of hyperæmia, active or arterial, and passive or congestive or venous. The former Bier produces by the use of heated air, it has been particularly useful in chronic rheumatic joints. The author has used in his one hundred and fifty cases two methods: Hyperæmia induced by suction, and hyperæmia induced by constriction. The author gives eleven illustrations, showing the different cups and appliances used to produce the suction hyperæmia. Ninety patients were treated by this method, eight as prophylaxis against infection, twenty-six had infected wounds and cellulitis of fingers or of hand, thirty-five abscesses, furuncles, and carbuncles, six suffered from acute suppurative adenitis, seven from acute bursitis, and two from contusions (black eye). The author believes that we have gathered sufficient experience in general surgery to demonstrate clearly that Bier's method of producing hyperæmia by suction is essentially practical. Of hyperæmia produced by constriction the writer gives two illustrations, the thin Martin bandage and the rubber tube; it is used in chronic rheumatic joints, in gonorrhœal pains about joints, in tuberculosis of bones and joints. Here, also, the author has had good successes in his patients (six). A full bibliography is added to the article.

3. **Surgical Diagnosis in Emergency Work.**—Hartshorn describes his experience as ambulance surgeon in one of the large New York city hospitals. The number of calls each day ranged from twelve on the average to thirty as a maximum rate, though during the time of extreme heat in summer they ran even higher than this. The chief difficulty in diagnosis seems to lie between alcoholism and the various lesions of the skull, injuries to the trunk and extremities being as a rule quite evident, or accompanied by symptoms of such a character that mistakes in these instances are much less frequent. More cases of alcoholism are seen on ambulance duty than any other one thing. The author describes the character of the most often observed

cases: Concussions; fractures of the skull, of the extremities; alcoholism; epilepsy; apoplexy; opium, and carbolic acid poisoning; uræmia, illuminating gas poisoning; internal injuries; the thoracic, abdominal, and minor lesions.

4. Pneumothorax, with a Report of Fifteen Cases.—Hall reports fifteen cases of pneumothorax and states that of the ordinary signs of pneumothorax, or, more properly speaking, of pyopneumothorax, it was found that splashing had been present in thirteen cases, not tried for in one, absent in one. The author thinks that as the sign is so constant, so easily obtained, and so entirely reliable, it should be more often tried for than it is when percussion draws attention to any peculiarity within the chest not easily explained. The heart was notably displaced in the opposite direction in all but one case, the average displacement being a little over three inches. Notable cyanosis was present in thirteen of the cases. Rapid pulse was a practically constant feature. The temperature was generally elevated, but was doubtless more influenced by the tuberculosis or an associated infection than by the pneumothorax in most cases. Of the fifteen cases the cause was tuberculosis in eleven cases, in two of these in conjunction with attacks of acute pneumonia. In one it followed a bronchopneumonia. One case occurred from the wounding of the lung by the needle used by a house physician in injecting antistreptococcic serum for a supposed sepsis, the real cause of the chill being an acute pneumonia, followed by crisis on the ninth day, and an empyema later—a pyopneumothorax. In two cases the pneumothorax was due to a gunshot wound of the left chest, hæmothorax being also present. Eight of the cases were upon the right and seven on the left side of the chest. Twelve cases were fatal.

BRITISH MEDICAL JOURNAL

August 11, 1906.

1. On the Relations of Medical Men to Their Patients, By R. Maclaren.
2. The Present Position of Prostatic Surgery, By J. H. Nicoll.
3. A Series of Cases in Which Collections of Stones Formed in the Prostatic Urethra, By C. A. Morton.
4. On the Vesical Sphincter and the Mechanism of the Closure of the Bladder, By C. Leedham-Green.
5. The Modern Mastoid Operation, By A. Bronner.
6. The Microscopic Changes in the Nervous System in a Case of Chronic Doutine, or "Ural de Coit," and a Comparison with Those Found in Sleeping Sickness, By F. W. Mott.
7. Case of Obscure Intracranial Tumor: Meningeal Sarcoma with Extension to Fourth Ventricle, By G. H. G. Davie.

2. Prostatectomy.—Nicoll states that successful prostatectomy comprises three prime factors: 1. Procedure by enucleation (digital or otherwise). This removes the prostate, leaving the capsule *in situ*. On its successful accomplishment depend the patient's chances of recovery. 2. Efficient removal of the obstructing prostatic mass. This commonly, but not necessarily, means total, or nearly total, removal of the organ. 3. The existence, after recovery, of a mucous urethra in the prostatic region, an urethra preserved intact during the operation or renewed by natural processes during the course of healing. Prostatectomy may be performed by one of three methods: the vesical (suprapubic), the perineal, and the submucous combined (vesical and perineal). The perineal method the writer never uses. The first step should be the opening of the bladder by the suprapubic route, in order to exclude carcinoma, abscess, or encysted calculus of the prostate, and to permit of a complete bimanual examination of the prostate. The urethra and mucous floor of the bladder can never be preserved if the vesical operation is performed, and only occasionally by the perineal method. Such preservation can be uniformly attained only by the combined or submucous method. A metal urethral sound is passed, the patient placed in the lithotomy position, and the prostatic capsule is exposed by a perineal incision and opened on its posteroinferior aspect. The prostate is then enucleated from its capsule, the mucous floor of the bladder being defined and protected by the fingers of the hand in the bladder, and the urethra by its contained metal sound. The perineal wound and empty prostatic capsule are lightly packed with gauze. The suprapubic wound is sutured around a drainage tube. The most suitable perineal incision is the lithotomy inverted Y. The capsule is opened either by a median vertical incision or by a crucial incision. Since, however, many chronic catheter prostatics are immune against infection from putrid urine, and since the destroyed urethra is rapidly reproduced, in some instances the vesical method with its one incision gives just as good results as the submucous or combined method.

4. The Sphincter of the Bladder.—Leedham-Green states that there are reasons for believing that the sphincter of the bladder (the internal prostatic sphincter) plays a most important part in the closure of the bladder. Under ordinary circumstances it is by this muscle that the bladder is closed, whether distended or not. There is evidence that when the internal sphincter does yield, it does so, not because it is overcome by the mechanical pressure of the urine in the bladder, but because its muscular fibres relax as a vital act in response to a nerve impulse preliminary to the evacuation of the urine. The normal act of micturition would appear to be as follows: As the bladder becomes distended with urine the vesical nerves are stimulated and evoke stronger and stronger contractions of the detrusor muscles, giving rise to the desire for micturition. To withstand the increased pressure of the urine the tone of the internal unstriped muscular sphincter is increased and, if necessary, even the accessory voluntary urethral muscles are called into play. When a favorable opportunity for micturition occurs the internal sphincter is voluntarily relaxed, together with the rest of the unstriped muscular tissue of the posterior urethra, and the urine is expelled by contraction of the detrusors. The objection which has been raised to an unstriped muscle, like the internal sphincter, being under the influence of the will, is fairly met by a reference to the accommodation muscle of the eye, which, whilst unstriped, is completely under the control of the will.

5. The Mastoid Operation.—Bronner states that there are three varieties of the mastoid operation: (1) Opening of a mastoid abscess and removal of any diseased bone. (2) Opening of the mastoid process and of the mastoid antrum—Schwarze's operation. (3) The radical operation by which the middle ear, attic, mastoid cells, and antrum are reduced to one smooth walled cavity—Stacke-Schwarze operation. The writer in this paper considers only the radical operation. It should be done in all cases of recurrent or chronic mastoiditis with external swelling, recurrence of granulation masses in the attic or antrum, recurrence of pain and fever, fistula over the mastoid, etc. The author calls especial attention to the following points: 1. Operations on the mastoid process are often very difficult. 2. Every case is different and there is no typical mastoid. 3. The chisel should be used as little as possible, and the bone forceps and gouge as much as possible. 4. In all cases it is absolutely necessary to open up the attic, remove the posterior wall of the meatus, and carefully explore and open up all the mastoid cells. 5. It is of great importance to prevent stricture of the cutaneous auditory meatus, and to make a flap or flaps from its posterior wall. 6. Skin grafting should be used when much bone has been removed. 7. Hydrogen peroxide should be used for arresting hæmorrhage and for cleansing the cavity in the after treatment. 8. The

prolonged use of iodoform in the after treatment is dangerous; in its place isoform, xeroform, and aluminium acetate gauze should be employed.

August 18, 1906.

1. Pulmonary Œdema. By F. J. WETHERED.
2. Remarks on Acute Nephritis (Morbus Brightii), with Special Reference to Treatment, By A. G. GULLAN.
3. Presidential Address on Food and Food Preservatives: Their Influence on the Increased Prevalence of Certain Diseases, By R. JONES.
4. The Direct Examination of Œsophagus and Upper Air Passages, By D. R. PATERSON.
5. Human and Bovine Tuberculosis; The Danger of Infected Milk, By N. RAW.
6. A Case of Sudden Death Possibly Due to Vagus Inhibition. By E. D. TELFORD.
7. The Bactericidal Action of Compounds of Silver. (A Report to the Therapeutical Committee of the British Medical Association), By C. R. MARSHALL and E. F. NEAVE
8. The Relation Between a Cutaneous Nævus and a Segmental Nerve Area, By G. L. CHEATLE.

1. **Pulmonary Œdema.**—Wethered divides cases of pulmonary œdema into acute, subacute, and chronic or persistent. Acute œdema of the lungs may be an outcome of most of the more severe forms of both acute and passive congestion of the lungs; it is especially prominent in death by asphyxia brought about by pneumonia and acute bronchitis. As a rule, it follows the laws of gravitation and the physical signs are to be sought for at the bases of the lungs. In acute bronchitis, however, it tends to be localized in the middle and upper parts of the lungs. Its occurrence is facilitated by a hydræmic condition of the blood, and it is often the cause of death in acute nephritis. It may also be caused by sudden mechanical obstruction to the bloodvessels of the lung, thrombosis or embolism, and it may follow the administration of an anæsthetic—more often ether than chloroform. The most constant symptoms are dyspnœa, straining cough, and increasing cyanosis. The only certain diagnostic phenomenon is a copious, thin, watery expectoration. Orthopnœa generally exists. Acute œdema is always of grave significance. The most valuable remedies consist in cardiac stimulants—strychnine, digitalis, and strophanthus. Oxygen is of service, and dry cupping may be tried. Subacute œdema is often one sided; it is likely to occur in patients suffering from emphysema, myocardial degeneration, or uncompensated valvular disease. Treatment consists in giving digitalis and strychnine. Signs suggestive of unilateral subacute œdema are sometimes met with in the later stages of influenza. Subacute œdema sometimes occurs after the withdrawal of a pleuritic effusion, or is due to the existence of pleuritic adhesions. Chronic or persistent œdema occurs in old people with a weak heart or emphysematous lungs, in anæmic conditions, etc.

2. **Acute Nephritis.**—Gullan's paper on acute nephritis may be summed up as follows: It is a complaint of the temperate zones, and is more common in the male sex. No age is exempt, but it is rare during the first year of life, and after the fortieth year. Among important predisposing causes are mental and nervous exhaustion, heredity, and alcoholism. Its onset is very varied; it may begin with a chill, with œdema, or with the presence of blood in the urine. The amount of urine excreted is at first far below normal; it contains blood, renal débris, and urates, the reaction is acid, and the amount of urea and other solids diminished. Albumin and casts are almost always present. The œdema is most characteristic; it is almost always to be found over the sacrum, where it forms the sacral pad. Marked anæmia always accompanies the œdema, and it is either due to a loss of secretion from the damaged kidneys which is necessary for the anabolism of the blood, or to harmful products retained in the blood which should be excreted by the kidneys and which destroy the corpuscles. The duration is very varied; the younger the patient the more rapid the course to recovery or death. Death usually results from some inflammatory condition of the lungs or pleura, or from uræmia. Recurrences and relapses are much more common than is usually supposed. The indications for treatment are: (1) To secure a rest for the inflamed organ, and to thereby diminish the risk of an increase of the inflammation; this is met by a rigid milk diet. (2) To counteract the dangers which result from interference with the excretory action of the kidneys; hydragogue purgatives and diaphoretics (especially sodium benzoate) are very beneficial. Digitalis should never be used. (3) To relieve the hyperæmia of the kidneys by counterirritation over the loins; mustard poultices, and dry and wet cups are the means usually employed. Morphine and opium are contraindicated in all cases.

3. **Food Preservatives.**—Jones discusses the influence of food preservatives on the occurrence of disease, and calls attention to the increased prevalence of cancer, gastric ulcer, enteritis, typhoid fever, rickets, acute nephritis, etc. He submits the following recommendations: 1. The use of formaldehyde to be prohibited. 2. No more than one grain to the pint or one grain to the pound of salicylic acid to be allowed, and its presence to be declared. 3. All preservatives and coloring matter in milk to be strictly prohibited. 4. Boric acid or borax—not over 0.25 per cent.—to be the only preservative of cream, presence to be declared. 5. Boric acid or borax (not over five per cent.) to be the only preservative used with butter and margarine. 6. No chemical preservatives to be used in invalids or children's food. 7. The use of copper salts to be prohibited. 8. Proper government supervision.

5. **Tuberculosis.**—Raw again asserts his belief that while human and bovine tubercle bacilli are different types of parasites, yet bovine bacilli are freely communicable to humans and are the cause of a large amount of tuberculosis in children. Human bacilli when swallowed cause intestinal ulceration, but do not (as a rule) affect the glandular system.

7. **Silver as a Bactericide.**—Marshall and Neave have studied the bactericidal action of silver compounds, and find they fall into three groups: 1. Powerfully bactericidal (silver nitrate, silver fluoride, actol, itrol, argentamine, argentol, albragin, argonin, ichthargan, largin, novargan, and protargol). 2. Much less powerfully bactericidal (nargol). 3. No bactericidal action whatever (argyrol and collargol). The amount of silver which a compound may contain is no criterion of its bactericidal power.

LANCET

August 11, 1906.

1. The Hands of Surgeons and Assistants in Operations, By A. E. J. BARKER.
2. Internal Secretion and the Ductless Glands, By S. VINCENT.
3. The Cure of Chronic Suppuration of the Middle Ear Without Removal of the Drum or Ossicles, or the Loss of Hearing, with Ten Cases. By C. J. HEATH.
4. On a Form of Amblyopia in Young Children, Consequent Upon Inherited Syphilis. By S. STEPHENSON.
5. The Auriculoventricular Bundle of the Human Heart, By A. KEITH and M. W. FLACK.
6. A Successful Case of Splenectomy for Rupture of the Spleen; with Remarks on the Diagnosis and Treatment of this Accident. By G. S. SIMPSON.
7. Some Unusual Forms of Anæmia in Childhood, with Remarks on Lymphatic Leucæmia (Lymphæmia), By T. R. C. WHIPHAM and A. N. LEATHEM.
8. A Contribution to the Plastic Surgery of the Renal Pelvis, By J. W. T. WALKER.

1. **Surgical Asepsis.**—Barker states that the air of most operating rooms is not a great danger to open wounds, providing that the rooms be not too crowded.

and rapid currents of air be avoided. The instruments employed in operations can be rendered sterile by boiling in soda solution, the aprons, dressings, bandages, etc., by exposure to saturated steam. For ligatures and sutures the author has for years used linen thread exclusively, but it is possible to restrict the use of ligatures almost to zero by the employment of hæmostatic forceps. The most important question is the sterilization of the skin, both of the patient and of the surgeon. To cleanse the skin of the patient the writer relies on repeated hot baths of the whole body; in addition he covers the whole of the patient's body just before operation with a sterilized sheet through which a hole is cut only large enough to permit of the operation being done through it. The cleansing of the surgeon's hands is the weakest point in modern asepsis. No method is perfect; probably the best is washing with very hot running water, pure soap, and brush, followed by pure spirit, and repeating such washing many times during the operation. The writer, though one of the first to use rubber gloves, distrusts them, except to keep the hands clean for operation. They make the hands perspire, such perspiration containing numerous microorganisms. He prefers to take all possible precautions to prevent the hands coming in contact with fresh cut surfaces. Sterilizable instruments can almost always be used instead of the fingers, and all cut surfaces should be at once covered with sterile gauze by means of which the tissues can be handled if necessary. Only one assistant should take active part in the operation. Before the operation the surgeon and the assistant should wash their mouths carefully with an antiseptic. Should they have catarrhal colds, carious teeth, etc., the mouth and nose should be covered with a fourfold sterile gauze bandage tied behind the head.

6. **Splenectomy.**—Simpson reports a case of rupture of the spleen in a man aged twenty-seven years, due to a fall. On opening the abdomen, which contained blood, a large transverse tear of the lower pole of the spleen was found. Forceps applied to the pedicle at once stopped the bleeding; the pedicle was ligated and the spleen excised, the patient making a good recovery. The commonest cause of rupture of the spleen is a sharp blow or kick on the abdomen or side; next is a crush or squeeze. Spontaneous rupture, due to sudden movement or strain, occurs in cases of large, soft, malarial spleens. The signs of internal hæmorrhage are present. Shock is present in the majority of cases, either at once or within a few hours. Pallor, thirst, restlessness, and retention of urine are also usually present. Abdominal pain and tenderness are very constant, being usually most marked in the region of the spleen. Rigidity of the abdominal wall, limited in some cases to the upper half of the left rectus, is a most valuable sign when present. It is succeeded in from six to twenty-four hours by distention of the abdomen. From the point of view of treatment, the cases can be divided into four groups: 1. The patient dies at once or within a few minutes of the accident. 2. The opposite extreme; the symptoms are greatly delayed; this can be accounted for by the temporary arrest of the bleeding by clotting or by the hæmorrhage being at first subcapsular and later bursting through the capsule. 3. The initial shock of the accident, when present, is recovered from, and symptoms of hæmorrhage only show themselves after a period of from one to twenty-four hours. 4. Cases where the symptoms of rupture of the spleen have been present and have gradually passed off without operation. All these cases require operative measures, even though the first class are practically hopeless. A vertical incision through the rectus is probably the best to start with. Excision of the spleen will usually have to be performed. Suture is unsatisfactory, as the splenic tissue is very friable, it can be employed only in the tears limited to the capsule. Gauze packing and tampons are untrustworthy, and are likely to cause extensive adhesions which may lead to subsequent obstruction. Of seventy cases of rupture of the spleen recorded in the literature, forty-two patients were operated upon; of these, twenty-seven lived and fifteen died, a mortality of thirty-six per cent. All of those patients not operated on died. The causes of failure after operation are peritonitis; complications such as rupture of other solid or hollow abdominal viscera, especially the left kidney; injuries of the left pleura, as hæmothorax; other injuries, such as fracture of the base of the skull; and operation performed too late. The majority of patients show no abnormal sequelæ except a transient anæmia and leucocytosis, and an enlargement of the left axillary and inguinal lymph glands.

7. **Lymphatic Leucæmia.**—Whipham and Leathem conclude that lymphatic leucæmia presents itself in many different forms. They classify the varieties as follows: I. Chronic: All cases show (1) General glandular enlargement; (2) excessive leucocytosis; (a) predominating cell, the small lymphocyte (common type); (b) predominating cell, the large lymphocyte (rare type). II. Acute: (1) Glands (a) generally enlarged (common type); (b) not affected (rare type). (2) Leucocytosis extreme (common type); (a) predominating cell, the large lymphocyte (common); (b) predominating cell, the small lymphocyte (rare). (3) Leucocytosis moderate (rare type) with large lymphocyte as the predominating cell.

August 18, 1906.

1. The Treatment of Cancer of the Stomach, By A. W. M. Robson.
2. The Public Supply of Pure or Specially Prepared Milk for the Feeding of Infants, By G. F. McCleary.
3. Infantile Mortality and the Employment of Married Women in Factory Labor Before and After Confinement, By G. Reid.
4. The Increase of the Power of Local Authorities with Regard to Milk Supply, By A. K. Chalmers.
5. The Sterilization of Tuberculosis Sputum and Articles Infected by the Tubercle Bacillus, By T. Kirkland and M. S. Paterson.
6. Observations on the Life History of Leucocytes, By C. E. Walker.
7. Acute Lobar Pneumonia in a Pigmy, By W. H. Gregory.
8. Internal Secretion and the Ductless Glands (*Lecture II*), By S. Vincent.
9. Frictional Electricity: A Factor in Caisson Disease, By G. W. F. Macnaughton.
10. Observations on the Action of Strontium Salts on the Coagulability of the Blood, By J. B. Nias.
11. A Note on the Structure of Spirochæta Duttoni, By J. W. W. Stephens.

1. **Cancer of the Stomach.**—Robson advances evidence to prove the following: (1) That it is most desirable to make an early diagnosis of cancer of the stomach in order that a radical operation may be performed at the earliest possible moment. 2. That it may be needful to perform an exploratory operation in order to complete or confirm the diagnosis. 3. That such an exploration may be done with little or no risk in the early stages of the disease. 4. That even where the disease is more advanced and a tumor perceptible, an exploratory operation is, as a rule, still advisable in order to carry out radical or palliative treatment. 5. That where the disease is too extensive for any radical operation to be done, the palliative operation of gastroenterostomy, which can be done with very small risk, may considerably prolong life and make the remainder of it much more comfortable and happy. 6. That some cases, thought at the time to be cancer, too extensive for removal, may after gastroenterostomy clear up completely and get quite well. 7. That in cases of disease of the cardiac end of the stomach too extensive for removal, the operation of gastrostomy may consider-

ably prolong life and prove of great comfort to the patient by preventing death from starvation. 8. That even where the disease is too extensive either for removal or for a gastroenterostomy being performed with a fair chance of success, the operation of jejunostomy may prove of service to the patient. 9. That where a radical operation can be performed the thorough removal of the disease may bring about as much relief to the patient as does the operation for the removal of cancer in the breast, uterus, and other organs of the body, and that in some cases a complete cure may follow. Medical treatment cannot cure, and can do very little even to prolong life; it therefore applies only to cases too advanced for surgical treatment or where operation is declined. Since ulcer of the stomach is very probably a predisposing cause of cancer, we should in all cases in which an ulcer of the stomach resists treatment or its scar narrows the pylorus recommend an early gastroenterostomy or excision of the ulcer in order to prevent the development of carcinoma.

2. **Public Milk Supply for Infants.**—McCleary states that the infantile mortality dependent upon defective infant feeding is, broadly speaking, a mortality of hand fed infants. In France breast feeding is encouraged in order to prevent this mortality; in England attention is mainly devoted to the improvement of artificial feeding, by means of the public supply of pure or specially prepared milk. But such milk should never be supplied in such a way as to run the risk of discouraging breast feeding. All the infants should be under periodical medical supervision. Such public milk depôts should be, (1) an important educational influence, a school of infant feeding; (2) the source of a pure milk supply; and (3) an object lesson in the production of pure milk.

3. **Mortality of Infants of Working Married Women.**—Reid calls attention to the fact that the infantile mortality is higher than normal in those communities where women form a considerable proportion of the working population. Thus in the northern towns of Staffordshire where women work in every 1,000 births there were fifteen abnormalities and 9.4 still births; in the southern towns, where few women work, only six abnormalities and 3.2 still births occurred among each 1,000 births. At present the English law forbids mothers working for one month after their confinement. This should be made three months, in order that they may be induced to nurse their children. How to prevent mothers from working before their confinement is a much more difficult matter.

9. **Caisson Disease.**—Macnaughton holds that frictional electricity is a most potent factor in the production of the symptoms of caisson disease or "the bends." The caisson atmosphere is charged with electricity, carried by the droplets of water vapor, and the electric potential in a moderately sized caisson may be compared in amount with that in a flash of lightning. The electricity is generated by the friction against the walls of the moist air which is sucked in and simultaneously compressed. The work in this atmosphere accumulates upon the body surface electricity which either by directly permeating the tissues reaches the nerve centres, or by acting upon the peripheral nerve filaments or muscle end plates stimulates the centres. The nerve cells in consequence are thrown into a state of excessive activity, manifesting itself by discharges of a purposeless motor and sensory nature—the "bends."

10. **Coagulability of the Blood.**—Nias has studied the effect of strontium salts upon the coagulability of the blood, and thinks he has clearly established that the lactates of both strontium and magnesium in doses of from one to two grammes are serviceable substitutes for the salts of calcium when the latter are not absorbed from the alimentary canal.

LYON MEDICAL.

July 29, 1906.

Pathogeny of Spontaneous Ankylosis, Particularly of the Vertebræ. By ANTONIN PONCET and RENÉ LERICHE.

Pathogeny of Spontaneous Ankylosis.—Poncet and Leriche say that spontaneous ankylosis is caused by a pseudorheumatism produced by a toxic infection, such as blennorrhagia or tuberculosis.

LA PRESSE MEDICALE.

July 28, 1906.

Treatment of Chronic Otitis by Tubotympanic Vaporization with Steam from Hot Soda Sulphur Water, By E. ESCAT.

Treatment of Chronic Otitis with Soda Sulphur Water Vaporization.—Escat gives from the results obtained at the soda sulphur springs in the Pyrenees the following indications and contraindications to the tubotympanic use of the steam from these waters. Indications: 1, Persistent subacute tubal catarrh; 2, chronic tubal catarrh, secondary to hypertrophic rhinitis; 3, chronic exudative inflammation of the tympanum characterized by congestion and tumefaction of the mucous membrane of the drum and of the Eustachian tube, infiltration of the ligaments of the ossicles and relaxation of the tympanic membrane; 4, adhesive otitis media with immobilization of the ossicles and ankylosis of the stapes without involvement of the labyrinth, provided that the patient has suffered from true subacute or chronic rheumatism; 5, atrophic otitis media accompanying ozæna, without involvement of the labyrinth. Contraindications: 1, Nonspecific otorrhœa, because the stimulation produced by the vapor may induce the appearance of acute complications; 2, tuberculous otitis for the same reasons; 3, nonspecific cicatricial otorrhœa; 4, acute purulent otitis which has recently healed and left behind it a certain degree of lowered hearing; 5, primary otosclerosis; 6, otoarteriosclerosis; 7, primary labyrinthine troubles, and deafness from a central lesion.

August 1, 1906.

1. Senility. The Senile Brain, By A. LETIENNE.
2. Note on the Composition of Ice and the Congelation of Water, By PAUL SACERDOTE.

1. The Senile Brain.—Letienne describes the insidious onset of loss of the mental qualities of memory, attention, and intelligence, together with other associated modifications of the cerebral faculties in the old. These changes seem to depend on the altered conditions of circulation in the brain.

LA SEMAINE MEDICALE.

August 1, 1906.

The Renal Origin of Permanent Arterial Hypertension, By L. AMBARD.

Arterial Hypertension.—Ambard discusses the theory advanced by Vaquez, in 1904, in which hypertension is ascribed to a hyperplasia of the suprarenal capsules, and is of the opinion that either active or latent nephritis is present in all cases in which there is a persistent arterial hypertenson.

BERLINER KLINISCHE WOCHENSCHRIFT.

August 6, 1906.

1. Bilateral Resection of the Upper Jaw, By O. HILDEBRAND.
2. A New Case of Advanced Extrauterine Pregnancy with a Living Child, By TH. LANDAU.
3. More with Regard to Myeloid Degeneration, By H. HIRSCHFELD.
4. A Case of Sinus in the Left Parotid Region, By ZONDEK.
5. The Theoretical and Practical Signification of Head's Zones in Disease of the Digestive Organs, By L. KAST.
6. Injections and Implantations of Paraffin in Plastic Surgery of the Nose and Face (*Concluded*), By H. ECKSTEIN.
7. Enuresis Ureterica, By C. POSNER.

1. **Bilateral Resection of the Upper Jaw.**—Hildebrand reports two cases in which he has resected the upper jaw from both sides of the face in the removal of carcinoma. Both patients recovered from the operation. The necessity for the removal of both superior maxillæ occurs but rarely, and only about thirty cases are on record.

2. **Advanced Extrauterine Pregnancy.**—Landau reports a case of extrauterine pregnancy in a woman, thirty-nine years old, who had previously borne four children. When the diagnosis was made the heart beat of the fœtus could be heard. Laparotomy was immediately performed, and the patient recovered. The pathological condition found is described very minutely.

3. **Myeloid Degeneration.** — Hirschfeld describes three cases of leucæmia in which myeloid metaplasia of the spleen and lymphatic glands was found on autopsy.

6. **Injections and Implantations of Paraffin.**—Eckstein recommends implantations of plates of paraffin which has a melting point of seventy-five, rather than its introduction by means of injections for the repair of cosmetic defects about the nose and face, in order to avoid the possibility of injury to the eye by embolism or otherwise.

MUENCHENER MEDICINISCHE WOCHENSCHRIFT.

August 7, 1906.

1. Teleangiectatic Granuloma, By H. BENNECKE.
2. The Effect of Protylin on the Excretion of Phosphorus in Man, By R. O. NEUMANN.
3. Acute Dilatation of the Stomach and the So Called Arteriomesenteric Occlusion of the Intestine, By NECK.
4. The Treatment of Acute Arthritis by Intravenous Injections of Collargol, By GEORG RIEBOLD.
5. The Treatment of Hysterical Contractures of the Lower Extremities by Lumbar Anæsthesia, By HERMANN LÖHRER.
6. Cardiac Neuroses and Basedow's Disease, By M. FISCHER.
7. A Case of Basedow's Disease Without Exophthalmos Treated by Möbius' Antithyreoidin, By ARONHEIM.
8. Treatment of Basedow's Disease with the Antithyreoidinserum of Möbius, By J. M. A. GEVERS LEUVEN.
9. Subcutaneous Tumors of the Fingers, By DURLACHER.
10. Four Cases of Epithelial Cysts, By LEOPOLD KLEIN.
11. The Behavior of the Typhus Bacilli Demonstrable in the Blood of Patients Sick with Typhus Fever Against the Bactericide Action of the Blood, By A. LEMIERRE.
12. A Simple and Practical Apparatus for the Production of Bier's Stasis, By O. MUCK.
13. Treatment of the Pedicle in Gynæcological Operations, By L. VON STUBENRAUCH.
14. Prevention of Contagious Diseases, By ALFRED RIEDEL.

1. **Teleangiectatic Granuloma.**—Bennecke claims that the teleangiectatic granulomata belong with neither the malignant nor the benign tumors, but are rather granulation growths of hitherto unknown ætiology, which are to be distinguished from the other ordinary granulation growths by their peculiar histological structure with the presence of numerous dilated capillaries, and by their clinical peculiarities. They have nothing in common with botryomycosis, a well known specific disease of the horse.

2. **Protylin and Excretion of Phosphorus.**—Neumann says that in the experiments in which a part of the nutritive albumin and phosphorus was replaced by an aliquot part of protylin, the organism maintained nearly or quite its proportion of nitrogen and phosphorus. In other experiments in which large quantities of protylin were given, up to the full amount of nutriment needed, a nitrogenous deposit took place, together with retention of phosphorus. Hence the conclusion is drawn that the phosphorus and the albumin of protylin is resorbed and assimilated by the organism.

3. **Acute Dilatation of the Stomach.**—Neck reports four cases of acute dilatation of the stomach, of which three required surgical intervention. The causes which produce this trouble are various.

4. **Acute Arthritis.**—Riebold reports fifteen cases of acute arthritis in which he obtained favorable results by the intravenous injection of collargol. He also states that he has failed to obtain any real benefit in twenty cases of gonorrhœal, subacute rheumatic, or septic affections of the joints.

5. **Hysterical Contractures.**—Löhrer reports a case in which hysterical contractures of the lower extremities in a woman, twenty-three years old, were cured by lumbar anæsthesia produced by the injection of 0.05 gramme stovaine.

9. **Subcutaneous Tumors of the Fingers.**—Durlacher reports the removal of a tumor 5.7 cm. long, 4.3 cm. wide, and 3 cm. thick from the inner surface of the forefinger. It proved to be a cyst divided into two portions by a partition of connective tissue.

LA RIFORMA MEDICA.

July 28, 1906.

1. Hodgkin's Disease and Tuberculosis of the Lymphnodes (*To be continued*), By ORESTE CIGNOZZI.
2. Contribution to the Study of Tumors of the Fourth Ventricle, By CARLO BESTA.
3. Transplantation of Tendons in the Treatment of Strabismus, By GINO MONZARDO.

2. **Tumors of the Fourth Ventricle.**—Besta's two cases show how variable and obscure are the symptoms of tumors developing within the fourth ventricle. Cases reported in literature prove that the size of the growth has nothing to do with the severity of the symptoms. At times the tumor is a surprise at autopsy. The majority of cases reported did not present any characteristic clinical features, and the diagnosis during life could not positively be made. In the first of the two cases reported there were periodical attacks of loss of consciousness, but the symptoms of cerebral growths, such as vertigo, vomiting, headache, and disturbances of the cranial nerves were conspicuously absent. There were instead, mental disturbances (excitement, periodical confusion, loss of memory), and locomotor disturbances (ataxic gait, etc.). This symptom complex is observed in cases of multiple cerebral thrombosis. Such was the diagnosis during the life of this special patient. The considerable resistance of the bulb to pressure was evidenced in this case by the fact that while the tumor must have taken years to reach its condition at autopsy, the patient's symptoms dated but three months back. In the second case, there were echinococcus cysts formed between the ventricle and the cerebellum. The patient was a man, aged sixty-four years, and presented the picture of paralytic dementia, including rigidity of the pupils towards light, ataxic gait, etc. The diagnosis was tabetic paralysis.

3. **Transplantation of Tendons for Strabismus.**—Monzardo believes that normal force can be restored to the paralytic muscle in strabismus by transplanting it into or uniting it to one of the neighboring normal muscles. He experimented on animals and on cadavers to prove the feasibility of this procedure. If a convergent strabismus is present, for example, the internal rectus must distribute some of its power to the weaker external muscle. This may be secured by transplanting a part of the stronger muscle into the superior rectus, and the latter upon the paralyzed muscle; or else by transplanting a part of the superior rectus upon one half of the inferior, and the remaining half upon the external rectus. The technics of suturing these tendons will be given in a subsequent article.

ROUSSKY VRATCH

July 1, 1906.

1. The Epidemic of Plague in the Kirghiz Steppe in 1905-1906, By N. M. BERESTNIEFF.

2. The Surgical Treatment of Cancer of the Stomach and Intestines, By B. K. FINKELSTEIN.
3. The Treatment of Consumption with Tuberculin, By I. GABRILOVITCH.
4. A Case of Multiple Pregnancy with Quintuplets, By S. T. PÉKHOFF and N. N. AKIMOVA.
5. Homicide or Suicide. An Experimental Study of a Criminal Case (*To be continued*), By N. A. MOSKALEFF.

2. **Removal of Cancer of the Stomach and the Intestines.**—Finkelstein reports two cases, one of cancer of the ascending colon, the other of the pylorus in which radical removal of the growth was followed by complete recovery. In both cases the tumor had been growing rather slowly, and there had been no metastases. No adhesions had formed, and both patients had been in a comparatively good condition.

3. **Treatment of Tuberculosis.**—Gabrilovitch reports a series of twenty cases of pulmonary tuberculosis treated at his sanatorium in Finland with Koch's tuberculin in 1904 and 1905. If the remedy is injected properly, with all necessary precautions, its use does not present any dangers. Tuberculin injections can be used both in patients without fever as well as in those with a slight rise of temperature. The amount of cough and the quantity of sputum are not contraindications to the use of tuberculin. If no bacilli are found in the sputum, the occurrence of a febrile reaction always means the presence of tuberculosis in the organism. Tuberculin may be used not only when the apex alone is involved, but also in cases with more extensive lesions. The presence of cavities is not a contraindication to its use. The number of injections depends not only on the stage of the disease, but on the condition of the patient, his weight, and the reaction produced. The initial doses should be small; not less than $^1/_{100}$ milligramme, and not over $^1/_{10}$ milligramme. The duration of the treatment may vary from two to six months. In seventy per cent. of the patients the cough was greatly diminished by this treatment. In three per cent. it was entirely abolished. In sixty per cent. of the cases the tubercle bacillus disappeared from the sputum of patients thus treated. In seventy-five per cent. the catarrhal conditions in the lungs disappeared, in the remaining twenty-five per cent. they were markedly diminished. Tuberculin greatly improved the general condition of the patient, who gained in weight steadily under its influence. Other forms of treatment in the sanatorium, without tuberculin did not give as good results in such a short space of time. The tuberculin referred to here was Koch's "old" tuberculin.

AMERICAN JOURNAL OF OBSTETRICS.

August, 1906.

1. The Processes of Reproduction, By F. R. OASTLER.
2. The Causes of Sterility, By G. G. WARD.
3. Sterility and Its Surgical Treatment, By D. BISSELL.
4. The Functions of the Uterosacral and Round Ligaments, By J. W. BOVÉE.
5. A Case of Meningocele of Unusual Size, By G. M. BOYD
6. Adenocarcinoma of the Abdominal Wall Developing Subsequent to the Removal of Benign Ovarian Neoplasms, By E. A. SCHUMANN.
7. The Life and Work of Dr. J. Marion Sims, By W. D. WARD.
8. Symphysiotomy, with a Report of Five Operations, and a Brief Consideration of Its Advantages and Disadvantages, By L. M. ALLEN.
9. A Review of Fourteen Cæsarean Sections Successfully Performed By G. M. BOYD.
10. Surgical Treatment of Puerperal Infection, By R. W. STEWART.
11. Typhoid Fever Occurring During Pregnancy, By C. FOULKROD.
12. Significance of Uterine Hæmorrhages of the Menopause, By G. P. MURRAY.

2. **The Causes of Sterility.**—Ward reaches the following conclusions: 1. As conception is dependent upon healthy spermatozoa, normal ova, the union of the same, and the proper implantation of the fertilized egg, so sterility is most frequently dependent upon acquired lesions and congenital defects which cause sterility by interfering with these essentials. 2. Many cases of acquired sterility are due to lesions which cause such changes in tubes and ovaries as to prevent the union of spermatozoa and ova. 3. Gonorrhœa is the most frequent cause of such lesions. 4. Acquired sterility in many cases is due to endometritis which causes such changes in the endometrium as to prevent the proper implantation of the impregnated ovum. 5. Sterility associated with flexions, displacements, subinvolution, fibroids, and other neoplasms is caused by the accompanying chronic endometritis which prevents proper implantation. 6. A cause of unhealthy endometrium and of tubal disease which may prevent union of the male and female elements as the chronic inflammation and congestion of the uterus and annexa incident to subinvolution or sepsis. 7. Gonorrhœa not only causes sterility in women in seventy per cent. of cases, but is also the cause of sterility in the male. 8. In two thirds of all cases of sterility in women from gonorrhœa, the woman has been infected by the man.

3. **Sterility and Its Surgical Treatment.**—Bissell considers that sterility is due to defective performance of function in the generative organs of the male or female, so that the germinal elements do not meet or are not effectively influenced, or fail to develop. Defects or obstructions in the vagina often obstruct coitus, but if the vaginal and cervical canal are at all patent conception is by no means impossible. It is best to remove the obstructions in the interests of conception. An infantile uterus, associated with sterility, may sometimes be so stimulated by the use of a proper intrauterine stem as to become susceptible of pregnancy. Involvement of the ovaries with appendicitis is an occasional cause of sterility and the treatment recommended is removal of the appendix through a medium incision, curettage of the uterus, and such treatment of the appendages as the conditions demand. Displacement of the uterus, apparently causing sterility, must be treated surgically as the conditions indicate.

6. **Adenocarcinoma of the Abdominal Wall.**—Schumann narrates a series of eight cases of this condition which he terms a peculiar, highly specialized glandular tumor developing in the abdominal parietus after ovariotomy for glandular cystoma. There was no evidence of malignancy in any of the cases. The growth did not follow the ordinary principle of secondary tumor development, and it is concluded that some more complex genesis underlies such formations. The author accepts Polano's conclusion that this type of tumor has its origin in the direct implantation of benign cells, which after a varying period of latency develop in their new seat malignant changes with rapid proliferation.

8. **Symphysiotomy, Advantages and Disadvantages.**—Allen states that in certain cases in which Cæsarean section is contraindicated symphysiotomy may be the means of saving the life of the child. Such a case would occur in a funnel shaped pelvis when the head had been forced into and fixed in the brim, but could not be forced through. Cæsarean section in such a case would usually give a dead child, but symphysiotomy might save both mother and child. This operation might also be performed in an impacted mentoposterior variety of face presentation, where flexion of the head or podalic version was impossible. Greater skill is required to perform Cæsarean section than to perform symphysiotomy. One who is not thoroughly trained in aseptic technics would usually obtain better results from pubic than from abdominal section, infection, if it occurs being as a rule less extensive with the former than with the latter.

9. A Review of Fourteen Cæsarean Sections.—Boyd gives the results of his experience in these cases. There was deformity of the pelvis in all but one. With one patient it was her third successful Cæsarean section, with another it was her second. The indication was relative in most of the cases. The guides to the solution of the problem were, first, the history of a previous labor; second, a test of labor. It is believed by many that Cæsarean section is too frequently performed. The results have been so successful that the question arises whether it would or would not be better to treat cases of pelvic deformity by inducing premature labor. There are many advocates of either plan. The author's experience with induced premature labor has not been very satisfactory. He argues that it is often impossible to determine the exact age of the fœtus, and that the methods of bringing on labor are often unsatisfactory. Again labor often ends spontaneously in cases in which a severe operation was anticipated and prepared for. As a formula for difficult labors he thinks the forceps will suffice in the majority of cases. Should this fail version or pubiotomy may be performed, Cæsarean section being reserved for the exceptional cases.

THE PRACTITIONER.

August, 1906.

1. Post Partum Hæmorrhage, By E. S. Bishop.
2. Seven Cases of Hernia Treated by the Implantation of a Prepared Filigree of Silver Wire By L. McGavin.
3. Intestinal Obstruction in Children. A Clinical Study, By A. Edmunds.
4. Chorea Gravidarum. By H. French and H. T. Hicks.
5. The Surgical Aspects of Colitis. By P. L. Mummery.
6. Syncytioma Malignum. An Instructive Case By J. T. Hewetson.
7. Two Cases of Bronchial Fistula. By W. Downie.
8. A Review of Recent Work in Abdominal Surgery, By B. G. A. Moynihan and H. Upcott.
9. The Causation of Infantile Convulsions, By H. H. Scott.

1. Post Partum Hæmorrhage.—Bishop divides this subject into any number of varieties, with the attendant mental confusion which it causes to the student and inexperienced practitioner who endeavors to differentiate one from the other, when confronted with the appalling accident itself. He considers equally futile, misleading, and unnecessary the fourteen different causes for this accident, which are given in the textbooks. Furthermore, he smiles at the remedial measures advised as (1) those which produce uterine contraction; (2) those which cause thrombosis in the vessels. He reverses the common rule by affirming that we must not look to contraction of the uterus to stop the hæmorrhage, but to the cessation of the hæmorrhage in order to permit contraction of the uterus. The use of hot water, iron per chloride, etc., he considers ridiculous and illogical. As there is both venous and arterial bleeding the quickest and most effective means must be used to check both. The former will be obtained by raising the foot of the bed to the height of an ordinary chair, the latter by compressing the aorta not too vigorously and not too persistently at one spot, using the ulnar aspect of the closed fist for the purpose. The pressure should be continued from one to three hours, and, in the meantime, all necessary repairs and intrauterine manipulations may be made.

2. Seven Cases of Hernia Treated by Filigree.—McGavin advises that the filigree should be half as long again as the hernial opening. He implants it between the rectus muscle and the posterior layer of its sheath. He allows six loops to the inch in filigree for umbilical and ventral hernia, and eight to the inch for inguinal. The removal of an entire filigree will rarely be necessary, even if there be suppuration. Only that portion which lies loosely under a sinus need be removed. The use of the filigree saves much time, which is especially important in cases of obesity and chronic bronchitis. Recurrence, after this method has been used, is possible only when the loops have been placed at too wide an interval, or when the filigree has not been made wide enough as a whole. Success depends upon perfect asepsis, a perfectly dry wound, the avoidance of too stiff a wire in the filigree, the use of Michel's clips in place of skin sutures, the use of trustworthy catgut or of removable deep sutures, the avoidance of drainage, unless it is absolutely necessary.

4. Chorea Gravidarum.—French and Hicks agree with writers who regard this as chiefly an affection of young primiparæ, but they also found that it tended to recur in successive pregnancies and at the same month. The mortality in their cases was about 10 per cent., which is much lower than that reported by Barnes and by Buist. Pyrexia is a matter of great significance in the prognosis of this disease, and a temperature above 100° F. is to be regarded as forecasting a grave result, unless the fever were due to tonsillitis or some other acute febrile condition. The severity of the choreic movements is of far less significance. The treatment is the same as would usually be indicated in a nonpregnant case of chorea. If labor is to be induced it should be before the onset of pyrexia. One cannot judge by the choreic movements alone, whether the termination of a case will be favorable or unfavorable. Induction of labor may not have any effect upon the chorea, and the author believes it should seldom be practised.

5. Surgical Aspects of Colitis.—Mummery draws the following conclusions: 1. Colitis is a symptom rather than a disease. Careful examination with the sigmoidoscope, if possible, should be made, and the cause determined before treatment is adopted. 2. If the colitis is due to disease of the appendix, kidney, gallbladder, etc., the cause should be removed by operation. 3. If it is secondary to malignant disease in the bowel, an early diagnosis is of the utmost importance, and an early operation offers the only chance of cure. 4. If it is due to a local lesion, like tubercle or actinomycosis, it must be treated locally; by operation if necessary, as by colotomy or enteroanastomosis. 5. Von Noorden's dietary with irrigation of the colon if necessary, is the treatment for true mucous colitis. 6. In obstinate cases, especially in ulcerative colitis, a temporary cæcotomy, or colotomy, or enteroanastomosis seems the only method of cure, but should follow palliative treatment.

6. Syncytioma Malignum.—Hewetson summarizes his observations in connection with a case illustrating this rare condition, as follows: 1. Metrorrhagia following abortion or labor should call for more prompt investigation, especially in women under thirty. 2. Dilatation and curetting, under such circumstances, is an operation of considerable responsibility, in view of the possibility of malignant disease. 3. Sharp curettes are contraindicated in the parturient uterus, and in the presence of septic infection. 4. All such curettings should be submitted to an expert pathologist for microscopical examination. 5. Continued metrorrhagia after such treatment should be regarded as of serious import, and should call for fresh investigation and prompt radical measures.

9. Causation of Infantile Convulsions.—Scott concludes that as predisposing causes may be mentioned age, heredity, and rickets, as direct causes (1) cerebral irritation either from disease traumatism, or shock; (2) reflex disturbances, such as dentition, gastrointestinal disorders, worms, peripheral nerve irritation, such as ear ache or spasm of the glottis; (3) less common forms, such as at the onset of acute specific fevers, congenital heart disease, and poisoning from a variety of causes; (4) the fits may be epileptic, or the result of a fright or profound emotion. In most cases more than

one of these causes is at work, some underlying condition being present, which renders an attack of convulsions posssible on very slight provocation.

EDINBURGH MEDICAL JOURNAL.

August, 1906.

1. The Formation and Action of Salicyluric Acid in the Human Body, By R. STOCKMAN.
2. Observations on Perforated Gastric and Duodenal Ulcer Based on a Personal Experience of Forty-six Operations, By A. MILES.
3. The Mental Disorders of Pregnancy and the Puerperal Period, By N. RAW.
4. Some of the Physiological Changes in the Maternal Organism During Pregnancy and Their Significance, By H. O. NICHOLSON.
5. Is There a Decidua Reflexa? By J. OLIVER.
6. Pentosuria, Chronic and Alimentary, By R. W. JOHNSTONE.
7. The Use of the Double Wedge Splint in Treatment of Fractures of the Humerus, By G. WILKINSON.
8. Two Cases of Acute Suppuration in the Maxillary Antrum Cured by Washing Through the Nasal Cavity, By A. L. TURNER.

1. The Formation and Action of Salicyluric Acid in the Human Body.—Stockman refers to this product of salicylic acid which appears in the urine being a combination within the body of salicylic acid with glycocoll. This substance, together with unchanged salicylic acid, are the product of the latter substance when taken by mouth. The quantity of salicyluric acid is usually in excess of the recovered salicylic acid, but tests vary greatly under different conditions. As to the effect of salicyluric acid on rheumatism, the author gave fifteen grains, combined with sodium bicarbonate, every four hours, in an acute case, until three hundred grains were taken. There was no appreciable effect, but when sodium salicylate in similar doses was given the symptoms rapidly disappeared. The necessity of giving large and frequent doses of the last mentioned substance in acute rheumatism is due not only to its rapid excretion from the body, but also to its rapid conversion into the inert salicyluric acid.

3. The Mental Disorders of Pregnancy and the Puerperal Period.—Raw finds albuminuria an almost constant symptom of puerperal insanity, and quotes Sir James Simpson, who had a similar experience, but observed that the albuminuria would often disappear within fifty hours of the appearance of insanity. The special toxic cause of this disorder is absolutely unknown. Mania was twice as frequent as melancholia in the author's experience, and recovery of quicker occurrence in the former. Insanity of pregnancy usually develops between the fourth and seventh months, with insomnia and destructive tendencies, and usually continues three or four weeks. Many women are on the verge of insanity during the greater portion of pregnancy. Clouston is quoted as favoring artificial abortion if insanity occurs before the fourth month of pregnancy, but the author in an extensive hospital experience has never found it necessary. He does not favor the removal of patients with this disorder to an insane asylum, if it is possible to care for them at home or in a hospital.

4. Physiological Changes in the Maternal Organism During Pregnancy.—Nicholson remarks that the strain of pregnancy is too much for normal functionation in many women. The personal factor, the individual idiosyncrasy is of supreme importance in every case. Some of the physiological changes during pregnancy are the following: 1. The vascular area is increased, notably in the uterus. 2. The quantity of blood is increased. 3. The blood contains more water, more white corpuscles, more fibrin and extractive matters, less of red corpuscles, hæmoglobin, and albumin. 4. The systemic and pulmonary veins are overfilled. 5. The heart is enlarged, sometimes hypertrophied, usually has dilatation of the cavities on the right side. 6. The kidneys are enlarged and the urine altered as to its composition. 7. The thyreoid gland, liver, and spléen are larger and heavier. Metabolism is increased, and if faulty results in toxæmia. In pregnancy, in general, there is always a serious derangement in the relationship between the internal secretion of the thyreoid gland and that of the suprarenals.

6. Pentosuria, Chronic and Alimentary.—Johnstone regards this condition as of great importance in connection with life insurance examinations. Pentose is a monosaccharid, its anhydride pentosane being found in cherries, apples, pears, plums, corn, and other vegetables. Pentose may be recognized by Tollens's test and by the orcin hydrochloric acid test. Pentosuria may easily be mistaken for diabetes, and yields to the fermentation test for grape sugar. If this test is negative and Tollens's or the orcin test positive, pentosuria is present. Either in its chronic or its alimentary variety it must be differentiated in making a life insurance examination from diabetes or even glycosuria. A person with pentosuria may be perfectly sound and a safe life insurance risk. In a series of cases this condition was produced experimentally by drinking from half a litre to three litres of apple juice. Its duration was from a few hours to several days, all traces then disappearing.

Letters to the Editors.

EXTORTIONATE CHARGES.

GREENWOOD, MASS., *August* 14, 1906.

To the Editors: In re your editorial Extortionate Charges, in your issue of the 11th inst., in addition to the excellent reasons you give for large fees for service to rich persons, it occurs to me that the value of the sick man's time ought to enter as a factor in regulating fees. The time of the head of a great corporation being so much more valuable than that of an ordinary artificer or laborer, the fee for service to such a one should be much greater, since he is the sooner restored to his business. The earning capacity of the individual should be considered.

D. S. HUMPHREYS.

IS A VENEREAL BASTARD BETTER THAN NO BABY AT ALL?

12 MT. MORRIS PARK WEST,
NEW YORK, *August* 16, 1906.

To the Editors: I have just read the editorial Venereal Superstitions in the August 11th issue of the *New York Medical Journal.* When I read the last paragraph but one, my eyes opened very, very wide. At first I could not believe what my eyes read, but there it was in black, cold type. Does the writer responsible for that editorial really mean to maintain that "a baby infected with venereal disease, even if it is a bastard into the bargain, is better than no baby at all?" Or, was it merely a *lapsus calami,* induced perhaps by the excessively hot weather we had last week? One cannot believe that such a statement could be made in all seriousness. Let alone the deterioration of the race, physical and moral, which would result from a great number of venereal bastards, the great mortality among the latter in or out of institutions—they do not receive the best of care—makes their bringing into the world a useless and unprofitable procedure.

WILLIAM J. ROBINSON.

* * * We made our statement deliberately, and we stand by it, but our correspondent's expression "a great number of venereal bastards" by no means represents what we said or implied. The reader may learn from almost any encyclopædia that many of the world's great men and women have been of illegitimate birth. As to

inherited syphilis, it soon "runs out." Our faith is in Nature's fight for "the recovery of lost perfection."

NAPOLEON'S ALLEGED EPILEPSY.

CASTELLA, SHASTA COUNTY, CAL.,
August 14, 1906.

To the Editors: Your editorial on The Neurotic Napoleon has served to recall a passage in Talleyrand which I submit to you herewith. The modesty of a layman forbids my attempting a diagnosis of the symptoms therein detailed, but surely no one can question the competency of Talleyrand in his capacity as an observer. Accordingly I offer you his testimony on this interesting question:

I (Talleyrand) received instructions to accompany him (Napoleon) to Strasbourg, there to be ready to follow his headquarters, according to circumstances (September, 1805). A fit which happened to the emperor at the beginning of this campaign frightened me very much. The very day of his departure from Strasbourg, I had dinner with him; on leaving the table he went to see the Empress Josephine. He had only been with her a few minutes when suddenly he came out of her apartment; I was in the drawing room, he took me by the arm and led me into his room. M. de Rémusat, the first chamberlain, who came for instructions, entered at the same time. We were hardly there, when the emperor fell on the floor; he had barely time to tell me to close the door. I tore away his cravat, because it seemed to choke him; he did not vomit, he groaned and foamed at the mouth. M. de Rémusat gave him some water, and I bathed him with Cologne water. He had a kind of convulsions that ceased after a quarter of an hour; we placed him on an arm chair; he commenced to speak, dressed himself again, and enjoined secrecy on us; half an hour later he was on his way to Carlsruhe.

Of course, it must be assumed the French writers on this subject have not allowed themselves to remain ignorant of this evidence. Have they chosen to ignore it? A. MILLER.

* * * It is generally conceded that Talleyrand was a competent observer, and we are willing to concede that his reputation for veracity was much better than that of "Truthful Baker."

Proceedings of Societies.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of April 11, 1906.

The President, Dr. CHARLES K. MILLS, in the chair.

A New Instrument—"A Modification of Benoist's Penetrometer."—Dr. GEORGE E. PFAHLER described Benoist's penetrometer as a two metal scale used in estimating and recording the penetrating power of the Röntgen rays, or, in other words, to determine the quality of rays used, instead of using the indefinite and meaningless terms "soft," "medium," and "hard." It consisted primarily of a layer of pure silver of definite thickness, which was compared with layers of aluminum varying from 1 to 12 mm. in thickness. The rays were passed through this scale and the scale was read by the shadows cast upon a fluorescent screen. There were two serious objections to the use of this scale in this simple form. First, it exposed the operator to the rays each time he made an examination. Second, it was necessary to stop the tube and turn it toward the operator to examine the quality of the rays. This did not give a true reading of the quality of rays used when operating.

To overcome these objections, Dr. Pfahler arranged the scale at the end of a telescopic tube with the fluorescent screen under the scale, and the shadows were reflected to the eye by means of a mirror set an angle of forty-five degrees. This allowed the radiologist to study the tube while in operation upon the patient, and to stand behind protection while making the examination, and at once gave a most valuable measuring instrument for use in x ray work.

A First Aid Dressing Adopted by the Police Department of Philadelphia.—Dr. WILLIAM M. ANGNEY said there seemed to be a need in the equipment of the patrol wagons of Philadelphia of some first aid dressing which would be so simple that men comparatively uninstructed in medical work could apply it. The requirements of a first aid dressing in a great city were practically the same as upon the battlefield. As a result of considerable study, especially of the writings of Senn, Dr. Angney had adopted a bandage for use in patrol wagons which contained two compresses of gauze with absorbent cotton. There were a few layers of loose gauze on top of the compresses, which could be used by the physician, and a four yard bandage. The advantage of the two compresses was that, if the wound was a long one, they could be separated and one used alongside of the other; or, if there should be a bullet wound, one compress could be placed on the aperture of entrance and the other on that of exit. There was sufficient bandage to go around the trunk or to be applied several times around the thigh. If the arm was injured, some of the bandage could be used for a sling. For the prevention of infection, Dr. Angney had adopted a powder, consisting of boric and salicylic acids, four parts to one. This powder was also suggested by Professor Senn.

Address of the Retiring President.—Dr. JAMES M. ANDERS, in his address, referred to the growth of the society in membership and in the character of the scientific work, and to the more conspicuous occurrences of the year, especially to the provision made by the society for a standing committee on legislation and its useful functions in connection with similar committees in the other counties of the State. He favored, in the establishment of the branch societies, the appointment of a special committee with authority to apportion the various sections of the city. He believed it the duty of the members of the American Medical Association and all its constituent units to assist in the present movement to organize the entire profession of the country. Attention was directed to the fact that in New York and Chicago the legislative and administrative power of the medical society was vested in an executive committee or council and in certain committees amenable to that body, and strongly recommended the adoption of this course in the interest of prompt transaction of business. In the scientific business he would recall, at least in part, the set papers and discussions and substitute clinical cases, pathological specimens with reports, the use of the reflectorscope and stereopticon, and the results of original investigations. The giving of valuable and interesting lectures and demonstrations, making use of material in the Museum of the College of Physicians and those of medical schools and hospitals, was suggested. He favored the granting of annual prizes for research work in hygiene, bacteriology, pathology, and clinical medicine. Collective investigations could also be carried on through special commissions, provided with a paid secretary. He referred to the great need of opportunity for members to learn from personal observation and study of methods and patients. The average practitioner, unless he was connected with hospital service, needed to be brought into contact with unusual and interesting clinical material.

In the matter of the enlargement of the county society, Dr. Anders felt that one of the problems which should be dealt with in the immediate future was that in reference to including in the body all good, upright, ethical men, regardless of the school from which they were graduated. He thought that the words of a former president, Dr. John B. Roberts, urging the adoption by the Philadelphia County Medical Society of the policy of accepting as members all educated physicians, were more in accord with professional sentiment at present than when they were uttered, in 1902. He referred to the fact that in Chicago the only requirements for admission to the County Medical Society were that a man should have been graduated from a college recognized as reputable and should have a license from the State Board of Health, after subscribing to the statement: "I hereby agree not to practise

or support sectarian medicine." On the other hand, no graduate in medicine who persisted in calling himself a homœopath was admitted, nor any one who held a teaching position in a sectarian college.

Lastly, he expressed the view that the Philadelphia County Medical Society should be a truly representative body, commanding the respect and services of the best elements of the profession. The usefulness of the society, he believed, could be extended by the more frequent association of the general practitioner and the specialist.

The Treatment of Gastroptosis.—Dr. ALBERT PHILIP FRANCINE stated at the outset of this paper that very few chronic ailments offered a better opportunity for the relief of symptoms than gastroptosis. He defined gastroptosis as a symptom complex consisting in downward displacement and dilatation of the pyloric end of the stomach, downward displacement of the transverse colon and hepatic flexure, and movable right kidney, associated with local gastric and general neurasthenic symptoms. Sometimes, too, the liver was movable or displaced slightly downward, the spleen rarely; and very often in multiparous women there was marked diastasis of the recti muscles. Uterine displacements were also common.

Indications given for treatment were: 1. To increase the motor power of the stomach, and relieve the stagnation and consequent fermentation of the gastric contents. 2. To furnish support to the abdominal viscera and hold them, so far as might be, in their normal position, thus relieving local congestion and symptoms of weight and dragging. 3. To tone up the general health and mental attitude of the patient.

In those cases where there was retention of the gastric contents he considered lavage indispensable in relieving the stomach of the fermenting residue, while even in those cases where lack of motor power could not be demonstrated, it seemed to do good. Much emphasis was placed upon the importance of proper mastication of food. By this Dr. Francine meant thorough disintegration and insalivation of food.

Of equal importance with lavage and mastication was mechanical support. The belt was not in his opinion applied with the idea of completely replacing the stomach to its normal position, but of supporting it. From numerous examinations of patients who had worn belts for some time and been completely relieved of symptoms, he was convinced that the stomach never completely returned to its normal position. The abdominal muscles should be strengthened and their nutrition improved by suitable exercises and massage, and made to fulfil so far as possible their normal function.

Medicinal measures were outlined and a few prescriptions submitted which he had found of service. General hygienic rules were laid down. A short review was given of the operative treatment. It would seem to him that Beyea's operation, supplemented by Webster's operation when the latter was indicated, was physiologically and surgically the most rational. He would hesitate, however, before recommending such radical measures in cases which so frequently yielded to hygienic, dietetic, and medicinal measures. That there was a small class that could be relieved only by operation he regarded as pretty well established.

The Surgical Treatment of Gastroptosis.—Dr. HENRY D. BEYEA gave a short review of the surgical treatment of gastroptosis. The operation of gastropexy, descriptively designated as the surgical elevation of the stomach by plication of the gastrohepatic and gastrophrenic ligaments, was devised and first performed by Dr. Beyea in April, 1898. The principle of this operation was that by placing three rows of interrupted silk sutures from above downward, and from right to left through the gastrohepatic and gastrophrenic ligaments, through the peritoneal tissues of the gastrohepatic omentum, a single broad transverse fold, or plication, was formed in the ligaments, thus shortening the normal ligamentary supports and elevating the stomach to its normal position. The normal anatomical relations of the organ were restored, the cause of the kink at the pylorus and of gastric dilatation was corrected, and therefore the conditions favorable to restoration of normal physiological function were gained. In fourteen patients operated upon by Dr. Beyea's method, there had been remarkable improvement in health and complete relief of symptoms, with the exception of one. In this one case there was improvement and gain in weight, until from the stress of nursing two typhoid patients the symptoms returned. Dr. Beyea regarded the operation as indicated for every patient with gastroptosis not made comfortable and able to assume routine duties by a thorough application of medicinal treatment. He did not, of course, believe that the operation would relieve a case where neurasthenia was the first and prominent cause of illness and the gastroptosis of secondary importance, or that it would cure a case where the symptoms were due to a condition of general visceral ptosis, splnachnoptosis. The mortality of the operation he estimated as not greater than one fourth of one per cent.

Dr. J. DUTTON STEELE said that the great difficulty in formulating a rational plan of treatment of gastroptosis was the fact that gastroptosis was not the only factor. He thought the condition was associated with many symptoms which could not be treated surgically. Many cases occurred without symptoms, and many patients recovered entirely and remained cured without change in the position of the stomach. In his experience those that were cured and yet had stomachs displaced downward were those who had general nervous instability. The stomach symptoms were a part of the general neurasthenia. Such patients might be helped by Dr. Beyea's method, but would not be entirely cured. If good results did follow, he believes they were due to the six weeks' rest in the hospital. He agreed with Dr. Francine that lavage was of much benefit.

Dr. HENRY D. JUMP emphasized the fact already referred to that gastroptosis was a complication of a neurasthenic condition and was not the cause of the neurasthenia. He had found that the support of the stomach by properly applied bandages had been of advantage, and in the poor classes of people the straight front corset had been of considerable help. The abdominal walls, which were usually relaxed, should be supported. It was in these particular cases that the rest cure did a certain amount of good. Properly regulated abdominal exercise he also considered of advantage.

Dr. BEYEA said, in reply to Dr. Steele, that his patients had been kept but three weeks in bed. All those he had operated upon had been under the care of medical men previously. The surgical treatment in gastroptosis had given him very satisfactory results.

Meeting of April 25, 1906.

The President, Dr. CHARLES K. MILLS, in the chair.

HOUSING CONDITIONS IN PHILADELPHIA.

Lantern Slide Exhibition of the Sanitary Aspect of Some Philadelphia Districts.—Miss EMILY G. DINWIDDIE, of the Octavia Hill Association, gave this exhibition, showing the sanitary evils observed in the houses investigated by the association. The most common of these were the keeping of animals, surface drainage, offensive privy wells, inadequacy of water supply, and overcrowding.

Housing Conditions in Relation to Public Health.—Dr. A. C. ABBOTT, president of the board of health, said that the problem confronting the board under the conditions represented in the lecture resolved itself into two considerations: filth and overcrowding. There

was to be found destitution with all its concomitants. An astonishing fact was the absence of an excessive death or morbidity rate. So far as the board of health was concerned, he felt that the overcrowding was perhaps the most important of all the factors, for contagious disease had abundant chance of spreading. The tearing down of the old structures, for which indeed high rentals were paid, and the substitution of clean, comfortable ones, he believed would go far toward having the people maintain decent places of residence. The morbidity and mortality of children under one year, which was large, he attributed to the lack of conditions for keeping foods usually fed to children during the first year of life. He suggested as a most worthy charity the providing of means to establish scrubbing corps in connection with the health department or which could be under the direction of some one of the charitable organizations of the city. He believed there was need for hospitals conveniently located for the accommodation of children taken sick in these places. In these wretched homes the child was not considered sick until it could not stand up. Practically in all the cases of diphtheria coming to the board of health from these quarters the patients were almost moribund when attention was called to them. In so far as the board of health was concerned, Dr. Abbot felt that what was wanted was a corps of cleaners, visiting nurses, and conveniently located hospitals to which the sick could be taken at the very earliest moment of the recognition of disease.

Errors of Drainage in Relation to Health.—Dr. Seneca Egbert said that his attention had been directed mainly, in seeing the exhibition of tenements, to the filth exposed in the surface drainage. He referred to the fact that the modern treatment of tuberculosis depended not only upon the coldness of the air, but its purity. Until the sanitary conditions of such places were corrected, he thought it needless to criticise the people for not keeping clean. Could the owners of the properties be brought to wipe out of existence such conditions and substitute modern sanitary drainage and plumbing, he thought such action would be highly educational to the people, to say nothing of the improvement of health.

Legal and Legislative Aspects.—E. Spencer Miller, Esq., of the Philadelphia Bar, said that the defects in housing conditions which the earlier papers had made prominent were especially those of lack of subsurface drainage and insufficient appliances for water supply. So far as the question of house drainage was concerned, he said that the board of health was empowered to establish rules. The act of 1885 expressly empowered it to do so, and that act had been declared constitutional. As a matter of more general interest, it was mentioned that this law, which was passed for Philadelphia only, as the city of the first class, was extended ten years later to apply to all cities and boroughs in Pennsylvania. Consequently, throughout the State the boards of health could require alterations in house draining and could establish rules and enforce them against defective methods of construction and materials.

The matter of requiring a sufficient number of appliances for supplying water was much less easily accomplished. He referred to the fact that the Octavia Hill Association now had before city councils an ordinance requiring that there should be at least one appliance for water supply for every single house, except court houses, which might have one appliance for every three houses, provided it is in close proximity to the three houses. If, as suggested by Dr. Abbott, scrubbing was important for reasons of health, the occupants of small rented houses should have near at hand sufficient water supply appliances. While there might be a legal doubt whether city councils had the power to demand of a property owner and householder that he should bring water close at hand and provide for the exclusive use of a household a spigot or other outlet, the power to exercise such authority in ordinary cases could hardly be questioned. Most of the small houses concerning which the question arose were rented out, a row of eight or a dozen being often owned by a single person. Such a group of apartments was in reality a horizontal tenement, but there would seem to be no reason why the municipal authorities should not regulate these rows of houses as much as the ordinary tenement houses. The Octavia Hill Association, he said, bespoke the interest of the public in their effort to thus improve the condition of those who live under neglected circumstances.

Dr. W. M. L. Coplin, director of public health, believed the conditions shown to exist in the section of the city represented were dependent upon the individuals inhabiting the area rather than upon the conditions of water supply or the city health organization. Work with this class of people he regarded as particularly difficult because of their total indifference to the value of property, they not scrupling to destroy carpenter work and plumbing. The question he thought was largely one of education, in which direction he felt that the Octavia Hill Association was doing much good. There should be likewise, in his opinion, the education of the public regarding the large expense necessary for the maintenance of health organizations, and influence should be brought to bear upon the bodies appropriating money for the proper execution of work along these lines. The health department must be backed by the people.

Mr. J. G. Rosengarten said he was much surprised to hear that the board of health had not the power to say to the owner of an unsanitary house that he should make it sanitary. He thought it should certainly be possible for the board of health to close up such a house until it was made sanitary. If it was not possible, legislation was needed. He thought also that the public had the right to go to councils and ask for appropriations sufficiently large to enforce sanitation in the region of the city depicted by the lantern slides.

Dr. A. C. Abbott said that the act referred to by Mr. Miller placed the management of tenement houses in the bureau of building inspection and department of public safety, and that it was not a matter with which the board of health had anything to do other than if a nuisance existed the board of health could so declare, and, if it had the money, it could abate it. For some years, however, the money appropriated to the board of health annually had been exhausted before the year was ended.

Mr. Miller said that anything accurately described by the term "nuisance" could be abated by the board of health, if it had the money. Some authority, however, with greater range than that of the board of health should require the establishment of underground drainage.

Dr. Frances C. Van Gasken spoke from a personal knowledge of the localities illustrated, and expressed her belief that the sanitary authorities should furnish inspectors who should compel the residents to keep these sections clean. That this could be done was proved by the work of the Octavia Hill Association. She did not think, however, that councils should be begged for the money necessary, but that the public had a right to demand sufficient appropriation to cover this urgent need.

Dr. Rachel S. Skidelsky favored the doing away with old and uninhabitable tenements and the building of modern sanitary houses. She believed that the people of these districts could be taught to live properly were they given suitable homes.

Dr. Solomon Solis Cohen believed that most of the

difficulty arose from overcrowding. He thought it idle to talk of education when the fundamental fault was the matter of overcrowding. If it was necessary, there should be legislation to prevent the building of houses not provided with sufficient air space; that would provide for cleanliness of the houses and prevent the crowding of thirty or forty people in residences only large enough for less than quarter that number.

Dr. H. EMERSON WETHERILL, who had spent the winter in Panama, said that upon his return to Philadelphia he had been struck with the cleanliness of the city compared with that of Panama.

Book Notices.

Moustiques et fièvre jaune. Par A. CHANTEMESSE, professeur d'hygiène à la Faculté de médecine de Paris, et F. BOREL, directeur de la 2e circonscription sanitaire maritime. Paris: J. B. Baillière et fils, 1906. Pp. 96. (Price, 1 fr. 50.)

This work has for its purpose the exposition of the sanitary regulations that should be adopted, in accordance with recently established scientific facts, to exclude from Europe yellow fever and the stegomyia mosquito. The modern theories regarding the propagation of yellow fever, the history of that disease in Europe, the progress of naval hygiene with reference also to yellow fever that appears on shipboard during a voyage, and the prophylactic measures that must be taken to prevent the maritime transport of yellow fever by ships are described briefly. The book gives a satisfactory presentation of the essential facts concerning the dissemination of yellow fever by the mosquito.

The Diseases of the Nose and Its Accessory Sinuses. By H. LAMBERT LACK, M. D. (Lond.), F. R. C. S., Surgeon to the Throat Department of the London Hospital, etc. London: Longmans, Green, & Co., 1906.

The author has revised and amplified the essay for which he received the Jacksonian prize in 1899, and has added the chapters necessary for a complete presentment of his subject. A textbook should be concise, full, and clear, authoritative without pedantry, and so arranged that the subject matter is brought to the mind and eye of the reader with the least possible loss of time and energy. These requirements are met by Lack's work, while in addition there are manifested a breadth of view and a grasp of modern special literature which add greatly to its value. The special chapters on the Symptoms and Effects of Nasal Obstruction, on Constitutional Manifestations of Nasal Disease, Headache, and Neuralgia, and on the Nasal Neuroses are particularly instructive. The anatomical illustrations are excellent. Some of the clinical pictures, on the other hand, are reproduced in wood cuts on much too small a scale.

Transactions of the National Association for the Study of Epilepsy and the Care and Treatment of Epileptics. Volumes II and III, 1902 to 1905, inclusive.

These volumes have been edited by Dr. William P. Spratling, of Sonyea, N. Y. Volume II contains the presidential address of 1902, by Dr. Frederick Peterson, and that of 1903, by Dr. Wharton Sinkler. It also contains twenty-one scientific papers that bring concisely under review all phases of epilepsy, including its ætiology, diagnosis, pathology, clinical manifestations, and treatment, as well as reports on the public care of epileptics. Volume II contains the presidential address by Dr. William N. Bullard, for 1904, and that of Dr. William P. Spratling, for 1905. In the main this volume is given over to scientific papers on epilepsy, though it has a section made up of reports from many foreign countries and from all the States in this country in which public provision for epileptics has been made. The present status of the public care of epileptics in New York, New Jersey, Massachusetts, Texas, Pennsylvania, and Kansas is fully dealt with. Reports from the countries of the Far East are interesting in showing the dense ignorance and mysticism that still surround victims of epilepsy in that part of the world. On the whole, the data presented in these volume are peculiarly valuable and comprehensive, and probably cannot be exceeded by any other collection of papers of like purport on this extraordinary disease.

The Food Factor in Disease, being an Investigation into the Humoral Causation, Meaning, Mechanism, and Rational Treatment, Preventive and Curative, of the Paroxysmal Neuroses (Migraine, Asthma, Angina Pectoris, Epilepsy, etc.), Bilious Attacks, Gout, Catarrhal and Other Affections, High Blood Pressure, Circulatory, Renal and Other Degenerations. By FRANCIS HARE, M. D., Late Consulting Physician to the Brisbane General Hospital, Visiting Physician to the Diamantina Hospital for Chronic Diseases, Brisbane, Inspector General of Hospitals for Queensland. Volume I and II. London: Longmans, Green, and Company, 1905. Vol. i, pp. xiv-497; Vol. ii, pp. viii-535.

The author states that the argument contained in this work proceeds from the consideration of physiological metabolic processes to the elucidation of processes that we are accustomed to regard as pathological. The thesis is submitted that carbonaceous material may under certain circumstances accumulate in the blood to an ultraphysiological degree, and that such accumulation constitutes a primary cause of pathological action. The condition of the blood which results from this accumulation is called by the author hyperpyræmia, that is, a state of the human organism in which the contained carbonaceous matter, whatever its exact chemical composition, is in excess of the capacity of the organism for physiological disposal either by catabolism (combustion or oxidation) or anabolism (fat formation).

The author reviews what is known of the physiological uses and actions of food, and he argues that the nitrogen elements represent in great part the steel of the human engine, both that of which it is constructed and that which is required for repair, while the carbonaceous elements constitute the fuel. He discusses the income of carbon to the blood and the regulation of that income by physiological and, to some extent, by pathological methods.

Several chapters are devoted to the discussion of the physiological methods of expenditure of carbonaceous material, which is termed the decarbonization of the blood, that is, the processes whereby the blood is relieved from the unoxidized carbonaceous material constantly being supplied from the products of digestion.

On a priori grounds the author argues that under certain circumstances the carbon expenditure of the organism may fall below its income, so that there is an accumulation of carbonaceous material in the blood. He then presents the chief pathological methods whereby the amount of accumulated carbonaceous material in the system may be reduced, either by a reduction of income or by an increase of expenditure or by both.

Other chapters are devoted to recurrent pathological processes, such as paroxysmal neuroses, gout, some catarrhal, pyrexial, and hæmorrhagic affections, and some continuous pathological processes, such as glycosuria, consumption, and cancer, that depend upon hyperpyræmia or on some of its factors.

The author endeavors to be judicial in his attitude, and acknowledges frankly that the theory of hyperpyræmia is crude, and that its stability is not above all suspicion, as it is overburdened with speculations and

underweighted with facts. As he says, the speculations can be sifted and cleared of irrelevancy and inconsistency, and the facts can be reinforced and reorganized.

Miscellany.

Drugs in the Russian-Japan War.—The consumption of drugs in the war carried on in the Far East is one of importance. Quite early in the war upward of 100,000 ounces of quinine were demanded and stocks of bismuth subnitrate and sodium salicylate were exhausted. Fifty thousand large cases of medical supplies were shipped from Japan at one time. The demands for adhesive plaster, gauze, cotton, and other surgical dressings have been enormous, and supplies difficult to procure. Two million pills a day have been supplied by the army's tablet and pill works in Tokio, Japan. The government of Japan purchased all of the available stock of beechwood creosote, which is made into pills, and each soldier is required to take one a day to prevent dysentery. Each soldier carries a tin containing 90 pills and thy are labeled "Russian Expedition Pills." The government of Japan at one time purchased one hundred thousand pounds each of carbolic acid and corrosive sublimate. These supplies are obtained mainly from Great Britain and the United States. Every item is examined by experts and must be in accordance with the army pharmacopœia.—*Red Cross Notes.*

Results in the Treatment of Typhoid in the German Army.—The comparative value of different methods of treating typhoid fever in military hospitals is well brought out in an article of Dr. Simonin, in *Le Caducée.* He has made use of an instructive table covering the results for the past eight years in the German army, under different modes of treatment, including 7,685 cases of the fever. There are wide variations in mortality in the several services; from 1.2 per cent., with the Brand method rigorously used to 28.5 per cent. with warm baths and febrifuges used; and, no other indication is given as to whether the epidemic was mild or severe. Nevertheless, the results obtained as shown by these detailed statistics of the German army, from 1894 to 1902, prove the success of cold hydrotherapy in treating typhoid in military hospitals. Thus, in a total of 650 cases, under the Brand method strictly applied, there were thirty-eight deaths; a mortality of 5.8 per cent. In the series of 4,526 cases, where cold baths, modified according to circumstances in each case, were used there were 405 deaths, a mortality of 8.9 per cent. This last closely agrees with the universal statistics of typhoid mortality.—*Journal of the Association of Military Surgeons of the United States.*

The Genesis of the Hot Waters of the Earth (M. Armand Gautier, *Gazette des Eaux,* April, 1906).—Discussing the origin of these waters, the author suggests that this is just as mysterious to us as the origin of the Nile, Ganges, or Indus was to the ancients. He mentions the two theories of (1) percolation to the deeper parts of rain, sea, and glacier water, to return elsewhere to the surface; (2) that these hot waters are something new, formed in the deeper parts of the earth, and coming to the surface the first time impregnated with metallic or gaseous substances; and he states that he is in accord entirely with neither of these theories. If hot water springs are a result following volcanic phenomena, ancient or modern, then we ought to come across these hot waters in volcanic regions. Following out this suggestion, it is pointed out by numerous examples, in the Caucasus, in the region of the Black Forest, in the Rocky Mountains, etc., that this is the case. And, *vice versa,* in large districts where there is no volcanic formation hot water springs are not found; for instance, on the rocky plateau of Colorado, in a great part of Siberia and Northern China. We must therefore conclude that there is a very close connection between hot water springs and volcanic parts of the earth; besides, there is never an actual volcanic eruption which is not accompanied by discharge of steam, and this was notably the case at Mont Pelée. The appearance of hot springs around volcanoes, and in the fissures produced at the moment of the explosion, shows that these represent the final phase of the phenomenon. So, also, hot springs often follow earthquakes. It is very difficult to accept entirely the theory that the huge quantities of water and steam vomited suddenly by an active volcano have come entirely from percolation through the earth of rain water, sea water, or glacier water. How can we suppose that water from such sources could go on collecting for years and years whilst a volcano is completely quiescent, until suddenly one day an eruption takes place, and the whole is then discharged as steam or water?—C. Thurstan Holland in *Archives of the Röntgen Ray,* August, 1906.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending August 24, 1906:

Places.	Date.	Cases.	Deaths.
Smallpox—United States.			
Illinois—Chicago	Aug. 11-18	2	
Louisiana—New Orleans	Aug. 4-18	14	
Oregon—General	July 1-31	11	
Tennessee—Knoxville	Aug. 4-11	1	
Utah—General	July 1-31	32	
Wisconsin—Appleton	Aug. 11-18	1	
Smallpox—Foreign.			
Africa—Cape Town	July 7-14	2	
Brazil—Bahia	June 30-July 28	15	
Brazil—Rio de Janeiro	July 1-8	1	
Brazil—Rio de Janeiro	July 22-29	2	1
Chile—Antofagasta	July 1-13	23	4
France—Paris	July 21-Aug. 4	7	
India—Calcutta	June 30-July 7		11
India—Madras	July 7-13		3
Russia—Odessa	July 21-28	3	1
Russia—St. Petersburg	July 7-28	8	3
Siberia—Vladivostock	June 28-July 5	3	
Spain—Seville	July 1-31		20
Turkey—Constantinople	July 21-29		1
Uruguay—Montevideo	June 1-30		1
Yellow Fever—United States.			
Louisiana—New Iberia	Aug. 19	1	
Yellow Fever—Foreign.			
Mexico—Merida	July 29-Aug. 4	6	2
Mexico—Progreso	Aug. 7	1	1
Cholera—Foreign.			
India—Calcutta	June 30-July 7		18
India—Madras	July 7-13		12
Plague—Insular.			
Hawaii—Honolulu	Aug. 30		1
Plague—Foreign.			
Brazil—Rio de Janeiro	July 1-8	2	
Brazil—Rio de Janeiro	July 22-29	1	
Chile—Antofagasta	July 1-13	4	2
China—Hongkong	June 30-July 7	12	7
Egypt—Alexandria	July 13-27	11	6
Egypt—Port Said	July 17	1	
Egypt—Suez	July 14-27	6	3
Egypt—Assiout Province	July 19-28	2	
India—General	June 30-July 7	630	536
India—Calcutta	June 30-July 7		9
Japan—Formosa—General	July 10-30	45	40
Persia—Seistan	June 23-July 22	90	85
Peru—Lima	July 14-21	1	
Peru—Mollendo	July 4-18	2	2

Public Health and Marine Hospital Service:

List of Changes of Station and Duties of Commissioned and Noncommissioned Officers of the Public Health and Marine Hospital Service, for the seven days ending August 22, 1906:

ANDERSON, J. F., Passed Assistant Surgeon. Detailed as temporary chairman of board convened July 2, 1906, to investigate the origin and prevalence of typhoid fever in the District of Columbia, to serve during the absence of Passed Assistant Surgeon M. J. Rosenau on fourteen days' leave, from August 20, 1906.

CARLTON, C. G., Pharmacist. Granted leave of absence for twenty-four days, on account of sickness, from July 9, 1906.

CUMMING, H. S., Passed Assistant Surgeon. Granted leave of absence for one month, from September 15, 1906.

DUNN, JAMES, Acting Assistant Surgeon. Granted leave of absence for twenty-three days, from August 13, 1906.

GOODMAN, F. S., Pharmacist. Granted leave of absence for ten days, from September 10, 1906.

HALL, L. P., Pharmacist. Granted leave of absence for seven days, from August 17, 1906, under Paragraph 210 of the Regulations.

HUNT, REID, Chief, Division of Pharmacology. Detailed to represent the Service at the fifty-fourth annual meeting of the American Pharmaceutical Association, at Indianapolis, Ind., September 3, 1906.

NYDEGGER, J. A., Passed Assistant Surgeon. Leave of absence granted Passed Assistant Surgeon Nyregger for three months, from August 11, 1906, amended to read one month and fifteen days, from September 8, 1906.

PETTUS, W. J., Assistant Surgeon General. Granted leave of absence for thirteen days, from August 20, 1906.

PORTER, J. Y., Sanitary Inspector. Granted leave of absence for seven days, from August 6, 1906.

ROEHRIG, A. M., Pharmacist. Detailed to represent the Service at the fifty-fourth annual meeting of the American Pharmaceutical Association, at Indianapolis, Ind., September 3, 1906.

ROSENAU, M. J., Passed Assistant Surgeon. Granted leave of absence for fourteen days, from August 20, 1906.

RYDER, L. W., Pharmacist. Granted leave of absence for twenty-five days, from August 20, 1906.

TOWNSEND, F., Acting Assistant Surgeon. Granted leave of absence for seven days.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, for the week ending August 25, 1906:

DESHON, GEORGE D., Major and Surgeon. Left Fort Des Moines, Ia., with 11th Cavalry, *en route* to Camp of Instruction, Fort Riley, Kas.

FAUNTLEROY, P. C., Captain and Assistant Surgeon. Detailed to represent the Medical Department of the United States Army at the fifteenth annual meeting of the Association of Military Surgeons of the United States, to be held in Buffalo, N. Y., September 11 to 14, 1906.

HANNER, JOHN W., First Lieutenant and Assistant Surgeon. Left West Point, N. Y., with cadets on practice march.

HAVARD, VALERY, Colonel and Assistant Surgeon General. Detailed to represent the Medical Department of the United States Army at the fifteenth annual meeting of the Association of Military Surgeons of the United States, to be held in Buffalo, N. Y., September 11 to 14, 1906.

HUNTINGTON, P. W., First Lieutenant and Assistant Surgeon. Left Fort Rosencrans, Cal., *en route* to Camp of Instruction, Murray, Wash.

NOBLE, R. E., First Lieutenant and Assistant Surgeon. Leave of absence extended one month.

O'CONNOR, R. P., First Lieutenant and Assistant Surgeon. Granted thirty days' leave of absence.

WALKER, FREEMAN V., Captain and Assistant Surgeon. Having been appointed to his former grade of assistant surgeon, with rank of captain, is placed upon the retired list of the Army, by direction of the President, August 20, 1906.

WATERHOUSE, S. M., Captain and Assistant Surgeon. Left Fort Worden *en route* to Camp Tacoma, Wash., for duty.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy for the week ending August 25, 1906:

BAKER, M. C., Acting Assistant Surgeon. Ordered to the Naval Hospital, Newport, R. I.

ELLIOTT, M. S., Surgeon. Detached from the *Florida* and ordered to the *St. Louis*.

IDEN, J. H., Passed Assistant Surgeon. Ordered to the *Florida*.

JONES, A. McK., Acting Assistant Surgeon. Ordered to the Naval Hospital, Norfolk, Va.

LONGABAUGH, R. I., Acting Assistant Surgeon. Ordered to the Naval Hospital, Mare Island, Cal.

PEASE, T. N., Assistant Surgeon. Resignation as an assistant surgeon in the Navy accepted, to take effect August 21, 1906.

Births, Marriages, and Deaths.

Married.

FRALIC—QUINN.—In York, Pennsylvania, on Friday, August 17th, Dr. Harry Fralic and Miss Mary Quinn.

Died.

BACON.—In Fulton, N. Y., on Sunday, August 19th, Dr. Charles G. Bacon, aged ninety-one years.

BLISS.—In Brooklyn, N. Y., on Sunday, August 19th, Dr. William A. Bliss, aged sixty-five years.

CALABRESE.—In Buffalo, N. Y., on Thursday, August 16th, Dr. Bernadino Calabrese, aged sixty-eight years.

CLINTON.—In Washington, D. C., on Monday, August 20th, Dr. Charles Wilmot Clinton, aged seventy years.

COCHRANE.—In Winthrop, Maine, on Monday, August 13th, Dr. Charles A. Cochrane, aged seventy-three years.

COOPER.—In Atlanta, Georgia, on Friday, August 24th, Dr. H. P. Cooper, aged forty-six years.

DEARBORN.—In Somerville, Massachusetts, on Sunday, August 19th, Dr. Alvah D. Dearborn, aged sixty-four years.

FAHRNEY.—In Hagerstown, Maryland, on Wednesday, August 22nd, Dr. Lewis Welty Fahrney, aged forty-eight years.

FITZGERALD.—In Minneapolis, Minnesota, on Sunday, August 19th, Dr. R. J. Fitzgerald, aged forty-six years.

GAUNTT.—In Philadelphia, on Thursday, August 16th, Dr. Charles Stockton, Gauntt.

GOULEY.—In Rochester, Minnesota. Margaret, eldest daughter of Dr. J. W. S. Gouley, of New York.

HAMILTON.—In Memphis, Tennessee, on Thursday, August 16th, Dr. George D. Hamilton, aged thirty-five years.

HARRISON.—In Washington Grove, Maryland, on Friday, August 17th, Dr. James McKendree Harrison, aged fifty-six years.

HAYS.—In New York, on Sunday, August 19th, Dr. Benjamin E. Hays, aged sixty-nine years.

HINDS.—In New Hope, Alabama, on Tuesday, August 21st, Dr. B. W. Hinds.

LAIRD.—In Atlantic City, N. J., on Monday, August 20th, Dr. Frank F. Laird, aged fifty years.

MORRIS.—In Belvidere, N. J., on Wednesday, August 22nd, Dr. Austin Flint Morris, aged thirty-eight years.

OWENS.—In Denton, Maryland, on Friday, August 17th, Dr. Frederick J. Owens, aged eighty-four years.

PRESTON.—In Lewiston, N. Y., on Tuesday, August 21st, Dr. Robert J. Preston, aged sixty-five years.

ROBERTS.—In Wilmington, Delaware, on Sunday, August 12th, Dr. Frederick A. Roberts, aged thirty-three years.

VAN TUYL.—In Leavenworth, Kansas, on Sunday, August 19th, Dr. W. R. Van Tuyl, aged forty-two years.

WHALAND.—In Baltimore, Maryland, on Tuesday, August 14th, Dr. Charles T. Whaland, aged twenty-two years.

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Original Communications.

CHOLELITHIASIS.*

BY CARL BECK, M. D.,
New York,
Professor of Surgery in the Postgraduate Medical School and Hospital; Visiting Surgeon to the St. Mark's Hospital and the German Poliklinik.

During the course of the last few years the place formerly held by heated debates on the question of appendicitis has been usurped by more or less antagonistic discussions concerning gallstones and their cure. The doctrine of appendicitis, its inflammation and treatment, is of decided American origin, a fact now admitted in Europe, even though it costs some effort. This society may well feel proud of the work it contributed toward unmasking the Proteuslike physiognomy of this much discussed disease. The nature of gallstone disease was first recognized and convincingly set forth in Germany. Lately, however, our native scientists have added the results of their last few years' research and have shed more light on the question.

Based upon our pathological anatomical observations, we have learned quite some time ago to fear the doubtful sequelæ of apparently simple cases of appendicitis. Those who were blessed with a plentiful material, and who had the opportunities of proving the correctness or error of their diagnosis in flagranti on the operating table, naturally preferred the scalpel to those adventuresome calculations which had been called to life by the greater or lesser virulence of the bacterium. In a like sense we may hope to approach the extremely important question of gallstone disease by the pathway of pathological anatomical study. In this instance, also, it is that which the surgical eye first sees in the abdominal cavity which must act as our guide. Indeed, a guide to the right attic of the abdominal cavity is very much in demand, for the differences of opinion on the question of gallstone therapy draw vastly apart and are similar to the point of view taken in regard to perityphlitis of twenty-five years ago. Even here we perceive the contest raging between conservatism and radicalism. Many prominent surgeons are found among the adherents of the latter, surgeons who wish to see the diseased gallbladder treated by analogy of the inflamed vermiform appendix. I do not agree with this extreme point of view. It is always justifiable to remove an appendix which causes any discomfort, be it ever so little. For that which goes on in the right iliac fossa may, at the deciding moment, become altogether unintelligible to the most practiced medical eye. On the other hand, gallstone disease makes its presence felt. In most cases we can recognize the disease by its symptoms, and that at a period early enough to permit of successful surgical treatment. The most fateful character of appendicitis is the frequent necessity of taking into consideration the imponderabilium. No amount of counting of leucocytes will change this.

Thus it seems unfortunate to me that prominent men of our profession make the attempt to draw analogous lines between appendicitis and cholelithiasis. For appendix and gallbladder, in the anatomical, physiological, and clinical sense, are two entirely different organs. A very striking and prime difference accrues from the fact that cholelithiasis is in the first place dependent upon the presence of foreign body and is marked by the very much different forms of reaction on a mucous membrane sui generis.

The essential part then is the stone. If we group the causes of its formation and growth together we will at least have to proceed by that path of knowledge which will make known to us the means of stopping the cause. Since the time when Löwenberg, of Heidelberg, described the first gallstone in the living—in 1554 he found a gallbladder in a man which was drawn down among the intestines by the weight of a contained stone—the interest taken in cholelithiasis has steadily been on the increase. Morgagni already has spoken of the necessity of "removing the stones from their isthmus (?)" The passage in his book, *De sedibus et causis morborum*, ii, Epistola xxxvii, No. 48, published in 1761, is as follows: "Igitur curationis pars una erit dare operam, ut calculus ex angustiis illis se expediat. Altera postquam se inde expedierit, ut si quis alius restat calculus, si fieri possit dissolvatur. Tertius ne procretur novus."

True surgery of the bile passage only exists since the genius of Carl Langenbuch, in 1882, found the means of removing the stone bearing gallbladder. Although much literature concerning cholelithiasis has accumulated since that time, there is now very little research work of mention concerning the ætiology and its attached causes. Naunyn's, Duclaux's, and Mignot's classic studies are the only exception, the clinical

* Presidential address delivered before the American Therapeutic Society at its annual meeting, May 3, 1906.

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aspects as well as medical and surgical therapy completely commanding the situation. The halo surrounding modern surgical technics naturally exacts a greater charm than the laborious and modest research, so little respected by the masses, which is carried on in the laboratory. And if we should at times touch the mark, then those of lofty brow patronizingly exclaim: "Oh yes, that is very nice, but it possesses only an academic interest." Therefore, the inducement is wanting.

If we sum up the main ætiological factors we find that in general the gallbladder is the shop for the manufacture of gallstones, not merely a receptable, as in the case of the urinary bladder. Especially such conditions as cause a stagnation of bile are liable to favor the formation of stones. But that stagnation itself is not of importance is evident from the fact that concrement formation usually fails when such stagnation producing conditions as closure of the ductus choledochus by chronic inflammation or by cicatricial contraction or by tumefaction is present.

I believe it is generally admitted that the bacterium plays a leading part in the formation of stones. But although Nauyn lays special stress on the point that the bacterium alone is the exciting agent, I must nevertheless doubt this fact, even though my respect for this deserving man of research is a great one. Whenever there is business to be transacted two parties are necessary to the deal. Just so it is with an infection. The one is the seed, the other is the soil. It is similar to the parable of the sower whose seed fell on fertile and stony soil. Let us question ourselves as to the nature of the agent which stamps the gallbladder a suitable soil. We perceive that it is especially in conditions of compression, as mentioned, that the intestinal bacteria find entrance. Indeed, we have here both ætiological factors, stagnation and infection combined. And still these united forces do not incite stone formation.

There must be a third agent which, acting in unison with the two aforementioned factors, favors formation. As yet we have been unable to disclose the identity of this unknown tertium. It seems to me that tissue changes must play a leading part in this action. A tireless worker ought to be able to discover their kind or nature in his laboratory. Especially the matter of hereditary predisposition speaks for this assumption.

During the month of March, 1899, I had an opportunity of presenting to the academy some members of a gallstone carrying family. Altogether there were ten of them, including grandmother and grandchild. In two of them I could verify the diagnosis by cholecystostomy. Perhaps some of the gentlemen present can remember that I had performed a left sided cholecystostomy on one of them, the patient suffering from transposition of the viscera (I found patient well and hearty a short time ago). In a third member, a brother of the two I had operated upon, I could diagnosticate five stones by skiagraph. I had also presented the skiagraph at the time stated to the society (this patient still carries his stones and shows no discomfort worth mentioning). The grandmother, who suffered grave discomfort, had already consented to operation. She was taking a Carlsbad cure, and during an especially vigorous attack passed two fairly large stones. The composition of the two stones and those passed per vias naturales is identical. The stones of mother, son, and daughter are all of like elliptical shape. Mother and daughter both had two large stones. The son shows two large stones of similar shape. He has three smaller ones besides. In a fifth member of the family the diagnosis was verified by autopsy. A gallstone forming diathesis must exist as well as the urinary diathesis, else we could not explain the prevalence of the disease in generations of families.

The prevalence of the disease in certain districts (especially in shape of food stuffs and mode of living) supports the theory of tissue change.

It is not desired to oppose the diathesis to the theory of stone creative action of bacteria, but rather to consider the possibility that the extraordinary disposition of the gallbladder presents a certain soil for the development of the formative bacterium. As we know, normal bile contains no bacteria, Duclaux (Netter and Duclaux, in Naunyn, *Klinik der Cholelithiasis*, page 44) proved that only the lowest portion of the ductus choledochus contains bacteria (*Staphylococcus aureus* and *Bacterium coli commune*). If the duct is not flushed with bile, as is the case in temporary state of starvation, then the bacteria pass upward and reach the bladder. Furthermore, we must realize that the bile is not a favorable soil for the bacteria. The bile facilitates the growth of the typhus bacillus and coli communis. *Staphylococcus pyogenes, Staphylococcus aureus,* and *Bacillus prodigiosus* grow very slowly. Upon a few bacteria, like the *Staphylococcus albus*, the bile exerts a toxic influence. The theory of the formative action of bacteria finds its main support in the experiments made by Mignot upon animals. These prove the possibility of artificial production of stones (R. Mignot, L'origin des calculs biliaires, *Archives générales de médecine*. clxxxii, No. 8 and 9, August and September, 1898). This scientist was able to build concrements as soon as he introduced weakened bacteria, or foreign bodies infected with weakened bacteria, into the gallbladder of dogs and guinea pigs. They were homologous with those which we find in human cholelithiasis. As soon as the bacteria were fully virulent, precipitates, mixed with pus, showed in the bladder, but never a true concrement. If aseptic foreign bodies were placed in the bladder neither inflammation nor precipitation took place. Of the types used by him in his experiments the *Bacillus coli communis, typhosus,* and *Streptococcus pyogenes* gave the same result as the *Staphylococcus aureus, albus,* and *Bacillus subtilis*. For similar experiments we are obliged to Miyake (*Mitteilungen aus den Grenzgebieten der Medizin und Chirurgie*, vi, part 4). This learned author comes to the same conclusions.

Valuable as the results of these experiments are, they fail in giving us any disclosures concerning the aforementioned tertium. They tell us that concrements are formed in the gallbladder

by the development of bacteria. But they do not answer the question how and wherefore bacteria reach the gallbladder of the a priori healthy individual, and then produce lithiasis there. As we saw a little while ago conditions of compression offer multiple advantages for processes of infection, and still no formation of concrement takes place.

Of what nature then are the hypotheses which make the invasion of infectious stimulants possible and further their propagation? We must again refer to the unknown tertium. Thus, in science it is often the case that a valuable discovery is made only to present added unsolvable questions.

The combined efforts of the surgeon and the

FIG. 1.—Stratified cholesterin calculi, taken with Wehnelt interrupter, using a platinum rod of medium length; a, photograph of stratified cholesterin calculi bisected; b, calculi of this type skiagraphed, four minutes' exposure.

pathologist should be able to find this tertium. If the surgeons who have so many chances to observe the various phases of biliary activity would register their observations we would gain valuable points which could bring us nearer toward solving the problem. And the pathologists might corroborate the surgical hypotheses by experiments on the lower animal.

Another way to approach the question is the careful study of the composition of gallstones. This I have given much attention, the Röntgen method being of considerable aid to me.

In giving a short résumé of my experiments I may mention in the first place that the two main components of gallstones are cholesterin and bilirubin plus calcium. Whence their origin still awaits explanation. It is generally believed that these substances are precipitated from the mucous membrane of the gallbladder as soon as a certain irritation sets in. Such irritation is produced by a slight inflammatory process. Added to this is a desquamation of the epithelium caused by infection (lithogenous catarrh). But the peculiar point of this change hinges on the fact that we do not find a process analogous to precipitation as commonly met with, but a process of condensation similar to that of electrolysis. Ergo, we observe the formation of a nucleus over which other incrustations settle. Many such nuclei, each one with its several coatings, may thus be formed. So large an amount of gall substance may become agglutinated to a nucleus that finally one solitary concrement, which completely fills the bladder, is the result. Thus stones eighteen cm. long and seven cm. thick have been reported. Some authors have named 7,000 as the greatest number of multiple stones. In a recent case of cholecystotomy I have counted over 3,000 stones in a very much distended bladder.

The conditions which govern these extremely dissimilar formations are unknown to us. The chemical composition of stones is easily proved. As I have shown before, the morphological arrangement is illustrated most clearly by means of the Röntgen picture. The latter also informs us concerning the density of the stones. I wish to emphasize the point that the Röntgen plate proves that the renal as well as the gallstone seldom shows a pure type of composition. In a few stones one may find as many as five layers.

To facilitate matters, however, it is advisable to adhere to some general scheme. Modifying the views of Naunyn, I have suggested to distinguish pure cholesterin stones, stones of cholesterin which show separate layers, common gallstones, stones of mixed bilirubin, and pure bilirubin stones.

Pure cholesterin stones are round and as large as a cherry or a pigeon egg. They rarely show facets. Their appearance is whitish, their surface is smooth, at times warty. On section they show no layers.

The cholesterin stone composed of layers is also whitish, but shows spots of color here and there. In size it is similar to the stone of pure cholesterin, but is more frequently faceted. The section shows a glassy or earthy layer externally. Toward the centre a crystalline character predominates. The nucleus itself is generally crystalline. What appears to be of special importance for our research is the fact that the white as well as the crystalline portions contain cholesterin, while the colored portions contain an added amount of bilirubin and biliverdin. In exceptional cases we find a green layer. This contains calcium carbonate.

The so called common gallstones are the main contingent of cholelithiasis. Their form, size, and color are subject to frequent change. Oftenest they are of the size of a pinhead. Rarely they attain to the size of a hazel nut. Their exterior may be of a white, yellow, or brownish tinge. In consistency they are so soft that one can easily pulverize them. The nucleus is the softest. The crust is fairly hard. There is no crystallization. The centre of the nucleus often shows an elliptical or stellate cavity, which contains a yellow, alkaline fluid as long as it is protected within the nucleus.

The mixed bilirubin and calcium stones are characterized by their occurrence in groups of twos and threes, never in multiple numbers. If several stones are present the facet formation predominates. The different layers are reddish

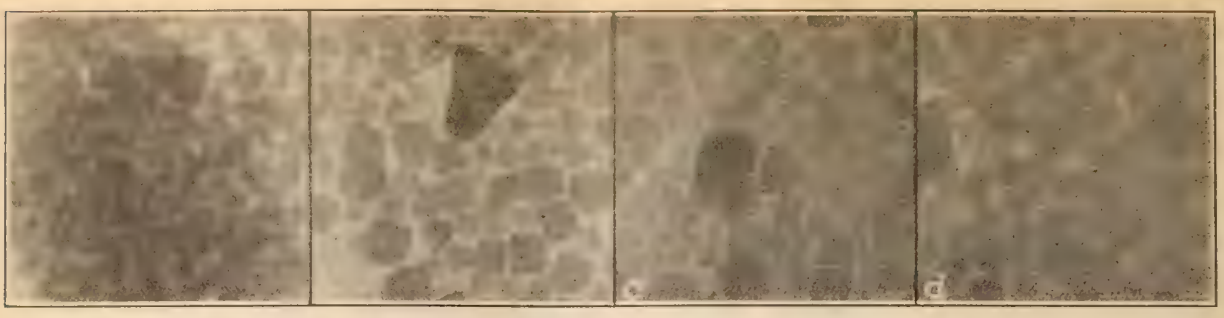

FIG. 2.—Common biliary calculi, taken by using a platinum rod of medium length, diaphragm exposure; a, common calculi, contained by a gauze bag, two seconds' exposure; b, 250 calculi taken from the bag, skiagraphed in Fig. 2 a, and disseminated over a surface, two seconds' exposure; c, the same calculi after half a minute's exposure; d, the same calculi after two minutes' exposure; e, the same calculi after four minutes' exposure.

or dark brown. The nucleus shows a light crystalline composition. The outer layers contain between twenty per cent and thirty per cent. cholesterin. The other component parts contain bilirubin and calcium and traces of iron and copper.

Stones of pure bilirubin with calcium are characteristic in scarcely ever attaining to the size of a lentil. The color is usually a brownish black, their shape uneven, and their consistency soft. This softness often causes them to adhere one to another. Other stones show a steel gray or black color with a pronounced metallic radiance. When this constellation of colors predominates the pure bilirubin with calcium stones are of a hard consistency. They are formed by a fusion of the calcium salts of the bile. The salt of bilirubin prevails. At times as much as sixty per cent. of bilihumin with calcium is present. The presence of cholesterin must be regarded as rare.

Naunyn distinguished small, amorphous, or partially crystallized cholesterin stones. They are to be considered as rare. They are never larger than a pea, and possess a nucleus of bilirubin with calcium, or one of a crystalline structure. There are no layers.

Aided by the Röntgen examination of a large number of gallstones, I may be allowed to maintain that a type of total purity is rarely seen. As a general rule various different elements of various consistency are found. Calcium in greater or lesser quantities, sometimes a mere trace, was present in nearly all stones. In a demonstration of the portrayal of gallstones by the Röntgen rays (New York County Medical Society, October, 1899) I had already succeeded in illustrating the different density of stones (vide *New York Medical Journal*, January 20, 1900). By the aid of the x rays we are much better able to differentiate between the separate layers of the concrements. I make use of this helpmeet to show you how much more easily the outline of these struc-

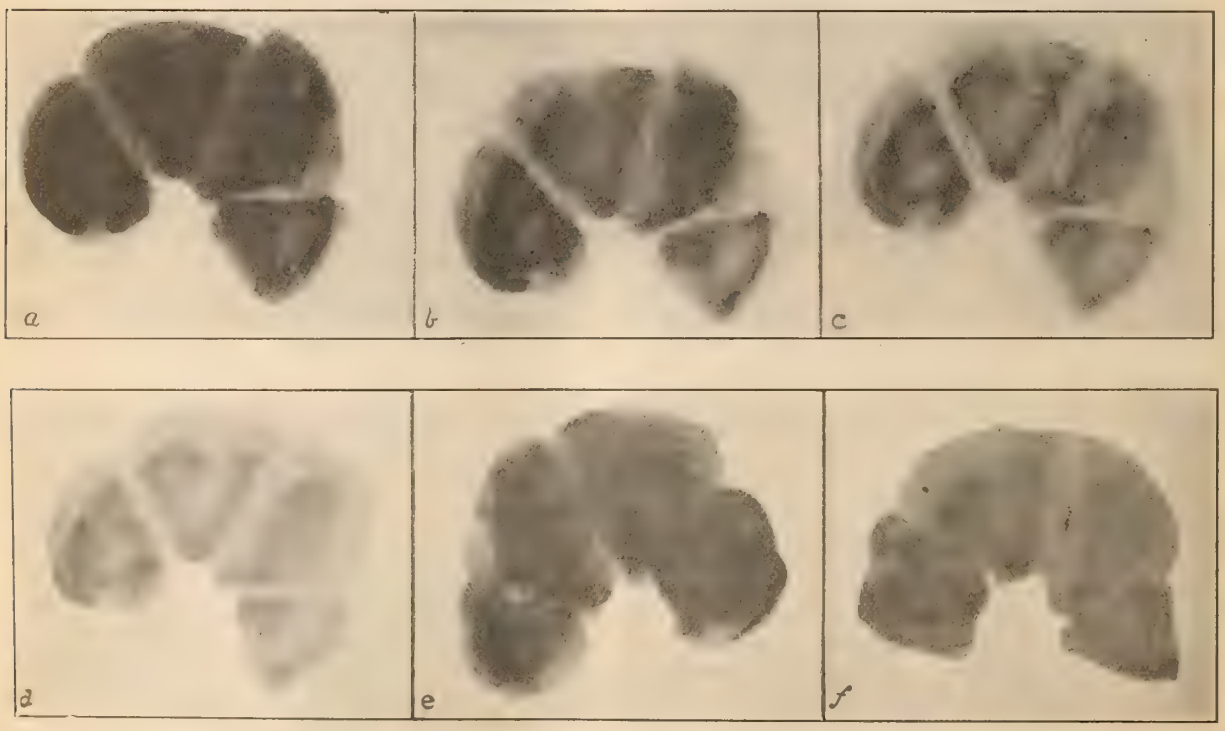

FIG. 3.—Solitary calculus consisting of four faceted portions, containing bilirubin calcium; a, exposure lasting two seconds, platinum rod of medium length; b, exposure of half a minute, platinum rod of medium length; c, exposure of four minutes, platinum rod of medium length; d, eight minutes, rod of medium length; e, exposure lasting two seconds, showing 2b at the same time, soft tube, rod of medium length; f, same calculus after four minutes' exposure, rod of medium length; g, same calculus, after exposure of three minutes, placed on the back of a normal man, aged thirty years, rod of medium length, soft tube (note that the ribs can hardly be recognized).

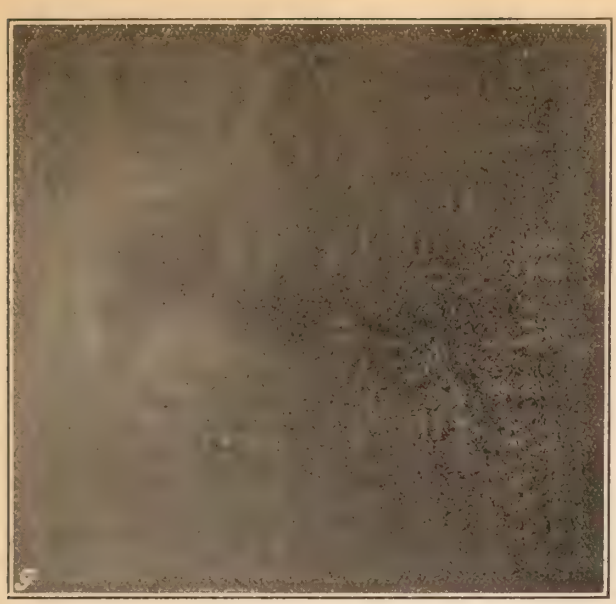

Fig. 3g.

tures can be portrayed by the diaphragm than by the method in general use. With this procedure we find that stones of cholesterin, which contain very little or no calcium, throw a light shadow. The other stones all throw a shadow of nearly an even density. We may conclude therefrom that stones of all kinds present sufficient impenetrability to the rays and produce a shadow on the plate.

To augment my former work I have made some experiments to illustrate the difference as it presents itself: (1) In different gallstones; (2) with different intensity of light; (3) with different numbers of interruptions, regulated by varying lengths of the platinum rod in the Wehnelt interrupter; (4) with different length of time of exposure and to show the relations in reaction.

If my illustrations are studied it will be found that only in the pure cholesterin stones is it possible to eradicate an impression already made on the plate. With the other stones a haziness of the shadow made by the stone is noticed only

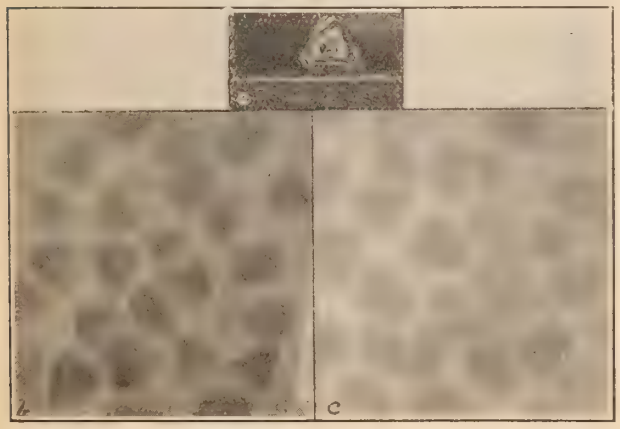

Fig. 4.—Various calculi taken by a tube of medium hardness: a, bilirubin calculus (photograph); b, type a, half a minute exposure; c, same type, two minutes' exposure; d, bilirubin calcium calculi, four minutes' exposure; e, photograph of bilirubin calcium calculi, bisected; f, after half a minute's exposure; g, after three minutes' exposure; h, one of the calculi bisected; i, thickened empyematous gallbladder (unopened) containing three calculi, after removal.

when the exposure was too long or when the tube was too hard. Thus it cannot generally be the fault of the stones if we encounter difficulties while photographing them in the living subject. The difficulties are manifold, but I have repeatedly shown that most of them may be overcome. In this instance, truly, patience is a virtue, and he whom

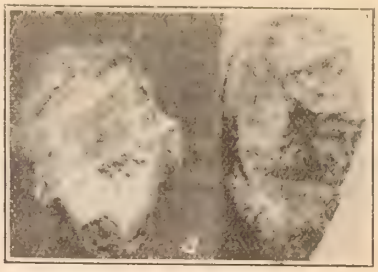

Fig. 4.

Nature has not plentifully supplied with it ought not to busy himself with the rays. But in that case the impatient ones should not generalize, and, as in the fable of the fox and the grapes, belittle the facts.

The difficulties are these: Impenetrability of the liver substance, flushing of the stones with bile, and respiratory motion. The greatest technical difficulty is presented by the density of the liver, which acts as a curtain to the gallstones. If the projection is taken right through the liver substance, most of the rays are absorbed before they reach the stones. We are unable to shift the liver aside, but in those cases of hydrops of the gallbladder where stones are found in the fundus and where the bladder projects beyond the edge of the liver we see them well. But then the diagnosis is *co ipso* so distinct that the rays are of little importance. But in a case of cholelithiasis, with a normally situated gallbladder, we are able to point the rays by changing the position of the patient, so that they pass only through part of the liver substance to

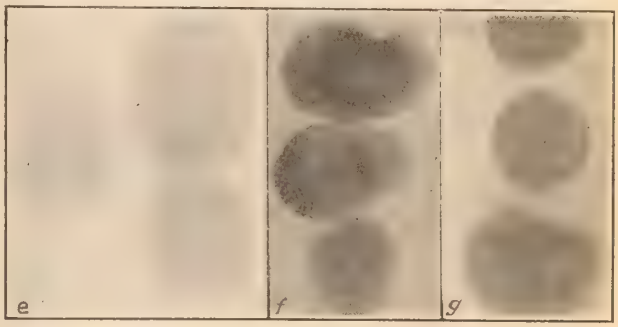

Fig. 4.

reach the bladder. He who guesses this direction best will be the most successful. This position is the following one: The patient lies in the abdominal position, three fairly large pillows being placed beneath the clavicle, while the left side of the body is placed over the plate. Thus the rays to a large extent pass along the lower border of the liver and through the abdomen. To accurately designate the point of focus it is advisable to use a compass and mark the back and right hypochon-

drium accordingly with a pencil. The best results are obtained with the diaphragm. During the last few years I have used my diaphragm, which, although not more perfect than some others, is much cheaper, a circumstance of some importance. As a rule, one should use soft tubes, because stones which contain little calcium are wiped out by hard tubes. If one possesses a

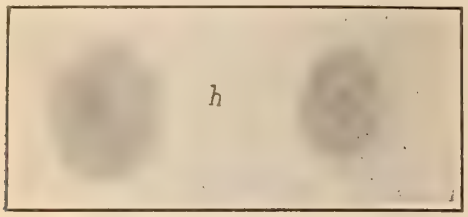

Fig. 4.

Ruhmkorff apparatus with a Wehnelt interrupter five minutes' continued exposure should serve. Of course one will never obtain the marked details of a picture of a renal stone, but that is not necessary. So long as one can recognize the characteristic shape of the stones we have sufficiently verified the diagnosis. It is necessary to examine the plates very minutely, as often the stones are not visible at first glance. If the plates are viewed with diffused light and held at a slight angle, one will often be surprised at the distinctness of the contours. Thus many an impatient man in thoughtlessness has thrown gold nuggets away.

A good gallstone picture shows little bone structure. In my best pictures the lumbar portion of the spine is invisible and the ribs are just barely recognizable. Whenever these structures stand out prominently one will scarcely find gallstones. In the photography of renal stones the ratio is a contrary one

An exposure in ventrodorsal position, *i. e.*, with the patient on his back, is a much simpler, but less successful one. In using the diaphragm one can press the tube into the hypochondrium, thus diminishing the distance between tube and plate, and also control the respiratory movements. Nevertheless, these pictures are not distinct. Naturally the spinal column is much more distinct. If suspicion points to nephrolithiasis, that is, in cases where the colic is not localized, or where nothing of moment is found in the urine, this position is preferable.

Considerable preparation is necessary before taking a picture of gallstones. I have reference to the evacuation of the bowels and the administration of opium toward diminishing peristaltic movements. If the result be a negative one, I repeat the exposure, using a slightly harder tube. Should the second exposure likewise miscarry, then a shorter exposure, perhaps of three minutes, is indicated. Perhaps the stones are very transparent and become eradicated by the long exposure. It might also be advisable to try the ventrodorsal position after repeated failure.

As stated, we find approximately ninety-five different possibilities of composition in 100 cases of cholelithiasis. Theoretically speaking, the length of exposure and the hardness of the tube should be regulated accordingly. Thus we are able to employ our indications tentatively and experimentally only. In other words, a skiagraph which is perfect with one individual may prove entirely unsatisfactory with another. Many concrements which at first show a faint shadow only grow more distinct on longer exposure, while transparent stones, having been fixed on the plate, will disappear completely with the same length of exposure.

Let us approach the difficulties now which present themselves from the impenetrability of the bile. These details are known. If we pour bile into a vessel which is easily penetrated by the Röntgen rays, or pour it into the gallbladder of an ox, then the calculi placed in the fluid appear indistinct, especially if they consist of pure cholesterin. But in the dense types the presence of bile has little effect. In practice, however, it is usually a fact that in those cases where we find no acute inflammatory condition there is very little bile in the bladder. Surgeons who must take such great care in aseptic drainage of the bladder before incising it are well aware of this fact. Without any desire to belittle the importance of this factor in some cases, I believe that, in general, it is not of much moment. Furthermore, I have found that a bladder containing stones and being fairly well filled with bile leaves a tumor like shadow on the plate. Similar views may be taken concerning respiratory movements. Assuredly they are distressing, but does not every textbook contain the most beautiful plates of the human thorax? And even though we could represent only indistinct stones, their recognition would present minor difficulties. On page 129 of my book (*Röntgen Ray Diagnosis and Therapy*, New York and London, 1904) is a representa-

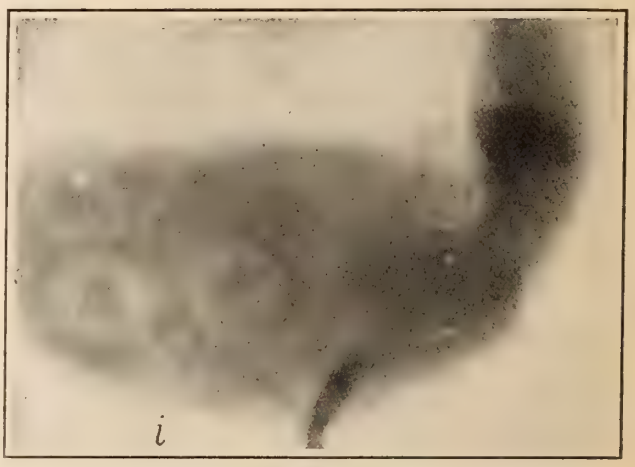

Fig. 4.

tion of the vesical stone of a boy who, through nervousness, was continually moving about while the picture was taken. Nevertheless the stone, discounting a slight haziness of outline, was very distinct. The relative dimensions were changed. But this is not the most important factor. He who has mastered the technics of rapid exposures may be able to skiagraph a thorax "with bated breath," and he may also succeed thus in biliary skia-

graphy. The movements of the thorax, however, are much checked by the administration of opium.

We perceive that many imperfections still cling to our methods. However, we may say that, with a sufficient dosage of patience, we are able to portray a certain number of gallstones. A positive picture is a valuable document both to physician and patient and should be highly respected. If large stones are found we know that they cannot be removed without operation. If smaller calculi are found some distance removed, we can suspect that they are resting in the bile ducts. Should repeated skiagraphic attempts fail to demonstrate the stones, then we should not hastily draw the conclusion that there are none present, but should rely upon our clinical methods of examination only. It is the defects of our technics, then, which are to blame. In lithiasis of the urinary tract, where our technique is so greatly aided by the use of the diaphragm, we are happily so situated that should an otherwise perfect skiagraph show no presence of a stone we may trustfully deny the presence of a stone.

Based upon these facts, then, I have no doubt that the method just described will be materially benefited by improving our technical armamentarium. If one has proved the presence of a gallstone, then one can demonstrate the success or failure of the cure by a second skiagraph.

The practical value of the Röntgen method of diagnosis in cholelithiasis is not a little diminished by the excellence attained by our methods of clinical examination. Still, there are a few doubtful cases in which the Röntgen rays alone are able to cast a light on the subject. (The frequency of this indecision can be seen from the unwise advice still found in some textbooks to make use of acidopeirasty.) If we consider the frequency of cholelithiasis, a disease which, roughly speaking, attacks ten per cent. of all mankind, then we can realize that quite a number of doubtful cases remain. Take, for example, the difficulty of differentiating between cholelithiasis and gastric diseases.

In many instances the diagnosis of cholelithiasis can be made by the tenderness over the sphere of the gallbladder and the previous history of the case. Especially valuable are the reports of the patients concerning the characteristic symptoms, principally attacks of colic, in the region just mentioned. The latter are generally noticed at night time. In the minority of cases the jaundice points to the nature of the disease. Sometimes a gallbladder filled with calculi can be palpated as a marked resistance in the depth, especially if cholecystitis is present. I find that the best way to palpate the organ is by having the patient on his feet, slightly bent forward, his right arm resting on the left shoulder of the physician. Thereby the whole region is greatly relaxed, so that the palpating hand can easily glide below the costal border (Fig. 5).

During acute processes our palpatory findings, however, may sometimes mislead us. It would lead me too far if I would consider the various sources of error in this direction. I only want to emphasize that appendicitis is sometimes mistaken for cholecystitis, and vice versa. In previous publications on this subject I have called attention to this possibility, pointing out at the same time how pardonable this error may be at times. In several of my cases cholecystitis was diagnosticated when appendicitis was present, the appendix being situated as high up as below the rib arch. In such cases the appendix used to be excessively long (see Is Appendicitis a Surgical Disease? *New York Medical Journal*, November 12, 19, 26, and December 10, 1898).

On the other hand, the gallbladder may be dragged downwards, especially when there are large elliptic calculi so that the fundus may reach into the iliac fossa. In one of the cases two large elliptic calculi were situated, one above the other (see Fig. 4, e), so that the gallbladder assumed the shape of a thin sausage, its base reaching the cæcum.

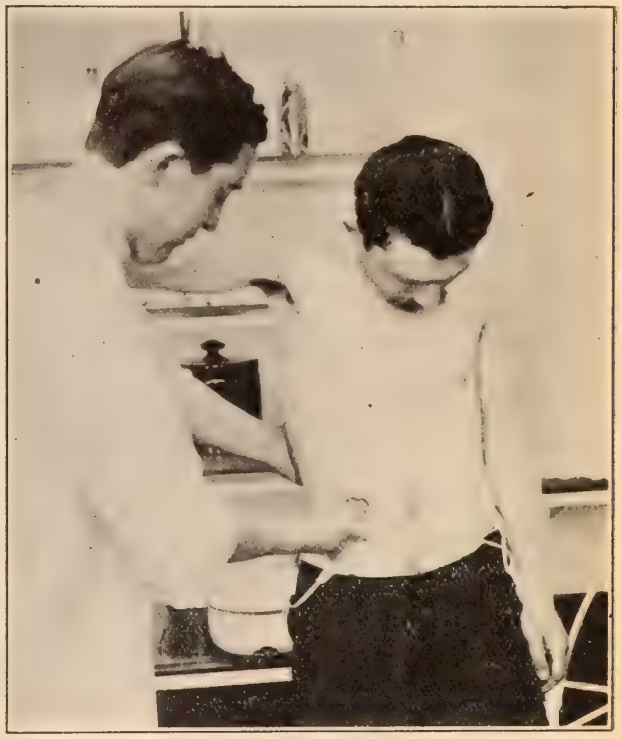

FIG. 5.—Palpation while the patient is on his feet, slightly bent forward.

As I could demonstrate the coherence between liver and the sausage shaped point of resistance I was able to make a correct diagnosis before opening the abdomen, and consequently I carried my incision alongside the outer border of the rectus muscle.

In a recent case, however, I was mistaken. The patient, a woman of fifty-three years, had three colicky attacks, which bore the character of recurrent appendicitis. The pain was always located in the right iliac fossa, as I was informed by the experienced family physician. Lately there was considerable fever and pain again. In the right iliac fossa marked rigidity, resistance, and dulness developed. When I saw the patient three days after the onset of the last attack, I found the whole right side the seat of extensive but still circumscribed peritonitis. Neither the history nor the clinical symptoms pointed to the presence of biliary disturbance. I agreed with

Fig. 6.—Siphon drainage of gallbladder.

the family physician in regard to the diagnosis appendicitis followed by peritonitis and opened the abdomen by an incision in the appendicular region. There I found a large inflamed gallbladder filled with numerous calculi and seropus, which reached down below the cæcum. A portion of the gallbladder adhered to the latter. The lower margin of the liver was situated four inches below the rib arch. After the adhesions were divided the liver rose up to the extent of an inch. I can explain this extraordinary phenomenon by the previous attacks of the assumed appendicitis, which, in fact, were inflammatory processes in the gallbladder, causing considerable enlargement of the latter so that it reached the cæcal region. There peritonitic adhesions formed which held the fundus down after the acute swelling had subsided. Thus artificial hepatoptosis was produced. Perhaps there was some ptosis present before. The patient left the hospital two weeks after the operation. The low incision line is illustrated by Fig. 6.

But the diagnosis of cholelithiasis alone does not settle the question. Judging from the symptoms it must be clear to us what the indications are, so that we can answer the question, Shall we operate or will the medical treatment alone lead to total, partial or temporary, palliative, cure? Hic Rhodus.

Our guide in the first instance is the behavior of the gallstones. Naturally this cannot be measured by set rules. They may just as well remain in quiescent state during lifetime without having given their possessor cause for complaint. If he or she dies and no post mortem is made, then the subject carries this secret, never known to him, to the grave. The only symptoms which the patient noticed and which he never thought worthy of attention might have been dyspeptic disturbances. These were explained to him, intra vitam, as caused by obstipation. The causes for this quiescent state of these concrements we might perhaps imagine by premonition. However, it might be the case that the stones cause most violent attacks. These can appear in a typical manner countless numbers of times and then fade away into the latent stage, so that the patient feels perfectly well during the interim. In another class of cases severe infectious conditions arise. These may lead to exitus unless timely surgical assistance affords relief.

The special desert of Naunyn is his differentiation between a regular and an irregular cholelithiasis. He classifies the first amongst those forms of procedure which do not complicate themselves with noteworthy signs of inflammation. The irregular cholelithiasis he regards as a condition which manifests itself by the additional appearance of inflammatory signs. A distinct differentiation of these two forms, I think, presents the key for the understanding of the indications. In other words, it decides the question as to whether the surgical or medical therapy shall exert its powers.

Without doubt painful contractions of the gallbladder express the endeavor of Nature to expel the stones. These contractions, which are brought into being by the simple irritation of foreign bodies, are known as a colic. Thus we have to deal with a contraction similar to that of labor. As soon as the corpus delicti is expelled, the disease and the pain ceases. In simple nephrolithiasis we have a similar case, so long as the urine is clear. The efferent passages, as Ehret and Stolz (*Mitteilungen aus den Grenzgebieten des Medizin und Chirurgie*, vii, part 10) have shown, are more elastic. According to these authors, stones of the size of a walnut, and even larger, can pass through the duct. If the stone is thus expelled per vias naturales, then we justly speak of a successful attack. If the attack was only partially successful, *i. e.*, if, as is generally the case, other stones remain behind, then the patient at least experiences temporary or palliative relief.

However, in those cases in which an infection exists, the symptoms are very severe. What appears to be the most important point is the fact that even though the attack, *i. e.*, the colicky pains, have passed by, the sphere of the gallblad-

Fig. 7.—Line of incision for cholecystostomy.

der still remains sensitive. What we have to deal with, then, is the added presence of a more or less severe process of inflammation. If during one of these attacks the concrement becomes jammed in the cystic duct in such a manner that it stays there, then we have the appearance of hydrops of the gallbladder. That is, the latter is cut out of the circulation of the bile and emits its own secretion, with which it gradually becomes filled. As such, the condition is not a fatal one, but it may eventually produce such pressure symptoms that surgical aid becomes indicated.

To all of these conditions an infection may become added. We have already pointed to the fact that the presence of stones in the gallbladder creates a fertile soil for the bacterium. The cracks and corners are just suited to that purpose. If the carriers of the infection, therefore, which have passed from the gut have been successful, then we have to deal with the irregular cholelithiasis.

The consequences of this type cannot be foreshadowed. An acute empyema as well as a chronic ulceration may result. The inflammatory process may continue to the peritonæum, may localize there, and cause adhesions with the gut, stomach, and pancreas, or similar to appendicitis, or it may cause perforation or gangrene. If an operation is not speedily performed the result will be a fatal one. Even though the immediate danger to life was set aside by the course of the inflammation process, still the health of the patient may be damaged by the spreading of the adhesions. For we cannot count upon a perforation which is generously protected by adhesions and leads the stone from the bladder into the gut. These occurrences are very interesting and prove how much Nature, under pressure, may be maltreated.

It is known that processes of inflammation may be active in the gallbladder without the presence of stones. It is probably a much rarer condition than supposed. In some cases stones have passed after a few successful attacks and after they have caused a few lesions. They then play the same part as a bullet after extraction. For the channel which the bullet created is left and the patient may be killed by it even weeks after. If a diagnosis of cholelithiasis based upon the former attacks is made, then one will often be surprised not to find any stones. This possibility especially should be well considered by surgeons.

After everything has been said, it must be evident that only the therapy of surgery can be the one at issue of irregular cholelithiasis. By surgical removal of the stones we do away with the immediate cause. We can drain the gallbladder and heal the ulcers. If it comes to the worst and the gallbladder shows marked pathological changes, we remove it in toto. As I have mentioned in my paper before the surgical section of the Academy of Medicine (When Shall We Operate in Cholelithiasis? *New York Medical Journal*, December 17, 1897) in October, 1897, cholecystostomy has the advantage that stones which press forward from the hepatic ducts, sometimes concrements forming there, pass into the gallbladder. They are then easily removed if one has access through a fistula.

FIG. 8.—Arrangement of field of operation, gallbladder pulled outward on the rubber, drain also ready for ectomy.

It is just as wrong to waste precious time by waiting in these dangerous conditions as it appears brutal to force an operation upon every patient suffering with cholelithiasis, or in whom gallstones have been diagnosticated. The term "early operation," as we consider it in appendicitis, is an unjust one when applied to cholelithiasis. For there are thousands of proofs that the majority of gallstone sufferers is cured by medical treatment. And a careful observer will rarely miss the moment which leads him to consult with his surgical confrère. In appendicitis this is totally different. Here the danger, and the greater one, comes instantly. Delay until the

morrow may mean life or death. Such possibilities are the exception in cholelithiasis. One is very well justified in first essaying medical treatment. Of what manner and mien then is our medical armamentarium? In the first place we must profess that the possibility still fondly nurtured in many a cranium of removing gallstones by all sorts and kinds of heaven blessed means must be disputed. By that we do not deny the possibility of partially dissolving cholesterin stones. They are *soluble only in the bile itself* and not in any media introduced into the body from without. Here again we recognize the value of the postulate to accelerate the flow of bile as much as possible. Stagnation here, as well as there, is of evil.

It has also been noticed that under the influence of bacteria some stones become partially dissolved. Thus the same potent factor which has bred the evil may, in a sense, become a benefactor. If we only had knowledge of more tangible facts, then we might be able to smuggle certain bacterial types into the body and inaugurate a sort of litholysis.

Until then the main indication will be to remove the stones by mechanical means. Then, too, the plentiful flow of bile is of value. Practical experience shows that by stimulation of peristalsis the flow of bile is increased. Therefore, laxatives almost always work well. A Carlsbad cure is to be most highly recommended. He who has not the means wherewith to journey and sip the Mühlbrunn at its fount may indulge in Carlsbad principles at home. Under this form of treatment I have induced many a confrère to cure a patient whom he had turned over to me as "ripe for the plucking." I favor the following diet:

Breakfast.—A fairly large cup of tea or weak coffee, with milk and sugar. A little toast or zwieback. Very hungry patients may also partake of two soft boiled eggs.

Dinner.—Fish (only such which have white, leafy meat). Instead of this boiled meat without gravy, green vegetables, mashed potatoes, and cooked fruits in moderate quantity.

Supper.—Boiled meat, mashed potatoes, and cooked plums. In addition, a cup of tea or a quarter of a pint of Moselle wine may be taken.

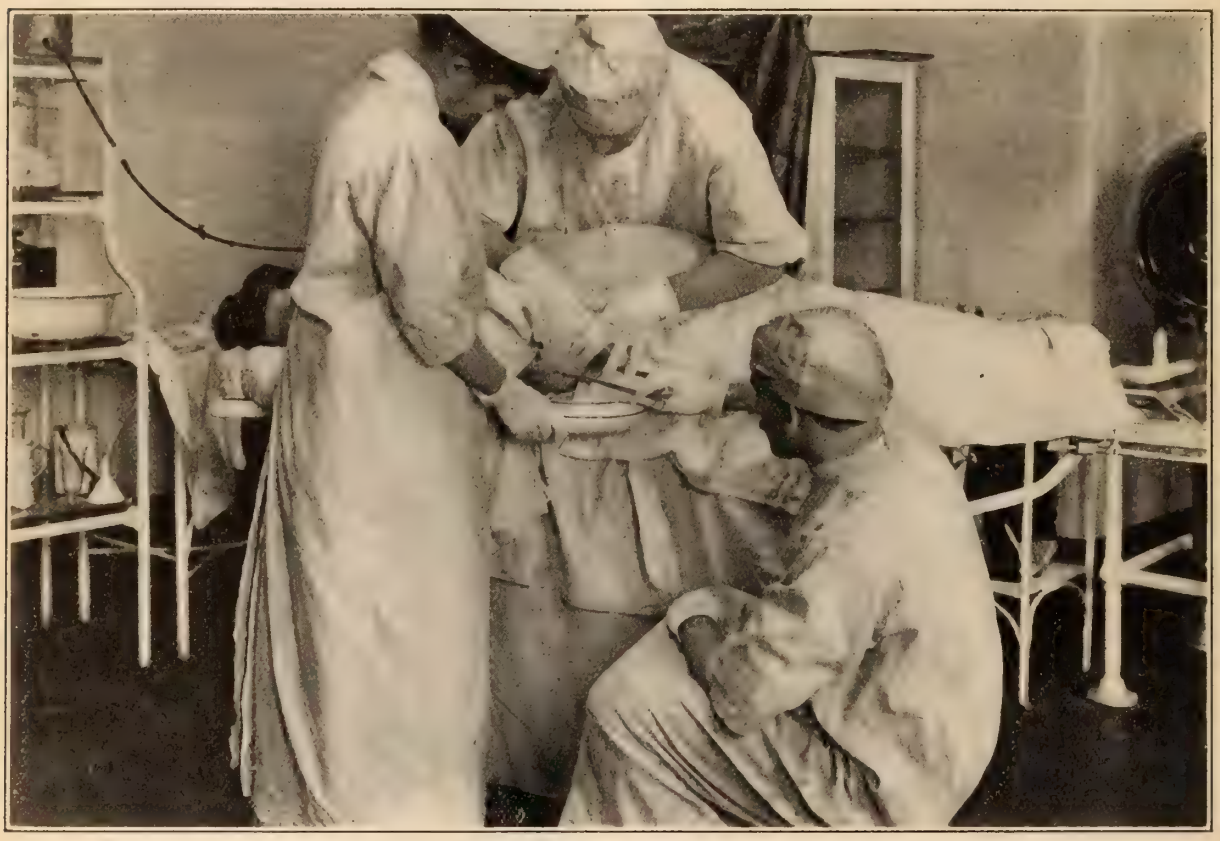

FIG. 9.—Patient in lateral abdominal position, ready for opening of the gallbladder.

In the morning, on an empty stomach, and in the evening a half an hour before supper, patient should slowly drink a large cup of Carlsbad Mühlbrunn, which must be warmed in boiling water. At bedtime patient should take a sandwich, so that the flow of bile and peristalsis is kept active during the early hours of the night. I forbid the use of beer, but let patients eat plentifully of butter, take oil enemas, and let them eat much well baked white bread. I do not order the nasty, oily drinks, although I believe that they are sometimes of value.

If the attacks always recur with renewed violence, if inflammatory symptoms of serious nature make their appearance, then surgical therapy should be called into action. Thus only will we be able to employ the correct method toward the cure of our patients. In no other domain of our alma mater medicine are we so much dependent

upon mutual collaboration. Let us advance then shoulder to shoulder and communicate our individual experience one to another so that each may learn from the other.

In regard to the technics of the operations performed upon the gallbladder, which are so well portrayed in the modern textbooks, I will constrain myself to the elucidation of a few points.

The incision, as I favor it, runs from the costal edge along the border of the rectus to about the level of the umbilicus (Fig. 7). In cholecystostomy this furnishes sufficient space. If it is necessary to go further an incision running laterally and parallel to the arch of the ribs, so that the flap can be everted, is sufficient. The line of incision is painted with tincture of iodine before the knife severs the tissues. Immediately after the incision a split compress is placed over the wound and fastened at the edges by means of my wound clamps. The same style of clamp, only larger is used by me for fixing the edges of the peritonæum. This is the best method of avoiding infection from skin bacteria. It is also advisable to exchange knives after the cutaneous cut.

The fundus of the gallbladder is pulled up and then I pass two thin silk sutures through the wall of the gallbladder (Fig. 8). Of course we must carefully avoid penetrating the bladder wall, for as shown above, we must regard the contents of the gallbladder in cholelithiasis as infected. Thus, one of the indications is to prevent contact between the contents of the gallbladder and the abdominal cavity. I think this is most easily avoided by choosing the lateral abdominal position while incising the bladder. The patient is turned so much to the side that he is practically lying on his stomach. The two silk sutures control the movements of the bladder. By using slight traction on them we are able to bring the fundus still further forward. It is surrounded by compresses, which are tightly packed around it. The contents of the gallbladder are then aspirated if possible between the two manipulation sutures. While thus manipulating, the operator sits upon a foot stool (Fig. 9).

As soon as the bile is totally aspirated, I nick the bladder wall with the point of the knife. The margins of the wound are held apart by the sutures, the cavity is thoroughly irrigated, and a long rubber drainage tube, wrapped in three per cent. iodoform gauze, is placed in the bladder. The small incision is closed up with fine silk. The drain is fixed to the wall of the bladder with fine catgut. The manipulation sutures are now removed and the projecting drainage tube is used as a guide.

All these procedures are carried on while the patient lies in the dorsal position, for the drainage tube now carries the bile downward. Naturally much value is attached to the thorough exploration of the ductus choledochus communis, which might have to be opened if occluded by a stone. For this reason alone might it be advisable to employ large incisions. The drain is then led into a bottle filled with a bichloride solution (Fig. 6).

These principles can also be made use of in cholecystectomy (Fig. 8). One will seek to gain more room by the additional transverse cut, mentioned before. We start the enucleation of the bladder at the fundus, and take great care not to injure its walls before we have isolated it. If the unexpected should happen, nevertheless, then we must pack the bladder thoroughly with gauze and approximate the margins of the wound over it. Proceeding step by step and exerting gentle traction on the neighboring structures we reach the cystic artery, clamp it. and ligate it with medium sized silk. The bladder is exsected just below the ligated cystic duct. The stump is wound with fine silk. If possible, we excise circular areas of mucous membrane so that we have clean wound surfaces for approximation. I have described this procedure in my operation for appendicitis (Appendicitis, *Volkmann'sche Sammlung klinischer Vorträge*, September, 1898). I insert a tampon of three per cent. iodoform gauze, about as thick as a finger, into the operative field.

In recent years several surgeons have endeavored to recommend ectomy as the normal procedure in cholelithiasis. I must admit that I cannot see the reasons for such radical measures in the majority of operative cases. The inflammatory process of the mucous membrane of the gallbladder quickly heals while drainage is carried on. We also have the advantage, as mentioned before, that stones which pass from the hepatic ducts can still be extracted. In addition ectomy carries with it greater danger to the life of the patient. Beneficially, as it acts in selected cases, it ought not to be exalted to the normal operation.

In a large number of gallstone operations I have only exceptionally been moved to extirpate the bladder. I have not had cause to rue it. From a report which I received a short time ago through the courtesy of Dr. William H. Mayo, known as one of the most radical American surgeons, I learn that in 319 gallstone operations he performed cystostomy 251 times and ectomy sixty-eight times. Some few others of our surgeons make it a rule to sacrifice the bladder, a practice which my experience leads me to condemn. Perhaps here we shall also learn that the golden medium will prove to be the beacon light. As to the implication with acute pancreatic inflammations I refer to my previous publication on this subject in the *Medical News*, August, 1905.

37 East Thirty-first Street.

REPORT OF A CASE OF SACROTERATOMA.

By Samuel Leopold, M. D.,
Philadelphia,
and
Lorenzo B. Phillips, M. D.,
Inwood, N. Y.
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The literature covering the subject of teratology is rich in both specimens and theories. The classifications of teratoma are as numerous as the various tumors found. It will suffice for us to accept the classification of von Bergmann based upon anatomical and embryological features. Teratomata may be divided into dermoids, mixed tumors, and parasitic

FIG. 1.—Gross appearance of the teratoma.

or fœtal inclusions. As to the origin of these fœtal growths there is much speculation, and as yet we must depend upon theory, until the obscure points are more thoroughly understood.

Pathologists and embryologists are for the most part agreed that teratomata may arise from local disturbances of development, due to separation or misplacement of tissue anlage, known as monogerminal tissue implantation. Thus the hairy polyp of the throat and mouth cavities and the solid teratoma at the base of the skull may be explained as inclusions of ectoderm anlage. The presence of teratoid tumors in the cervix and vagina are probably due to inclusions of myotome and to malformations of the Wolffian duct. Wilms believes those of the kidney are due to proliferation of the remains of the Wolffian body. Those of the lumbosacral region, according to Middledorf, Ristchl, and Nasse, are due to proliferation of the remains of the neurenteric canal, hind gut, and medullary canal, in association with ectodermal and mesodermal inclusions. There is, however, another possibility of origin for these tumors. They may arise from a rudimentary twin, known as bigerminal implantation. This view is held by Virchow, Ahlfeld, Hennig, and others. Such an explanation receives support when the teratoma in question contains fully developed or rudimentary organs, or body parts, or tissue formations which cannot be explained by misplacement of the tissue of a single fœtus. Most of the complex teratomata at the base of the skull and in the sacral region are regarded by the majority of investigators as bigerminal implantations. In those cases in which partly or fully developed extremities or organs are within the tumor mass the diagnosis is clearer, but in the case of a more rudimentary development of tissues which are not arranged in an orderly manner it is not always possible to distinguish. Such a one is the specimen which is here presented. The various tissues are not arranged in any significant fashion, nor are they sufficiently developed to show any typical organ structure. The fact of finding tissue from many portions of the body, such as lung, digestive tract, retinal pigment, glandular tissue, together with numerous other tissues found throughout the body does not indicate a fœtal inclusion, but rather the misdevelopment of tissue anlage in the region of the hind gut, from which apparently this tumor is developed. With regard to the origin of these fœtal inclusions one other view of the embryologists should be called to our attention; namely, the fertilization of the extruded polar body from which the partial abortive productions may result.

Clinically, very little is known of this case. Mother, sixteen years of age, was a primipara, the pregnancy being illegitimate. Labor was normal, and the puerperium uncomplicated. The woman was attended by Dr. Phillips, who sent the specimen to the laboratory.

Grossly, the tumor is found to spring from the sacrum or coccyx; the anus and genitalia are anterior to the region of this growth. The mass is firm in places, soft in other areas, and presents itself as a rather irregular, nodular structure, measuring 14 c.m. wide by 7 c.m. long. Bone is scattered throughout, as was demonstrated when cutting sections for the microscope. The external covering of the tumor is the skin of the fœtus from which this mass arises.

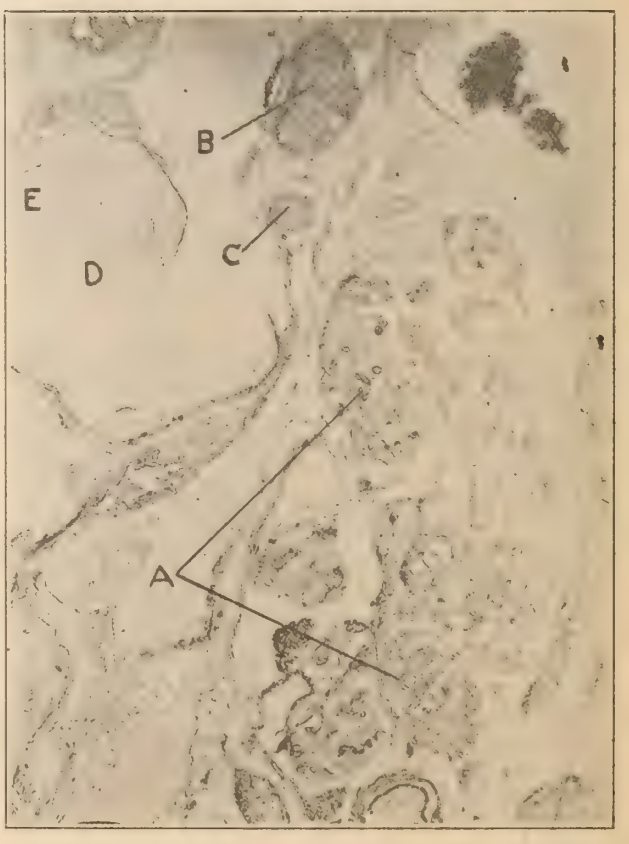

FIG. 2.—Low power of portion of growth, showing: A, tissue of type of mammary gland; B, lymphoid nodule; C, cartilage; D lumen of bronchus like space; E, cuboidal epithelial lining of last.

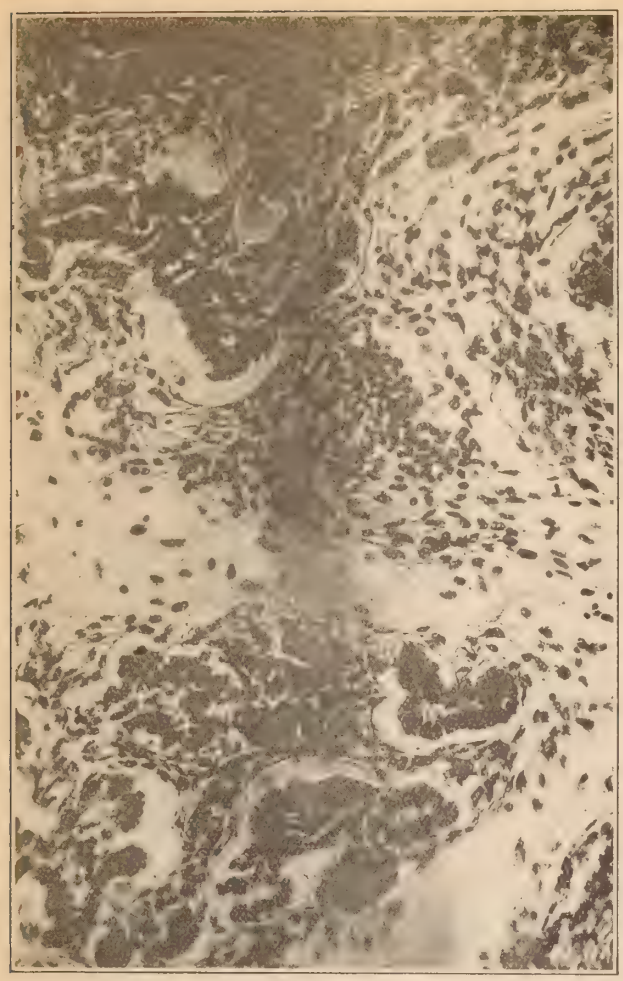

Fig. 3.—High power of glandular area (A of Fig. 2), showing the irregularities suggesting a cancerous type.

Microscopically, the outer surface is made up of thin dermal lining, showing the flattened, transitional epithelial cells seen in epidermal tissue. Beneath the epidermal lining are noted several small ducts, and in one area sebaceous glands, the cells containing tiny fat droplets and granules. The tissue immediately underlying this outer covering is of a less reticular character, consisting of fibrous tissue, elastica, numerous thin walled bloodvessels, and smooth muscle fibres. Beneath this area one notes a still looser reticular structure made up for the most part of myxomatous tissue, large blood sinuses filled with red blood cells; and many lymphocytes are scattered throughout this area, giving it in several locations an angeiomatous character. These large blood sinuses are seen throughout the entire section. The middle third of the section shows in its centre a long narrow strip of cartilage of the hyaline variety surrounding which is a layer of connective tissue of the embryonic type. Contiguous to this cartilage are several muscle bundles, and just beyond a large ganglion containing many large ganglion cells. (Fig. 4-A.) The cartilage in this area shows no calcification, but in other portions of the section where cartilage is found evidences of calcification are noted. The remaining portions of the section, besides containing these tissues already described, show several other types; a group of cells in one part resembling glandular structure is to be noted (Fig. 2-A); another structure lying close by shows somewhat the appearance of a bronchus with low (Fig. 2-D); cuboidal celled (Fig. 2-E) inner lining, surrounded by a layer of fibrous tissue together with several cartilaginous areas (Fig. 2-C). Contiguous to this is noted a glandular mass resembling mammary tissue (Fig. 2-A). In one portion of this area are noted irregularly grouped acini surrounded by no definite capsule, the acini surrounded by connective tissue of the embryonic type. A mass resembling an adenoma, and in some places where the cells are apparently spreading beyond their normal boundaries, and in other areas where the cells seem to have penetrated the surrounding connective tissue areas, the possibility of a carcinomatous change is suggested (Fig. 3). In other sections of this tumor besides fat, muscle, fibrous tissue, and the various structures described, considerable lymphoid structure is found in places resembling adenoid tissue (Fig. 2-B), in other areas suggesting the possibility of sarcoma. Many tubules lined with columnar epithelium are scattered throughout, sometimes in irregular groups, in other instances singly.

Fig. 4.—Showing numerous ganglionic nerve cells.

1632 Franklin Street.

DEEP BREATHING AS A THERAPEUTICAL AND PREVENTIVE MEASURE IN CERTAIN DISEASES OF THE LUNGS.*

By John H. Pryor, M. D.,
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The failure to appreciate the importance of deep breathing as a therapeutical measure of the first magnitude, the slight attention devoted to its efficacy in the textbooks, and the neglect to employ a simple, scientific agency, which often promises more benefit than all other remedial methods known, must constitute the excuse for an endeavor to attract renewed attention to this theme.

The necessity for oxygenation is a well known physiological fact, but its therapeutical value seems at times to be almost forgotten. Oxygen is administered heroically in an emergency, but its use in a

* Read before the American Climatological Association, May 12, 1906.

natural way is sometimes disregarded, when the system may be gradually starving for its daily food.

The purpose of this paper will not allow a consideration of the multiple forms of malnutrition characterized by that complex group of symptoms ascribed to neurasthenia, toxæmia, indigestion, anæmia, gout, etc. We know that insufficient oxidation is a prime causative factor in these conditions, but an attempt to increase the respiratory function is seldom advised or directed. Iron, arsenic, and other drugs are administered to patients who never enjoy a long breath. Many women have never learned how to breathe, and the man who has relinquished vigorous exercise seldom fills his lungs to the full capacity unless a life insurance examiner desires to obtain full chest expansion.

Very frequently breathing becomes a partial or incomplete function after childhood. Enough air is admitted to support life in a sedentary way, but thorough ventilation becomes a rare experience. Sometimes the individual shows a decided disinclination to use any effort in breathing, and in many instances the attempt is accompanied by exhaustion, sweating, dizziness, and cardiac palpitation. This is particularly true of the obese or chlorotic types. When respiratory exercises are employed for any purpose, it must be remembered that the result upon general nutrition and the interdependence of many functions is a factor to be included in the amelioration of morbid conditions.

In considering the effects of deep breathing in affections of the lung and pleura, they may be classified as developmental, preventive, and remedial. The first group will include small and deformed chests, with insufficient or restricted respiratory capacity. The deformities due to rickets and spinal curvatures are often susceptible of great improvement by combined exercise of the lungs and special gymnastics. The neglect of the little growing patient is sometimes quite pathetic and inexcusable, as deformities can often be decidedly modified and future incapacity or predisposition to disease largely overcome.

Under the head of preventive disturbances or conditions those demanding special mention at this time are the results of acute or chronic disease of the lung and pleura. I refer to prolonged or delayed consolidation, incomplete resolution, and imperfect restoration of function accompanying or following pneumonia; partial consolidation, collapse, or carnification of the lung, associated with or resulting from pleurisy with effusion; bronchiectasis and fettering pleuritic adhesions. The frequency of atypical pneumonia seems to have increased decidedly in recent years, possibly due to the prevalence of influenza, grippe, and mixed infection; delayed resolution and lasting consolidation are only too common, and are frequently overlooked or attributed to slow recovery. They must be recognized as a phase of the disease and not as a natural effect. The facts cannot be emphasized too strongly that recovery is not complete, and no case should be dismissed until conditions which cripple the lung, cause chronic invalidism, and endanger the welfare of the patient, have vanished. Resolution may be delayed days, months, or years. It is difficult to decide when the incomplete resolution has become permanent, and the verdict should not be hasty. Consolidation with adhesions are allowed to remain unmolested without any radical, persistent attempt to modify or remove them, and thus avoid loss of function. The respiratory capacity is diminished, the play of the lung limited, ventilation is inadequate, and chronic changes occur in the form of interstitial proliferation, bronchiectasis, phthisis, and collapse. Symptoms appear sooner or later after the attack of pneumonia, and the patient complains of shortness of breath, dyspnœa upon exertion, palpitation of the heart, weariness, and pain, often of a dragging character, over the affected side, occasionally increased by deep inspirations. This pain is increased in sitting posture and is often referred to as backache or sideache. Quite often it is more pronounced in cold weather. Occasionally neuralgia of the intercostal or subscapular nerves is a symptom of continued discomfort. Efforts should be made to eradicate this condition before irreparable harm has been done.

While fully recognizing the necessity for constitutional treatment, it is not promptly effective unless the lung is urged to resume its work. It is regarded as poor practice to allow a joint to become ankylosed from nonuse. If we could handle a consolidated piece of lung tissue, shackled by fresh adhesions, we would squeeze the mass to expel exudate, force air into collapsed vesicles, establish motion by stretching or tearing adhesions, and in a word, use massage. Absorption is promoted and expulsion by expectoration is facilitated, the lymphatics are stimulated and normal circulation encouraged. The forcible expiratory act and the cough are our only means of direct drainage. If the cough is persistent and accomplishes nothing, the nose and throat should be examined. As a rule the greatest deformities and loss of function follow continued pressure from effusion in the pleural cavity. This is sometimes unavoidable, but there can be no doubt that unnecessary damage is done by neglecting to remove fluid before great distension and pressure occur, and by failing to procure expansion of the collapsed lung while possible. Compensatory curvature and retraction of the ribs are permitted to fill a vacuum when vigorous and systematic efforts might prevent deformity and its results. The facts that adhesions will form after pleurisy with effusion, and that they may be salutary, do not justify allowing the healing process to produce immobility and chronic contraction. It is extremely interesting to observe the return of the breath sounds and the gradual disappearance of the friction rub when respiratory exercise is successful.

Any part of the lung structure which can be made pervious to air is a distinct gain, and it is very important also, as a matter of relief and compensation, to increase the capacity of the unaffected lung, which is called upon for extra work. Life dependent upon a partially crippled lung is apt to be very irksome, and the respiratory power can be enhanced to a remerkable degree by securing supplemental development and activity. When intractable, perplexing cases are met the customary advice may be a change of climate. Of course the benefits of a change of scene, environment, and habits are not to be underestimated, but the essential requisites are an atmosphere which will allow out of door life and the free use of pure air. The patient

should be taught that the chief reason for a change of climate is to be found in the opportunity to carry out proper instructions. Most invalids are inclined to restricted or partial breathing, and a person with a crippled lung is very apt to complain of difficulty in forced respiration and shrink from exertion which demands an effort and some discomfort. I have repeatedly seen cases where consolidation or collapse with adhesions had existed for weeks and months greatly relieved and restored to health by forcible breathing, properly practised; and it is questionable if the trial is not worth while, no matter how chronic or serious the condition may appear. By the employment of deep breathing we may obtain benefits summarized as follows:

Increased oxygenation, improved nutrition, changes of a mechanical nature, ventilation, and disinfection, massage of the lung and pleura, and drainage. In subacute, obstinate bronchitis, not dependent upon disease of the nose or throat, no other method of treatment is so successful. Such cases will improve rapidly, provided cough mixtures are discarded, and the patient allowed to breathe fresh air in abundance.

In atypical, protracted cases of pneumonia the physician's efforts to secure or hasten recovery are often unavailing, physical resistance seems lacking, and reinfection and invasion of new territory continue, while persistent fever and consolidation linger in an unexpected and perplexing manner. There are times when forcible action of the affected lung for definite periods each day will be more strikingly successful than all other methods of treatment combined. The victims of slow pneumonia or subacute bronchitis are often kept too long indoors, and fresh air carefully avoided. Mental and physical apathy are occasionally due to this prevalent practice, and breathing in the open air is what the system demands. Undoubtedly there may be reasons why placing the patient in the open air may be considered unwise, even in these days when open air treatment for many ailments is becoming a beneficent craze. Under such circumstances a tin tube connecting with the outer air may be used at the bedside, and inhalations practised.

Recently it has become the fashion to interdict forcible breathing in those afflicted with pulmonary tuberculosis. The chief reasons for this action seem to be the dangers from infection of new territory and the inciting of hæmorrhage, caused by congestion or the rupture of weak blood vessels. During an acute, active process of tuberculous character the established conviction that rest of the diseased lung promotes recovery seems to have indubitable clinical verification. As the result of some observation, however, I believe the dangers from infection and hæmorrhage are greatly exaggerated. At the same time I doubt that any lasting benefit is to be derived, as a rule, in acute or advanced cases by increased activity of the diseased lung. Deep breathing exercise should be employed with the greatest care in these conditions; but I wish to emphasize distinctly a disagreement with the apparently false doctrine that this practice should be discouraged or prohibited entirely, or for unnecessarily long periods in the incipient or fibroid forms. When the evidence of an acute process or progressive lesion, as portrayed by the local signs and general symptoms, has disappeared, there seems to be no good reason why the affected and healing portion of the lung should not be fully aerated. We send patients to certain regions believed to be especially beneficial, and depend to an unknown extent upon the remedial influence of pure air. Is it not somewhat inconsistent to cautiously limit the supply of the curative agent for long, indefinite periods? No satisfactory proof exists to demonstrate that exercise of the affected area at the proper time delays formation of a cicatrix. In the absence of facts observers are entitled to an opinion, and better ultimate results are often obtained when the lung is made to perform its function and judicious general exercise is allowed.

The early recognition of pulmonary tuberculosis, and the care of the incipient case will result in a change of some accepted methods of treatment, which have been quite dogmatic, and it will gradually become apparent that incipient and advanced types constitute two widely different clinical problems.

At the New York State Hospital for Incipient Tuberculosis all patients who exhibited a normal temperature and pulse and the physical signs of quiescent disease were given daily respiratory exercises. In no instance was the result in any degree disastrous. The average expansion of all patients when they entered the hospital was two inches, and the respiratory capacity was almost invariably below the standard usually required. The almost universal testimony of the patients was that they had never been taught to breathe, and that the effort gave them a sense of well being and increased the appetite. Some of the number, especially women, complained of feeling tired or dizzy after five or ten full breaths. The practice was supervised by a physician, and much patience and persistence was required in individual cases to secure more than the most superficial, feeble, and lackadaisical effort.

During the last year several able clinicians in Europe have been answering the question do sanatoria for consumptives pay? in the negative. Apparently the claims of "recoveries" and "arrests" have not been verified at home, or the results have proved disappointingly ephemeral. A search for the cause underlying this increasing pessimism, both in Europe and this country, might reveal one worthy of consideration. I refer to the fat, flabby, indolent, short-breathed patients discharged from sanatoria. A skeptical friend describes the chests of such individuals as "damaged accordions." The importance of a great gain in weight has been most unfortunately and thoughtlessly exaggerated, and the consumptive may be classified as an "apparent recovery," while he has become an imposing, deceptive, immobile mass of fatty cells.

Graduated exercise should be a part of the treatment, followed by work tests and the heart's action, and the respiratory function made capable of supporting the necessary struggle for a livelihood.

Probably one of the chief reasons why high altitudes have proved beneficial is to be found in the compulsory increase of respiratory activities. Unquestionably the departure inaugurated at Nordrach from the ironclad prolonged rest cure will lead to reform and invite one to reflect upon the homely

wisdom of Moxon's remark: "It is as important to know what kind of a patient the disease has got, as to know what kind of a disease the patient has got."

When tuberculosis is associated with fibroid changes and pleuritic thickening vigorous exercise of the lungs may lessen the developing or existing loss of function and increase compensatory or vicarious activity, which may mean so much to the distressed victim. The usually long duration of the disease forms an appeal to make existence as useful and free from limitations as possible. This statement would not apply to cases having the history of recent hæmorrhages, or those in which cavities exist, and aneurysm of the blood vessels may be suspected.

Finally, breathing exercises must be taught and watched to be effective, otherwise the effort will be feeble and not systematic. Very often the practice must be made a form of hard work, performed several times a day. The lungs should be filled from bottom to top, and too much stress can not be laid upon the necessity for as complete an expulsion of air as instruction, insistence, and intelligent attempts will permit. Observation will reveal the fact that proper expiratory effort is far more difficult to obtain than the full inspiration. The object to be attained is increase of the tidal and supplemental, and a decrease of the residual air. In many affections of the lungs secretions or exudate collects in the bronchial tube and can only be expelled by forced expectoration or cough. It is pushed and squeezed along to a point where it can be raised. The annoying wheezing or rattling so frequently a source of complaint among sufferers from bronchitis or tuberculosis is many times promptly relieved by determined attempts to expel the residual air. If coughing is produced by deep breathing it is usually beneficial and assists in distending unused lung tissue, stretching or tearing adhesions and dislodging secretion. At first the patient should *be compelled to breathe in and out* forcibly five or ten times, and repeat this two or three times a day. The clothing should be loose to allow free action, and certain motions such as raising and dropping the arms are helpful in bringing into play the voluntary muscles. In the course of a few days the duration of the exercise may be lengthened and its frequency increased. Sometimes a device such as a tube or inhaler may hold the patient's attention and insure cooperation. The results attributed to various inhalations are probably largely due to the attendant respiratory exertion. In estimating the degree of progress attained the change in the physical signs should be considered more important than an increase in measurements.

No attempt has been made to present the technicalities of this subject, such as pneumatic differentiation and its wider application in other conditions. Perhaps zealous advocates were occasionally extravagant in describing the efficicacy of the pneumatic cabinet. However that may be, one familiar with its employment must sincerely regret the tendency to unappreciate or disregard the best method we possess for administering ærotherapy. When the patient can go to the physician's office the cabinet furnishes the means for a scientific, mechanical procedure which yields results far superior, or impossible of attainment by other measures. The inspiratory or expiratory effort may be made difficult or easy, and graduated in reference to time and amount of exertion. The amount of atmospheric pressure upon the chest wall may be modified, and the peripheral and pulmonic circulation somewhat controlled. As a rule the treatment can be given but once a day and should often be supplemented by instruction to practice at home with the open window, or preferably in the open air. The supposed deleterious effects of deep breathing for a short time through the mouth and the imaginary danger of not allowing the nostrils to warm the air have been greatly exaggerated. Physical exercises to be used in conjunction with deep breathing are described by several authors. The patient may take a deep, slow breath while walking and count ten or more during inspiration and expiration.

I purposely refrain from discussing exercises which produce rapid breathing, but a final hint may be of some value, viz., strenuous general exercise which increases the heart's action and the depth and frequency of respiration may in many conditions prove quite harmful or hazardous.

My remarks have been limited to a simple and very important theraupetical measure much neglected, and a reference to methods which are safe and applicable in the class of cases mentioned.

26 LINWOOD AVENUE.

THE DIAGNOSIS OF GASTRIC ULCER.

BY HARRIS WEINSTEIN, M. D.,
New York.

The diagnosis of gastric ulcer should present no difficulties, as the symptoms are few and characteristic. Nevertheless, these cases are frequently not diagnosticated at a stage when treatment may be effective. The importance of early and proper treatment of ulcer is well recognized, and I may state without fear of contradiction, that by far the greatest number of cases are curable. Favorable as the results are under early treatment, quite as deplorable are they if the cases are neglected and the ulcer is allowed to run its own course.

The acute ulcer has a tendency to extend in depth toward the serous covering of the stomach without any inflammatory reaction, and it will heal without leaving behind a scar large enough to affect the functions of the stomach. If the ulcer is allowed to run along without treatment being instituted, we get one of the following results:

1. Severe hæmorrhage by rupture of a vessel in the stomach wall.

2. The serosa becoming involved in the ulcerative process may rupture, or, if adhesions to neighboring organs are present, an encapsulated abscess will ensue.

3. Frequently the ulcer extends both laterally and in depth, presenting a funnel-shaped, terraced appearance, and it may attain the size of the palm of the hand.

Gastric hæmorrhage cannot always be prevented, for there are cases where a small and recent ulceration will give rise to severe hæmorrhages without any other manifestations of the disease. But these cases are rare and it is, as a rule, the deep ulcers that cause hæmorrhages.

A gastric hæmorrhage may or may not end fatally. Rupture of the stomach and subphrenic abscess are extremely dangerous complications. Chronic ulcer probably never heals completely. If cicatrization of a large ulcerated surface does take place, the contraction of the cicatrix deforms the stomach and seriously interferes with its motor and secretory functions.

From the foregoing it is evident that the healing of a chronic ulcer is by no means a satisfactory cure. If the ulcer is located at the pylorus cicatrization results in more or less complete closure of the pyloric orifice and consequent dilatation of the stomach. But even in other parts of the stomach a large cicatrix retracts the mucosa and causes atrophy of the glandular elements and insufficiency of the motor function, and the patient becomes an invalid for life.

Surgical intervention is the only logical procedure in these conditions, but unfortunately the results of gastroenterostomies are not so brilliant as we have been led to believe. Sooner or later a jejunal ulcer develops that ultimately leads to death.

In view of these dire results from neglected ulcer, it behooves us to bend all our energies toward making an early diagnosis of this condition, and to lend my aid toward its accomplishment is the aim of this article.

In the diagnosis of gastric ulcer we must keep in mind the facts that its development is very slow and that there are no other symptoms in the beginning beyond painful pressure after a large meal. As the disease progresses the same painful pressure and discomfort in the epigastrium come on after the ingestion of light food, and the patients resort to liquid diet as the only food, after taking which they experience no pain.

At this stage careful inquiry will disclose the fact that the pain in the epigastrium or back appears or, if constant, is aggravated after a meal. Physical examination will elicit an epigastric or dorsal pain point or both. If in addition to the foregoing which, by the way, are the most reliable symptoms of ulcer, there are evidences of hyperacidity as expressed in acid eructations, vomiting of sour material, headaches, and constipation, then we may safely conclude that the case before us is one of ulcer, and we should lose no time in instituting appropriate treatment. It is not necessary to wait for hæmatemesis to confirm the diagnosis, and we may rest assured that sooner or later this positive symptom will appear if we but wait for it. Hæmatemesis occurs in about one third of the cases of ulcer, but it is almost always a late symptom and therefore preventable. Absence of hæmorrhage is usually the cause of failure to diagnosticate ulcer, and I cannot but repeat that hæmorrhage is by no means a *sine qua non.* It is far better that this symptom be entirely left out of consideration in the diagnosis of peptic ulcer.

There is a train of symptoms in young anæmic girls suggestive of hyperchlorhydria, which may be taken for the preulcerative stage. It has been my experience that in these cases, sooner or later there develops either an ulcer or a fissure at the pylorus, followed by pylorospasmus and a mild degree of atony.

These patients I am in the habit of treating for ulcer, and I have found the results most satisfactory. The few weeks of undernutrition that the treatment for ulcer entails are not productive of any harm, while the patient is spared by these means untold suffering in the future.

841 Lexington Avenue.

THE CURE OF TUBERCULOSIS OF THE JOINTS, WITH REPORT OF CASES.*

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The objects of this paper are to demonstrate the curability of joint tuberculosis, and to plead for the correct principles of the treatment of this form of tuberculosis.

The curability of the disease is evidenced by the report of the cases included in this paper. Several of these cases were treated, previous to my attendance upon them, in the Children's Hospital and in other Boston institutions, and the diagnosis is a matter of record in their clinics. Most of the cases were chronic. The result reached in each individual's case shows that, with the treatment described carried out, joint tuberculosis in the young is a disease for which a good prognosis can be safely given.

The correct principles of treatment for joint tuberculosis may be stated in a very few words: (1) Fixation of the joint; (2) protection of the joint from weight bearing; and (3) good constitutional treatment.

The various ways by which joint fixation and the manner in which protection from weight bearing was obtained are given in the case reports below.

Good constitutional treatment consists in bringing each patient's bodily condition to the highest possible point by the use of nourishing food, plenty of fresh air and sunshine, and medicine, when clear indications for it exist. In a paper read by me before the American Medical Association, at its annual meeting, held in 1900 at Atlantic City, and in a paper published in *Pædiatrics*, stress was laid upon this constitutional treatment. It is a pleasure to note that since then my observations in regard to the value of constitutional treatment in surgical tuberculosis have been later verified by Burrill, Bradford, Goldthwait, and others of Boston. So much for what clinical experience demonstrates the essentials of treatment for joint tuberculosis.

Traction is still held by some orthopædists to be of value in the treatment of joint tuberculosis. The orthopædists who believe in traction for tuberculous hip joints never use it for tuberculosis of the knee joint, of the wrist joints, of the metatarsal joints, of the spine, nor of the iliosacral joints—yet these cases are treated by them without traction and get well without it. What is there so peculiar in tuberculosis of the hip joint that it alone necessitates traction for its treatment? Bradford, an advocate of traction in the treatment of tuberculous hip joint disease, has

* Read before the South Boston Medical Society, March 20, 1906.

shown by x ray pictures that with this treatment the joint is actually divulsed. The addition of divulsion—the pathological condition of partial dislocation to an already pathological condition, tuberculous disease of the joint—seems to the writer a contraindication for its use. There is a place for traction in the treatment of hip joint disease. Enough simply to reduce the deformity caused by reflex muscular action in incipient cases, and not enough to cause divulsion of the joint, and only continued until the limb is straightened—a few weeks at most—when a fixation splint should be applied. But this is a very different thing from the traction alluded to. Other pathological conditions produced by long continued traction of the thigh bone are elongation of the leg with paralysis of the gluteal and other muscles acting upon the hip joint. I am at present treating a case of tuberculous hip joint in which these pathological conditions have been produced by the traction method of treatment applied previous to my attendance upon the case. The conditions produced by leg elongation and muscle paralysis are far more difficult to cure than the original tuberculosis of the hip joint.

Report of Cases of Joint Tuberculosis.

CASE I.—Tuberculosis of the vertebral joints (Pott's disease of the spine). Lizzie S., Brooklyn, N. Y., a child of five years, with tuberculous disease of the lower dorsal and upper lumbar vertebræ. She had been treated at the Children's Hospital, Boston, for over a year, where a leather jacket had been applied. I applied a wood plastic jacket, with perforations, allowing ventilation of the skin. The wood plastic jacket was found lighter, more rigid, and more comfortable on the child than the leather one. The child was given good constitutional treatment, and constantly improved. For eight years the writer's wood plastic jackets were applied, one of which was worn for three years, a good test of the jacket's durability. Complete recovery took place in this case, with but the indication of a knuckle in the lower back to show that she had ever been afflicted with Pott's disease.

CASE II.—Tuberculosis of the spine (Pott's disease). Phillip M., Milford, Mass. A delicate and puny boy of six years, with Pott's disease of the upper lumbar vertebræ. From the age of two and a half years to three the child was noticed to have a "drooping" of the back, he could not sit upright. He was treated for kidney trouble. Then a change of doctors was made, and the child was put in a plaster of Paris jacket for ten weeks, and later another jacket was applied. No improvement being noted he was referred to the Children's Hospital, where he was treated with a steel brace for a year. Another brace was applied at the end of that time, and after a short period he was brought to me for treatment. A wood plastic jacket was applied, and worn for two years. During this period the child was brought to my office at periods varying from one to six months. Continual improvement was noted, and a second wood plastic jacket was applied and worn for about a year and a half. The diseased vertebræ had completely ankylosed without deformity. There has been no treatment for four years, and to-day the lad is active and healthy, aged fourteen years.

CASE III.—Tuberculosis of the spine (Pott's disease). Sadie W. A sickly and greatly deformed child of five years. Her mother gave the following history of her case: Three years before the time of the first visit—some considerable time after the child had suffered a fall—the child was very fretful, and a knuckle was noticed upon the spine. She was taken to the Children's Hospital, where a Bradford frame was furnished for recumbent treatment. The father of the child would not allow the frame to be used, and she had no treatment until brought to my office, fully three years after. The condition of the child was deplorable. A large hump was situated in the region of the eighth, ninth, tenth, eleventh, and twelfth dorsal vertebræ. The front of the chest, particularly the lower portion, projected considerably forward, and added to the aspect of deformity. The child could not stand, and sat in a crouching position.

For treatment it was deemed best to try the effect of gradual reduction before resorting to forcible correction of the deformity. A plaster of Paris jacket was carefully applied, with the result of producing a skin slough over the hump, necessitating the removal of the plaster jacket two weeks after its application; and the treatment of the ulcer by daily dressings for three weeks. To facilitate treatment of the ulcer a back splint was made from a piece of one half inch board, extending from the lower end of the sacrum to the child's neck. A hole was cut in the board, two and a half by three inches, so that pressure would not be made upon the summit of the hump. The splint was padded with cotton batting and covered with cotton cloth. Felt pads were attached to it so as to rest upon the lateral processes of the diseased vertebræ. These pads exerted pressure for the correction of the deformity when the splint was bandaged to the child's back. After a month, when the skin was healed, a more elaborate splint was constructed, to fulfill the main object in view, the gradual reduction of the deformity. The splint was made by cutting a piece of one half inch board in the manner already described, and attaching to it above and below two pieces of wood plastic material moulded upon the child's body; the one above moulded so as to embrace the chest, the one below moulded so as to embrace the upper pelvic bones. The splint thus became a brace, but different from the ordinary braces in the important particular that it could only be applied in one way, the right way, making it of particular value in home treatment. The splint was bandaged to the child while lying in its embrace, the bandage being carefully applied around the pelvis and the upper chest so as to make the arms of the splint firmly grasp the body, both above and below the deformity. It is easy to understand how the pressure pads correct the deformity, and how this correction is under our control. The practical value of this simple method of reducing the deformity in this case is shown by the fact that after eight weeks' treatment the child had gained seven and a half inches in length. After ten months' treatment the child could walk erect. For two years after the case was followed, improvement continuing.

CASE IV.—Tuberculosis of the spine (Pott's disease). Eddie C., of South Boston, aged eight years, had suffered from tuberculosis of the upper lumbar vertebræ for two years without treatment. He could not move about without pain, was emaciated, had very large belly, and considerable projection of the diseased vertebræ. A wood plastic jacket was applied and worn for two years, with result of diminishing the child's deformity, and together with constitutional treatment restoring him to good health.

CASE V.—Tuberculosis of the spine (Pott's disease). John W., of Everett, Mass., aged three years, suffered from incipient tuberculous disease of dorsal vertebræ. There was present awkwardness of gait, spasms of the dorsal spinal erectors on extension, and slight projection of the tenth dorsal spine. A back splint of wood plastic material was moulded upon the child, and a pad applied over the projecting spine between it and the splint, which was snugly bandaged to the child's body.

He was kept in bed, mostly on his back, for five months, with complete recovery.

The efficacy and simplicity of the treatment compares favorably with the treatment by means of the Bradford frame. The method is simpler, and the rest procured to the diseased joints by the back splint is more efficient, demonstrated easily by inspection of the methods, and also by the quicker cure resulting from the use of the back splint. The child is also more easily handled when the back splint is employed, a factor not to be slighted in the home, the more natural and humane treatment of these very young patients.

Case VI.—Tuberculosis of the hip joint. Hal M., of South Boston, aged nine years. In this case there was flexion of the hip joint caused by muscular spasm. After two weeks' traction, applied by means of weight and pulley, the patient being in bed, this deformity due to reflex muscular action, was reduced, and a wood plastic splint applied to the straightened limb. This was worn for ten months, removed at times to clean the limb and test its motions, and to note progress of cure. Then a Judson iron splint was applied, or as Judson terms it, a perineal crutch which allowed locomotion without any weight resting upon the affected hip joint. After eighteen months' treatment the cure was complete, and perfect structural and functional recovery took place. No relapse after ten years.

Case VII.—Tuberculosis of the hip joint. Frank O'H., of South Boston, aged seven years. Night cries, limitation of motions, and sensitiveness of the hip joint were present. A wood plastic splint was moulded upon the affected side, completely immobilizing the hip joint. After a month the child was about on crutches, a raised shoe on the well limb to keep the affected limb well off the ground, so that no weight was carried by the diseased joint. The splint was worn for fourteen months. The disease gradually subsided, manifested by disappearance of tenderness about the joint, and increase of motions, when tested with the splint off. Towards the end of the period of treatment the lift on the shoe of the well limb was gradually lessened and tentative trials of weight bearing on the affected joint permitted Finally the splint was removed, the crutches discarded, and after sixteen months no further treatment was required, the child remaining well. No relapse after ten years. Perfect structural and functional recovery.

Case VIII.—Tuberculosis of the hip joint. Joseph McC., of South Boston, aged five years, was three years ago attacked with tuberculosis of the left hip joint, and treated by the Children's Hospital for four months with extension and a Bradford frame. The joint was very much inflamed, and the child suffering much, manifested by night cries and emaciation. A fixation splint of wood plastic material was applied, good constitutional treatment instituted with plenty of time spent out of doors, and plenty of fresh air when indoors. Abscesses developed and opened in the nates and in the groin, but healed after six months. All tenderness has disappeared, the child is strong and healthy, and convalescence is well established. The child has been able to walk for the past six months, but will remain under observation for at least a year longer, as the case was of exceptional severity, and is complicated with an extensive adenitis, probably tuberculous.

Case IX.—Tuberculosis of the hip joint. John D., of South Boston, aged eleven years. For two and a half years he had been treated at the Children's Hospital by means of a traction splint, and for three months at the Carney Hospital clinic with plaster of Paris fixation. The constant traction had elongated the limb, and the gluteal and thigh muscles were severely atrophied, and when the tuberculous disease in the joint was quieted, the patient was completely unable to control the hip joint when his weight was borne on the affected side. The treatment in this case since coming under my care has been wood plastic fixation for two months. This, with good constitutional treatment, caused disappearance of the joint tenderness. On attempting weight bearing on the joint it was found that his muscular efficiency was almost completely destroyed. Active treatment of the wasted and weakened muscles by means of mechanical and manual massage for a period of nine months has resulted in considerable improvement, but recovery of muscular tone is yet incomplete. It is necessary for the boy to wear a raised sole (three quarter inch raised) on the well foot to make his well limb equal his affected one in length. I consider the condition present as a result of the long traction applied in this case, a more difficult condition to treat than uncomplicated tuberculous diseases in the hip joint.

Case X.—Tuberculosis of the hip joint. Teresa D., of Woburn, aged twelve years, had suffered from hip joint disease for five years, the joint being in a very sensitive condition and much deformity was present. Rest at night was poor, and nutrition was greatly interfered with. A wood plastic splint was applied, and with good constitutional treatment the girl recovered so that she could walk well without the use of crutches after eight months' treatment.

Case XI.—Tuberculosis of the knee joint. Alex S., of East Boston, aged eight years, had been suffering with it for six months, and had been treated at the Children's Hospital. The boy was thin, anæmic, delicate, and suffered from scrofulous ophthalmia. The diseased limb was encased in a wood plastic splint, and after a period of two months, crutches and a raised shoe on the well limb enabled him to get out of doors. After eighteen months' treatment the disease was completely overcome, and the patient was allowed to tentatively bear weight on the affected limb. A few months after he was discharged cured with limb structurally and functionally perfect.

Case XII.—Tuberculosis of both knee joints. Harold D., aged five years. This little boy had been under treatment at the Children's Hospital for a year for tuberculosis of the right knee joint. When the disease appeared in the other joint the parents sent for the writer. Ambulant treatment was contraindicated, yet none the less it was desirable to have the child out of doors as much as possible. A cart was constructed, the wheels of which the child could manipulate, and wood plastic splints for fixation of the diseased joints were applied. Adhesions that had formed in one of the knees were broken under ether. The child was enabled by means of the cart to be out of doors a great deal. After a year of this treatment one of the knees had recovered and enabled the boy to use crutches and a raised sole. Finally after two years of careful attention the boy's other knee recovered, and the boy was discharged, cured, with perfect functional and structural restoration of both knees. No relapse after four years of activity.

Case XIII.—Tuberculosis of the knee joint. Mary C., of South Boston, aged twenty years, suffered from tuberculosis of the left knee joint with almost complete ankylosis from early childhood, and had been treated at the Children's Hospital and Boston Dispensary. She was wearing a plaster of Paris cast and a Taylor knee splint when she came under my care. Several scars of sinuses were seen through which bone had at various times had been discharged. A wood plastic splint was applied, as the joint was tender and painful. After six months of fixation, during which the acute symptoms of joint inflammation subsided, attempts were made to break up the ankylosis with partial success. After six more months of wood plas-

tic splining the tuberculous disease became quiescent, and for four years the young woman has walked without any apparatus; she has a very natural walking gait.

Case XIV.—Tuberculosis of the wrist. Alex S., of East Boston. This case developed in a boy of ten years after a fall. He was being treated at the time with tuberculosis of the knee. At first no attention was given it, but after some weeks attention was called to the wrist because of pain and discomfort with some swelling and sogginess of the wrist joints. The wrist was immobilized with a wood plastic splint, and after fixation for a period of six months the disease finally yielded, and normal structural and functional cure of the wrist took place.

Case XV.—Tuberculosis of the metatarsal joints. Bridget F., of South Boston, aged four years. This child had been treated at the Boston Dispensary. The cuboidal joints were diseased. A wood plastic splint so constructed as to immobilize the metatarsal joints and to place the weight bearing point upon the heel was used for a year. Good constitutional treatment, together with fixation and protection from weight bearing, caused a perfect recovery in this case. No recurrence after six years.

Case XVI.—Tuberculosis of the sacroiliac joint. Kate O'L., aged twenty-four years. This young woman had a history of a slight injury six months previous to seeking treatment. She had been gradually growing more lame, and for treatment had been using, for four months, a linament prescribed for "sciatic rheumatism." There was present a slight swelling over the right sacroiliac joint, tenderness, marked locally, and pressure upon the iliac crests caused pain in right sacroiliac articulation with referred pains (reflex) down the thigh. Four months' recumbency in bed, and a wood plastic pelvic splint have brought quiescence of the disease.

The only way to protect this joint from weight bearing is recumbency, for in a sitting posture or with a perineal form of splint, the weight of the trunk would be borne on the pelvic bones, a condition which must be avoided.

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THE RELATION OF THE PHYSICIAN TO SANITATION AND HYGIENE.*

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What asepsis is to the surgeon perfect hygiene and sanitation is to the medical practitioner.

What would be thought of the surgeon who would come into the operating room in dirty clothes, and unwashed hands, equipped with unclean instruments, and step to the operating table, open the abdominal cavity and remove some of the organs therefrom, or repair some injury done to them, ignoring the rules of asepsis and antisepsis? Would such madness be countenanced? What patronage would be given a hospital equipped with nurses uninstructed as to cleanliness and asepsis in surgery? This question is absurd; then why does the medical profession neglect just as important elements in its work, that of sanitation and hygiene? The science of surgery is far in advance of medicine in these matters. It is just as important for the medical practitioner when called to treat a serious disease to learn the cause and source of infection thereof and protect the remainder of the household as it is for a surgeon to wall off a pus cavity and protect his wound from infection.

* Read before the South-Western Medical Association.

Typhoid fever, tuberculosis and malaria, etc., should be as closely investigated, and the patient protected with the same enthusiasm as the surgeon protects his wound from the invasion of strepticocci aphyloccici and other bacteria. To the medical practitioner the house fly and mosquito should be considered as great a cause for disease as the germs mentioned are to suppuration following a surgeon's operation, and as much precaution should be exercised by physicians as by surgeons. Instructions should be given as to the danger from the innocent looking little house fly, one of the most dangerous pests, considered by the laity as only a domestic nuisance, troublesome by its presence and over familiarity on short acquaintance; yet, unconscious of its power for harm, without premeditation or intention, it conveys the most poisonous germs wherever it rests its weary feet. It is liable to leave infection sometimes with dreadful consequences. The story of the mosquito need not be referred to, as the public is generally familiar with its dangers.

It is as much the physician's duty to inform his patient of these dangers and prescribe sanitation and hygiene as to prescribe calomel. The popular mind should be taught sanitation and hygiene, the secret of health, as they are any other knowledge. In every community the physician should accept the guardianship of public health, acting as the sentinel as it were on watch to intercept the spies from the great army of epidemics, and prevent their murderous attacks on the innocent public, and give alarm that will awaken it to the dangers resulting from neglected sanitations, due to the individual's indifference or municipal carelessness.

It is not enough that some physicians and a few experts and specialists be intelligent as to sanitary science. The people will not gather themselves up and do these things merely because they are told that it will be the best for them; the people themselves must become intelligent. If our boys and girls at the age of sixteen could chart the arterial and venous system of the human body and have sufficient knowledge of its function and hygiene, they could well afford to be ignorant of the islands of the Mediterranean Sea or the river system of Asia and Africa. This, in time, would build a foundation for sanitary reform and in the future bring human life up to its natural duration of a hundred years. If strong laws were enacted and executed, compelling local cleanliness in the rural districts, towns and cities—exotic disease would never take root, but when pestilence is raging we can not check the storm bearing in its dark embrace the pointed shaft of death to the sacred homes and hearts of thousands who but yesterday were prosperous and happy; it is then too late to attend to the long neglected sanitary matters.

I heard a physician of the rural district say he had an outbreak of typhoid fever in a family in his practice, and on investigation found them drinking water from a shallow surface well; another physician reports a case of typhoid fever, and found the family living in a house that was in direct line of the drainage from the stable; another reported a case of diptheria, where a large pile of rotten potatoes was found in the cellar; still another case of diptheria, where the water supply was good, but they had a barrel of pigs' food near the stove to keep it

from freezing, where they poured dish water, sour milk, and other refuse mixed with bran; this was found in a state of fermentation. Hundreds of similar cases can be found by investigation, all to be observed by intelligent and inquiring physicians.

Everybody has a right to healthful atmosphere and good water, and it is an offense against the common rights of man, by individuals or communities, for them to live in such a manner as to pollute the air they breathe or the water they or others may drink.

The nearer the individual, personally, and the public masses, collectively, live and conform their habits in accordance with Nature's laws and her demands, the fewer epidemics we will have. Much, if not all, of the diseases of humanity originate, and are directly the result of bad sanitation and hygiene; yet, under the great stress and desire for individual gain and accomplishments of great results in life, these important things are neglected, the great principles thereof are forgotten, and Nature's laws violated indiscriminately.

Beginning with the babe in the cradle, the earliest of our existence, where Nature's laws are subject to interference, the bad judgment of the mother, and neglect of the physician, and where the mother in her desire to give strength to her infant feeds it all sorts of indigestible food, not conscious of the results from her ignorant course; and where the mother of knowledge striving for social distinction and eminence, forces on her babe a light, and to her mind scientific, diet—the one will suffer all sorts of disturbances from a crowded and overfed stomach; the other will start with a weak digestion and handicapped by a delicate constitution, as the result of which it will not be able to resist disease, and offering a fertile soil for all kinds of bacteria, provided for it in the milk of badly kept dairies, on account of false economy in municipal administration.

The second stage of our existence, we are told by some of the older members of the profession, who, while they do not think it desirable to willfully expose a child to smallpox, believe it is well for them to acquire measles, for the reason, it will be pretty sure to acquire it anyway. The excuse is, if contracted in childhood, it will be much milder than it would be in adult life. Forgetting the sequelæ which often incapacitates the child from seeing or hearing, it would be much better for the physician to aid the health department in stamping out these diseases, and keeping a strict quarantine on them, correcting crowded schoolhouses under bad sanitary surroundings, which is a great source of the foci of the diseases of child life. An active sanitary board can prevent many epidemics arising from these sources.

The next and third stage of life is a very important one on these subjects. Here the young man begins smoking, and is exposed by his surroundings to venereal diseases of all kinds; at college, away from home, ignorant of the venereal peril on account of its concealment from the laymen, and neglect of careful instructions along the line of his personal sanitation, the carelessness on the part of the management by physicians of those already infected to prevent contaminating others, the young man is subjected to this, the greatest of all perils. Sexual hygiene is of the greatest importance, and elementary knowledge should begin at the age of puberty—that is, at the end of common school course.

When we attempt to control the inevitable prostitution in the interest of the innocent victims of lust, who outnumber the sinner a hundred fold, it ought to be feasible to at least bring the source of information within the reach of the young men before it is too late. I mean, at the age when the arts of the prostitute are most alluring, and when seventy-five per cent. of the willing lads are about to follow ignorantly after her, straightway as the ox goes to the slaughter. Then it is true, that even to enforce the fact that much of the prevalent disease that goes by the common names, is in reality the concealed and direct result of syphilis. Deny the tradition that gonorrhœa is but an inconvenient streak of luck, and show that from it frequently proceeds stricture, prostatic disease, rheumatism, etc., and the saddest of all, much of the uterine and pelvic trouble causing the suffering of those innocent and confiding women who themselves bring to the altar all purity and good faith, who, alas! can know of no impediment. The pitfalls are many in the course of our existence, and most people succeed in finding them. However, many, if not all, of them can be avoided.

The health officer is the one appointed to see that the means of prevention is applied. He does so in proportion to the knowledge of modern sanitation possessed by him, and to the extent that municipal powers supply him with money and power, but the fact that the physician to have this knowledge and be well posted on sanitary facts and beliefs, necessitates that the practitioner be alive to the published matter on these subjects in the voluminous medical journals of the day, especially the various articles on the mosquito theory, the transmittance of disease, and the rôle the common fly plays in the spread of the disease, and also the bactericidal possibilities in a great many diseases. One may ward off a chill by quinine, but cannot prevent the return of the disease; nor the spread of it to others, unless the conditions producing it be corrected.

It is a fact that the average business man will give more attention to an address on the practical subject of purification of water than will most physicians, yet the physician is considered the shepherd and guide to the healthful influence in life. This is not true of Paducah, however, for had it not been for the members of the medical profession, we could not boast of the purest water of any Kentucky city, and a marked decrease in the death rate since this has been accomplished.

The advance in knowledge of bacteria has permitted of the discarding of the old theory of contamination of the atmosphere about a house where diphtheria, scarlet fever, etc., prevails. In my experience I have met with the following conditions: At the back entrance chloride of lime in a saucer; a part of a sheet saturated in carbolic acid solution hanging on the back door; a sack of assafœtida around the patient's neck, no doubt for the purpose of stifling the miasma or catching the vicious microbes in their winged flight out the back door. If these efforts were for the purpose of deodorizing it might have foundation for some reason, but if for security it is misleading and only gives a false sense of protection.

In diphtheria expert bacteriologists tell us that

the specific organism does not reach beyond three feet from the mouth, and the centre of infection is in the throat and mouth, utensils and hands, coming in contact with the mouth. If proper precautions are used, the possibility of conveying this disease is remote, and if the doctor would concentrate his quarantine on the centre of infection instead of laying so much stress on the observations of so many unnecessary rules, his results would be more satisfactory.

Among the communicable diseases which have prevailed from time to time, prehistoric, the venereal group is the most fearful. While it is said these diseases have been declining in severity for several generations, we do not find it so in Paducah, for the ravages of these diseases are dreadful; yet, they are preventable, and why should they continue to thrive undisturbed. Some physicians caution their patient, but usually in the embarrassment of the consultation, they forget the instructions. If the boards of health, city and county, would furnish instructions for the protection against contagious diseases, the physicians to be given these instructions to distribute among their patients, it would help in these matters of controlling the spread of all infectious diseases. Those who have control of the patients can read at their leisure and understand thoroughly how to carry out the physicians' instructions by having it more firmly fixed on their mind. There should be used the very best recognized disinfectant by the board of health officials.

There is yet another thing wherein the physician often neglects his duty as a sanitarian to refer to the physical examination of a patient where it is determined without a doubt that he is suffering from tuberculosis, the physician informing his patient that he has some lung trouble, and having not the moral courage to tell him of his real condition. The patient having no knowledge of the pressing need of care and attention, permits the disease to get such progress as to destroy his chances for recovery, and subjects his friends and associates to the possibility of infection from himself. Here it is where lies the benefit derived from the examination of tuberculous sputum, which can be done easier at this age. Having determined positively the presence of the germs the intelligent physician cautions his patients as to the necessity of not allowing the secretions from his lungs and mouth to come in contact with any one else, nor drink from the same glass, nor use the same towel, or indulge in kissing. This makes it very important to report every case of consumption to the health department, either city or county, and a physician can do great good by so doing.

There may be some irregularities in the observance of such rules by some physicians. While the majority of physicians believe in sanitation and are willing to uphold sanitary authority, there are a few among our confrères whom we all know are in the profession for what they can make out of it by hook or crook. It is the natural disposition of these fellows to take a stand against any constituted authority. They often receive their just reward by falling into serious blunders. You see them in their attempts to conceal the presence of communicable diseases by suppressing the comments of the family, or intentionally making a false diagnosis. Such a one will sign a death return as grippe when tuberculosis was the cause; in order to conceal the fact from an insurance company, he will diagnosticate smallpox as Cuban itch. How far does the regular practitioner take part in a fight against such irregularities and give these men their rightful position before the public? If our profession would indeed rise to the dignity and importance of being the guardian of public health it would be recognized as a power in this government whose counsel should be heeded; its well advised measures for public sanitation would receive such State and national aid as would make it a success, and sanitary improvement would finally master all preventable diseases; and, again, this recognized merit and value of our profession by the people at large would awaken an interest among all intelligent people and lay the foundation for a new era in the education of the children and youths of the land, should these sciences be taught in public schools. But to build the temple of public sanitation to its grandest proportion and greatest usefulness we must lay its foundation in the hearts of the mothers of the country, and at the threshold of the sacred shrine of infancy.

It is an appalling fact that at least twenty-five per cent. of deaths among children up to two and a half years old are caused by bad sanitation and hygiene, over feeding, their little stomachs become continuously distended; its physiological function of contraction is impaired, and the stomach swings in the abdominal cavity like a bladder. This is an evil which has its source in ignorance of hygienic science. If there should be a concert of action among physicians to instruct their patients in the matter of feeding infants, sanitation would soon have raised a monument for itself alone, even in this one work, more enduring than brass, and little, bright, beautiful, and healthful children would gladden the home circle, and sweeten the very air with their happy songs, spontaneously arising from the fountain of health.

RESUME OF RECENT WORK IN CLINICAL PATHOLOGY OF THE URINE.

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In looking over the methods suggested or elaborated during the last five years for examination of laboratory material it seems best to classify them, with the exception of the physical-chemical and physical methods, according to the material,—blood, urine, fæces, spinal fluid,—and further to group together the physical and physical-chemical methods, since, as a rule, they are supposedly adapted for study of various materials sent to a laboratory for examination.

URINE.

Accordingly, we may classify under the urine methods mostly chemical which may be placed in two divisions. A. Variations in normal constituents; B. purely pathological constituents; and A. may again be separated under the headings: 1. The well known nitrogenous constituents; 2. the lesser known aminoacids, which make up the larger portion of the so called rest nitrogen; 3. the total organic and mineral acidities, according to Folin; 4. the

total mineral, alkaline sulphates and total and neutral sulphur. While under B we have the divisions: 5. The sugars or reducing bodies; 6. the albumin bodies; 7. ferments and enzymes, particularly in pancreatic disease; and 8. cholin, in degenerative diseases of the central nervous system; and finally 9. we must consider a few of the newer tests for such substances as acetone, diacetic acid, urobilin, blood, and indican.

A. *Variations in Normal Constituents.* The recent active interest in the variations of the nitrogenous constituents of normal and pathological urines is largely due to the publications of von Jaksch's (1) early in 1902, and Folin (2) during 1904 and early in 1905. Before 1903 most of the observations and studies on urinary nitrogen from the clinical side related to urea and uric acid in uræmia, eclampsia, and gout, without respect for diet or possible normal variations in the output of these substances. In 1902 Walker Hall (3) published an excellent monograph on the *Purin Bodies of Food Stuffs,* in which are recorded the purin base equivalent of the ordinary foods, a study of the influence of diet on the purin base excretion in gout and other diseases, the food stuffs which are purin free, and finally a rough method for rapidly estimating the purin bodies in the urine after establishing a patient on a purin free diet under which conditions a rough method as with Walker-Hall's purinometer will give results of more value clinically than the more exact chemical methods with no respect for diet, as has been done in the past.[1]

The *purinometer* estimation of purin bodies depends upon the precipitation and removal of the phosphates with subsequent precipitation of the purins as silver salt—somewhat similar to the Camerer and Ludwig-Salkowski methods for the estimation of the alloxur bases and for uric acid—and an estimation of the amount of purin bodies present from the amount of the precipitate. Walker Hall demonstrated two facts conclusively that the estimation of the uric acid in the urine is of no clinical value in comparison to that of the total purin bodies, since the xanthine group as well as uric acid represents the end products of nuclein metabolism, and secondly that the ureauric acid quotient is worthless clinically, since, while the urea output has a direct relation to the amount of the proteid in the food, the uric acid may be relatively independent of it.

For those who still choose to carry out uric acid determinations a simple form of apparatus has been devised by Rühemann (4), based on the property of uric acid to combine with free iodine in an acid medium, and the combination of iodine with carbon bisulphide producing a rose red color, this color being utilized as an index of the uric acid iodine combination. The *uricometer* is a glass tube graduated so that parts per thousand of uric acid correspond to the amount of urine used in c.c.; a definite amount of carbon bisulphide and a definite amount of a solution of iodine and potassium iodide in water and alcohol containing 0.01 gramme of free iodine are mixed in the tube, urine is added slowly, and the tube shaken thoroughly until decolorization of the carbon bisulphide takes place, when the uric acid in grammes per thousand is read from the graduate mark at the level of the urine surface. Repeated trials have shown that when done slowly and carefully the readings compare closely to estimation by the Folin-Hopkins method for uric acid. Decolorization will occur before the uric acid iodine combination is complete with alkaline or neutral urines, and with urine containing diacetic acid.

Merk (5) has devised a somewhat similar method based upon the reaction between uric acid and iodic acid, in which iodine is set free in acid solution. The practique of the method consists in shaking out the free iodine with chloroform and titrating against a standard solution of sodium thiosulphate, 1 c.c. of which is estimated as equivalent to 0.0084 gramme of uric acid.

Folin (6) in his introduction to *Some Metabolism Studies* refers to the small number of complete analyses of single specimens of urine, of which he was able to find but thirteen in literature, analyses by Bunge, by Donzé and Lambling, and by Richardson, and even these were incomplete, so that Folin's (7) records are among the first complete urine analyses, and are of great value since they include thirty normal urines. The study of the nitrogenous constituents included estimation of total nitrogen by Kjeldahl's method, estimation of the urea nitrogen, of the uric acid nitrogen, of the ammonia nitrogen, of the creatinin nitrogen, and the relation of these nitrogen partitions to the total nitrogen output in the urine. The methods employed, aside from Kjeldahl's, which were elaborated by himself or his assistants during their work, are described in the various chemical journals from 1898 through to 1905, and are methods applicable for clinical laboratories and thus mark a practical advance over older methods. In addition to the elaboration of practical methods for nitrogen partition determinations, Folin's (8) work has resulted in a theory of protein metabolism which should serve as a guide in investigation, a theory recalling Walker Hall's studies on the purin bodies, in that it emphasizes an endogenous tissue protein metabolism, which tends to be constant, represented "largely by creatinin and neutral sulphur, and to a less extent by uric acid and ethereal sulphates," and an exogenous or intermediate protein metabolism which is variable and represented chiefly by urea and inorganic sulphates, just as Walker Hall has found it necessary to recognize the influence of exogenous and endogenous purin bodies on the total purin output in the urine. Possibly, the urea and inorganic sulphates represent to some extent the constant metabolism, but evidently the tissue, or endogenous metabolism, represented mainly by kreatinin and neutral sulphur outputs, is the phase of metabolism (catabolism) to be investigated clinically with hope of results definitely valuable to the clinicians.

The extreme variations in total nitrogen and urea nitrogen produced experimentally by Folin in normal individuals show these two factors to be dependent mainly upon variations in diet and, therefore, when estimated singly to be of least value for the purpose of drawing conclusions in regard to disease. The ammonia nitrogen and the uric acid nitrogen occupy a middle place in that they vary less with the alteration of protein diet, and yet the variation,

[1] In a recent article (*British Medical Journal,* January 20, 1906, page 128), Walker Hall calls attention to the clinical value of the purinometer determinations with gouty urine.

with a decrease in protein food, is less than that of the total and urea nitrogens. Thus observations of little value are to be obtained through determinations of one or two of these nitrogen partitions, but estimations of all of them and calculation of their percentages relative to the total nitrogen furnish data from which information of value may be obtained. Finally, the twenty-four hour creatinin nitrogen is the one nitrogen factor unchanged by variation in the meat free protein diet in the normal adult, and this should be the nitrogen partition chosen for estimation, if one estimation is to be made in the study of pathological conditions. So far no such observations have been carried out in disease excepting those of Folin (9) in cases of general paralysis where little or no variation was found, and those of Baldi (10), Moitessier (11), Gregor (12), MacLeod (13), Rietschel (14), Scholz (15), and those of Koch (16) in relation to the kreatinin excretion with variations in diet.

Folin's (9) method for the estimation of kreatinin in the urine is a colorimetric method based upon Jaffé's reaction, and employing a colorimeter of the Du Boscque type or some similar instrument. After practice the slight variations in color are readily noted and the readings apparently accurate, at least as accurate as the older methods of precipitation of and weighing the kreatinin as a zinc chloride salt. We have attempted to make colorimetric readings with the Nessler's tubes and have found the method inapplicable, since the various concentrations of the kreatinin solutions do not correspond to, or vary directly with the depth of a given column of solution, resulting in extremely variable readings not to be corrected with crude apparatus. Folin took note of this variation depending upon the unequal absorption of light, and chose a layer of creatinin solution of proper thickness to insure readings approximating estimations by precipitation and weighing.[2]

The other urinary constituent which, according to Folin, is nonvariable with protein diet is the neutral sulphur, and for this Folin (17) has described a method which, while not beyond us, is long and tedious, not recommending itself to clinical laboratories for routine work.[3] An important fact which tends to more confusion is one the most emphasized by Folin, that even these two factors of constant metabolism (creatinin and neutral sulphur) vary with the individual, so that here, theoretically, comparison of several determinations must be made to establish a variation from the individuals constant, but an average high or low variation among several individuals afflicted with one disease should establish a variation from the normal for that disease.

The amidoacid nitrogen. The one phase of the nitrogen elimination upon which Folin did not work, the undetermined or rest nitrogen, was brought forward by von Jakschs (18) in 1902 in an article on the *Partition of the Nitrogenous Substances in the Urine in Disease,* in which he reported the results of urinary examinations based upon the following methods: 1. The determination of the total nitrogen by Kjeldahl; 2. the estimation of the nitrogen content of the phosphotungstic acid precipitate; 3. the estimation of the urea (urea nitrogen) in the filtrate from the phosphotungstic acid precipitate; 4. the estimation of the total nitrogen in the filtrate from the phosphotungstic acid precipitate.

With no further reference to the first two methods it is evident that the subtraction of result (3) from result (4) will give the amidoacids, as hippuric, and leucine and tyrosine, and possibly creatin, indoxyl, and skatoxyl, allantoin, a result referred to by von Jaksch as the amidoacid nitrogen which constitutes the major portion if not all of the undetermined or rest nitrogen.[4] His investigations were upon many and various diseases which are regularly diagnosticated readily by usual methods and therefore his results are of interest from other standpoints than clinical. This work, however, stimulated others to investigation of conditions in which early diagnosis or prognosis is not always easy, such as the persistent vomiting of pregnancy, threatened eclampsia, and thus forces such methods upon a laboratory for diagnosis. What the value of such investigation will be is as yet too early to state, and the publications of Ewing (19) on the *Toxæmia of Pregnancy,* of Baldwin (20) in relation to the excretion of acetone and diacetic acid, of Williams (21), of Stone (22), and of Slemons (23) in relation to the increased ammonia output in simliar conditions, suggest either the possibility of simpler methods being of value in such conditions, and the probability of the determination of any one factor, nitrogenous or nonnitrogenous, being of no value.

It seems probable that the determination of the total nitrogen and of the urea nitrogen, thus giving data for the estimation of the proportion of total nitrogen excreted in the urine as urea and of the percentage of total nitrogen not excreted as urea, may give the information wanted in such cases, for a marked increase in the proportion of total nitrogen not excreted as urea, in eclampsia, suggests at once an increase in ammonia nitrogen or rest nitrogen, or both, but what such an increase should be in order to be significant has not yet been determined.

Under such conditions the urea and ammonia determinations are best made according to Folin's (24) or some other method than the hypobromite method, since the latter gives the ammonia nitrogen and some of the rest nitrogen, in addition to the urea nitrogen. Folin's urea method determines also the ammonia nitrogen so that an ammonia determination must be made in order to obtain the urea nitrogen.

A high percentage for rest nitrogen obtained by subtracting the sum of the urea nitrogen (Folin's method) and the ammonia nitrogen from the total nitrogen is certainly suggestive of the presence of an increased percentage of aminoacid in eclampsia.

It is difficult for the clinician to give up so convenient a method as that of estimating the urea (for urea nitrogen) by the hypobromite method, and it is likely that this method will suffice for clinical

[2] Van Hogenhuyze and Verploeg have found Folin's method reliable with slight variation and have reported interesting observations in regard to the influence of muscular work on creatinin excretion in the urine in individuals under normal conditions and under starvation. Their observations show 1.5 to 2 grammes of creatinin in twenty-four hours as a normal product, which is but little influenced by diet. (*Biochemisches Centralblatt,* iv, 19, p. 570, 1905.) W. Koch has established experimentally upon dogs the constancy of the daily creatinin output which is practically uninfluenced by feeding, and which corresponds to the observations on man by Folin.

[3] Folin has recently described newer methods for the estimation of the sulphur content of the urine. *Journal of Biological Chemistry,* i. p. 131, 1905.

[4] A portion of the "rest nitrogen" has recently been described as colloidal nitrogen by Salkowski. *Berliner klinische Wochenschrift,* Nos. 51 and 52, pp. 1583, 1618; 1905.

work if we recognize the fact that such a method really estimates the urea nitrogen plus ammonia nitrogen. If the urea is determined quantitatively by the hypobromite method it should be borne in mind that the method estimates this nitrogen of ammonia as readily as the nitrogen of urea, also a portion of the nitrogen of kreatinin and extractives which occur in such small amounts in the urine as not to vitiate conclusions regarding urea nitrogen by this method; on the other hand, according to Hüfner (25), this method does not include the nitrogen of the amidoacids, so that a high percentage of rest nitrogen determined by subtracting from the total nitrogen the urea nitrogen estimated by the hypobromite method would suggest strongly an increased percentage of aminoacids in the urine, such as we would expect in certain cases of eclampsia, according to Ewing. Provided there be no high percentage of rest nitrogen, when the urea nitrogen is determined by the hypobromite method, one must consider that here the ammonia nitrogen is included, and that a high ammonia nitrogen percentage may be present, as one would expect in certain cases of eclampsia, according to Williams and Slemons; and therefore the ammonia nitrogen must be determined by Folin's or some other method before proper conclusions can be arrived at.

It is to be hoped that for clinical purposes the determination of the nitrogen partitions will resolve itself into some such simple procedure as the following, viz: estimation of the total nitrogen by Kjeldahl, estimation of urea nitrogen plus ammonia nitrogen by the hypobromite method (correcting for temperature and pressure), estimation of the ammonia nitrogen by Folin's method, and finally the calculation for the rest nitrogen, which would include the aminoacid nitrogen, from these factors.

In 1901 Herter and Wakeman (26), suggested the balancing of the acids and the bases in the urine as of possible value in following the course of diabetes mellitus, and concluded that an idea of the increase of the acids over normal in the blood and tissues may be obtained through an estimation of the ammonia in the fresh diabetic urine. Folin (27), again took up the subject of the acidity of the urine and described a method for the total, mineral and the organic acidities by means of which a preponderance of the inorganic acids or bases can be determined. It is well to note that Folin has found in normal individuals an excess of organic over the mineral acidity with no such a relation as an increased ammonia output with this excess of organic acids. Folin found, contrary to the usual view, that the acidity of the urine is ordinarly greater than that accounted for by the diacid phosphates, the excess being due probably to organic acids, and that one may obtain information in regard to the organic acidity by direct titrations of the total acidity and of the phosphates, since the excess of the former over the latter gives the total free acid present, (7.1 Mg P_2O_5 = 1 c.c. $\frac{N}{10}$ acid. *American Journal of Physiology*, XIII, No. 1, pp. 104, 105, Feb., 1905).

The later method of Folin (28), for the estimation of ammonia in the urine is so simple and reliable that every clinical laboratory should be equipped with such apparatus, and should be carrying out such determinations. The method we have used for months is that of drawing a current of air, by means of a large Richards vacuum pump through twenty-five c.c. of the urine containing one gramme of dry sodium carbonate and subsequently through twenty-five to fifty c.c. of n/10 H_2SO_4 to catch the free ammonia which is estimated by retitration with n/10 NaOH. For details one is referred to Folin's (28) articles.

B. Pathological Constituents. The reducing bodies and the sugars must be properly recognized by methods and tests other than the reduction of copper solutions and polariscopic determinations in order to, first of all, establish the presence of a sugar and, second, to recognize the tendency toward a nontolerance for carbohydrates of the sugar sort, which occurs often before the development of a stereotyped case of diabetes mellitus as recently emphasized by von Noorden (29), in his lectures. Our laboratory has had under observation for a year such a case where urine shows at times, depending upon the diet, a trace of glucose, again of levulose, and again maltose, with no signs or symptoms of diabetes. Lusk (30), has brought forward the relation of the total nitrogen to the total sugar output for the twenty-four hours, after establishing a meat fat diet, as an index for prognosis in severe cases with a complete intolerance, for carbohydrates, and we are using this method to-day for following diabetics, whose diet can be properly controlled, a difficulty often insurmountable so that the method has limited application. In the majority of cases it seems probable that their severity and course can be well followed by determinations of the percentage output of glucose and of the variations in acetone bodies in the urine which may follow variations in the dietary. These simple methods are applicable for the clinician.

Ferments and enzymes in the urine, particularly in pancreatic disease, have been sought for and studied by Cammidge (31), in some 295 patients and by Hewlett (32), experimentally on dogs after production of pancreatic disease by injecting bile into the pancreatic ducts. Cammidge's first paper (1904), reported a method based upon the probable occurrence of glycerides in the urine in pancreatic disease, which are capable of being broken down into a body yielding an osazone with the phenylhydrazine tests, and further reached the astounding conclusions that the various pancreatic lesions might be differentiated by carrying out these methods before and after precipitating with mercuric chloride and testing the solubility in various dilute acids (33 per cent. H_2SO_4) of the resulting osazone crystals. A later paper by Cammidge (31), (1905), based upon 295 cases completely reversed his conclusions of a year ago, although his methods are still held to be of some value in that diseases other than pancreatic may produce osazone crystals, and in fact they may be obtained in normal health in urine rich in combined glycuronic acid, which is split up by boiling with concentrated hydrochloric acid and yields an osazone. Hewlett's (1904) method of testing the urine for fat splitting ferments against ethyl butyrate and estimating the re-

sulting increase in acidity gave definite results experimentally and his later modification (1905), viz., the use of triacetin and of bile or lecithin as an accelerator for the reaction gave hopes for some definite tests for pancreatic conditions, but so far no clinical reports have been published, and in three pancreatic cases, undoubted through operation or post mortem examination, we were unable to obtain any evidence of a fat splitting ferment by either of the methods. The monograph of Lazarus (33), (1904), on pancreatic diseases, particularly cysts and concretions, but including interstitial types of pancreatitis, reviews carefully all methods of diagnosis suggested up to that time, and concludes that no laboratory methods available are of help in pancreatic conditions, excepting the unsatisfactory examination of the stools.

Cholin has been reported as found in the urine in degenerative diseases of the central nervous system and the method for its determination will be referred to under the spinal fluids.

Maillard (34) in his monograph on urinary indoxyl presents a modified Wang's (35) method for the approximately quantitative estimation of indican —a method requiring a titration with a standard solution of potassium permanganate and one not suited to routine clinical work. Folin (36) has also described a method which he will not designate as quantitative, based upon comparison of color with a standard dilute Fehling's solution, and Blumenthal (37) recommends Strauss's (38) method of comparing the color of the chloroform extraction to a fixed solution of indigotin, but these methods are no better than Robin's (39), in which the variation in amount is judged of according to the number of drops of solution of potassium chlorate of fixed strength, required to convert the blue indigotin into the colorless or yellow isatin. Against Robin's method the objection may be raised that the oxidizing agent, potassium chlorate, may be utilized by substances other than the indigotin in the urine, yet to us this method remains the most practical for clinical examination. It is well to note that these four methods recommend Obermeyer's (40) method of precipitation with lead subacetate solution and of treating the filtrate with Obermeyer's reagent (0.2 per cent. solution of ferric chloride in pure hydrochloric acid).

Gürber (41) has recently suggested the use of osmic acid as an oxidizing agent instead of Obermeyer's reagent Oerem (42) utilizes Bouma's isotin method and obtains quantitative results by employing Meisling's colorimeter.

Frommer's (43) test for acetone is new and is most satisfactory in that distillation of urine is not necessary. The only reagents required are strong alkali and a ten per cent. dilution of salicylous acid in ninty-five per cent. alcohol, and the method is simple. To ten c.c. of urine add one gramme of solid potassium or sodium hydroxide (or 2.5 c.c. of a forty per cent. aqueous solution), ten to twelve drops of this salicylous acid dilution, and heat gently the upper zone of fluid to the boiling point; a purple red color in the heated zone is positive for acetone.

Lindemann's (44) test for diacetic acid depends upon the fact that the presence of diacetic acid prevents the appearance of red or pink color, which is to be extracted by chloroform from an acid urine treated with solutions of iodine and potassium iodide. It will be recalled that Rühemann's method for estimating uric acid is interfered with by the presence of diacetic acid and it, therefore, seems probable that the presence of acetoacetic acid prevents the reaction between free iodine and uric acid such as occurs in Rühemann's method. Lindemann's test is simple; to ten c.c. urine add five drops of dilute, twenty to thirty per cent., acetic acid, five drops of Lugol's solution, two or three c.c. of chloroform, shake thoroughly, and in the presence of diacetic acid the chloroform will separate without color, while with normal urine the chloroform separates out with a pink or red color. A second portion of diacetic acid urine which has been boiled for two or three minutes will result in the separation of a red or pink chloroform.

Oliviero's (45) test for urobilin in the urine or fæces is of service in hepatic conditions with dark colored urine and with apparently acholic stools, and in pancreatic conditions, where the gray fatty stools often suggest an absence of urobilin when it is present.

In addition to Weber's test for blood, a test not yet old, Riegler (46) has recently described a blood test with hydrazin sulphate which has been pronounced specific and typic by Palleske (47), testing from a medicolegal standpoint.

The last word in regard to the diazo reaction, a test which has been abused by the practitioner and by the laboratory worker and which remains one of the most helpful, positive tests for typhoid, providing we are familiar with the red or pink diazo and the brown diazo, the former in typhoid and late tuberculosis and measles, the latter in malaria and pneumonia and other acute and febrile conditions, both producing often a red mixture as do certain drugs as thymol, but the former producing the foam reaction as described by Ehrlich as characteristics. The reaction is held to-day of equal importance with the Widal test and urine cultures in Ehrlich's laboratory at Frankfort.

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THE X RAY IN SPLENIC ENLARGEMENTS.

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During the past few months considerable interest has been taken in the subject of the treatment of splenic enlargements dependent upon or accompanied by changes in the blood—diminution in the hæmoglobin and red cells, with or without an increase in the white; and various drugs have been vaunted for their relief. In many of the cases reported, the x ray had been used with an almost uniform improvement in the blood condition, but with varying success on the spleen. In our materia medica we find that numerous drugs produce different effects when administered in different dosage, and I believe that where the x ray has been used and little shrinkage in the spleen has ensued, the difficulty has lain with the character and dosage of the rays.

It is now generally agreed among radiotherapeutists that the x ray tube emits two sets of rays, soft and hard, the former acting upon the skin and superficial structures, the latter upon the deeper. To affect the spleen, a preponderance of hard rays is necessary, and the fewer the soft ones the better, for there will be less action and reaction upon the skin. To obtain these hard rays one must use an old tube of high vacuum. The current usually used is not sufficient to excite such a tube, and if the vacuum is reduced to the point where a light current will excite it (the usual procedure), the resulting rays will be too soft to penetrate to the spleen.

In several cases of splenomegaly treated by me during the past year it was found that, while using the ordinary dosage of the rays, there was a marked improvement in the blood condition with little shrinkage in the spleen, but by increasing the current passed into the primary of the coil and proportionately decreasing the length of the exposure, shrinkage promptly began and progressed very satisfactorily. This may be illustrated by the following case:

H. B., aged about thirty, came to my office with the diagnosis of splenomyelogenous leucæmia. He was suffering from marked weakness and had been unable to work for several months. White cell count, 360,000; spleen one inch to the right of the umbilicus and two inches above the symphysis. Because of his living out of town he received treatments only twice a week. I started with a current of five ampères in the primary of a twelve inch coil and an exposure of seven minutes, which was later increased to ten. At the end of two weeks the blood appeared of a better color, but no record of the hæmoglobin nor red cells was kept. The spleen was three inches above the symphysis and the inner margin at the umbilicus; white cells, 160,000. Two weeks later, white cells, 64,300. Spleen the same, but circumference of the abdomen two inches smaller. Two weeks later, six weeks after beginning treatment, white cells 30,400; spleen the same; gross appearance of the blood, good; strength had increased greatly; abdomen about four inches smaller than before treatments were begun.

I then used a very high vacuum tube with a current of twenty ampères for three to four minutes, and at the end of two weeks the spleen was at the level of the umbilicus and one inch to the left of it; white cells, 13,900.

Two weeks later the spleen was about one inch below the free margin of the ribs and the white cells had been reduced to 9,200. Patient then went to the country, where he now is, and a letter from him states that he cannot feel his spleen, and that he feels perfectly well and strong. There was but very slight reaction on the skin, only a tanning.

I realize that it is necessary to have reports from a large number of cases to draw any satisfactory conclusions, but I have selected this case out of three treated by me for, while the others

reacted to treatment in the same way, this is the only one on which a white cell count was kept.

In conclusion from this case, I would call attention to the fact that under mild treatment the blood condition improved markedly, and the general strength increased, but at the end of six weeks the spleen had shown but slight change, while with a harder tube and much greater power, although with shorter exposures, the splenic enlargement diminished quite rapidly. We must, however, call this only a "symptomatic cure," for a majority if not all of these cases have a relapse sooner or later.

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Correspondence.

LETTER FROM TORONTO.

The Recent Conventions in Toronto.—The Canadian Medical Association and Its Proposed Reorganization.—The Canadian Medical Protective Association.—The Ontario Medical Association.—The British Medical Association.

TORONTO, *August 30, 1906.*

August the 25th brought to close a week in Toronto which may quite properly be designated a "hot" one. At least five medical bodies held conventions in this city in as many days. There was also conducted a tuberculosis exhibition. The medical faculty, therefore, were gorged to satiety, to say nothing of the many conventions and private social functions. The preliminary canter took place on Monday, August 20th, when the Tuberculosis Exhibition opened and the American Orthopædic Society, the Canadian Medical Association, the Canadian Medical Protective Association, and the Ontario Medical Association held their annual executive meetings. Then for four days the British Medical Association held sway.

At the meeting of the Canadian Medical Association the chief item of business transacted was the presentation of the report of a special committee on reorganization appointed last year at Halifax. The report of this committee took the form of a complete and new constitution and by-laws, patterned after those of the Britsh, American, and Canadian Medical Associations. It is proposed also to establish an official journal and to organize the entire profession in Canada into branch societies under the national organization. Full discussion, however, was deferred to next year. A complimentary telegram was sent to Dr. William Bayard, St. John, N. D., on attaining his ninety-second year. It was decided to meet in Montreal in 1907, and Dr. Alexander McPhedran, of Toronto, was reelected president, Dr. George Elliott, of Toronto, was reelected general secretary, and Dr. H. Beaumont Small, of Ottawa, was elected treasurer.

Following the meeting the Canadian Medical Protective Association held its annual meeting, with the president, Dr. R. W. Powell, of Ottawa, in the chair. Dr. Powell's annual report was very encouraging. The association now has a membership of four hundred odd, and, considering that it was only founded in 1901, that speaks well for the future. No case which it has ever defended has been lost. Its finances are in excellent condition, and the association is prospering. Dr. Powell was reelected president and Dr. Fenton Argue, of Ottawa, was elected secretary.

Then the Ontario Medical Association held an executive session under the presidency of Dr. George Bingham, of Toronto. It reelected Dr. Bingham to the presidency for another year and Dr. C. P. Lusk, of Toronto, secretary. It will meet in Toronto in 1907.

University Campus was alive with people for the four following days, passing and repassing from the main building to Convocation Hall, the Medical Building, the Chemical Building, and the Biological Building. By Tuesday fully 1,800 had registered, and altogether 2,200 are said to have registered, thus rivalling the best meetings of the American Medical Association, the Boston meeting of 1906 excepted. It was probably the largest meeting ever held of the British Medical Association. On Tuesday morning the thirteen different sections met promptly at nine o'clock. On the same day, in the afternoon, the formal opening ceremonies took place in the new Convocation Hall. The retiring president opened the meeting after prayer by the Reverend Dr. McLaren, of Knox College, Toronto. Then came the valedictory of the president, Dr. G. C. Franklin, and the introduction and installation of Dr. R. A. Reeve, the new president, dean of the Medical Faculty of the University of Toronto. Then the retiring president and Sir Victor Horsley were made vice-presidents for life. Addresses of welcome were then delivered by the mayor of Toronto, by the lieutenant governor of the Province of Ontario, by the president of the Canadian Medical Association, and by the president of the Ontario Medical Association. Then followed the presidential address. The evening session of the first day took the form of an address in obstetrics—The Teaching of Obstetrics—by Dr. Walter S. A. Griffith, F. R. C. S., of London, England. In the afternoon of the first day there took place a garden party at Government House, and in the evening the president and Mrs. Reeve held their reception in the quadrangle of the university. Both were brilliant functions. Large numbers also visited the Tuberculosis Exhibition, where popular lectures were being delivered at different hours of the day.

Therapeutical Notes.

The Detection of Blood in the Urine by Hydrogen Dioxide.—M. Sabrazès, of Bordeaux (*La Province médicale*, March 10th) calls attention to the fact that if urine contains even traces of blood, the addition of a few drops of hydrogen dioxide to a small quantity in a test tube will produce a very decided frothing. On the other hand, urine containing albumin, bile, or sugar will under the same conditions froth only very slightly as compared with that containing blood.

Protection of the Eyeball from X Rays.—In the treatment by radiation of the parts adjacent to the eye, it is necessary to use a shield, as Birch-Hirschfeld has shown that the x rays may cause

keratitis, iritis, cyctitis, and even degeneration of the ganglion cells and nervous fibrilla of the retina. It has been customary to use a piece of lead for this purpose, but van Duyse and Nobele have had small shells made of different substances, which can be placed under the eyelids, like an artificial eye. These have been made of different substances, enamels made with metallic oxides, porcelain glazed with lead, and a special form called Paris enamel, made of lead glass. As a result of numerous trials they have found that the latter only are totally impermeable to the x rays. The usefulness of such shells is evident when it is necessary to expose the surrounding parts of the eye to prolonged radiation.—*Le Progrès médical*, May 5th.

Successful Results Following Resection of the Sympathetic in Exophthalmic Goître.—In a communication upon the surgery of the sympathetic, read before the Lisbon Congress, Professor Jonnesco, of Bucharest, said that in exophthalmic goître resection of this nerve had been very successful. He had collated twenty-five cases, and presented photographs of several cases of his own, demonstrating its beneficial results. He noted that the operation of Jabonlay, or the resection of the first or of two cervical ganglia, is insufficient. He had found it necessary to take away not only the whole of the cervical chain of glands, but also, in addition, the first thoracic ganglion. Experience had shown him that resection of the sympathetic, when performed to such an extent to-day, places in our hands the means of curing exophthalmic goître. He also reported a remarkable case of cure of essential migraine by resection of the sympathetic.—*Journal de médecine de Bordeaux*, May 6, 1906.

Intercostal Neuralgia Following Herpes Zoster Treated by Resection of the Posterior Spinal Nerve Roots.—M. Chavannaz (*Journal de médecine de Bordeaux*, May 6, 1906) reported a case of a man, sixty-eight years of age, who suffered intensely with intercostal neuralgia following an attack of zona. The patient also had suffered several times from carbuncle. Medical resources having been exhausted, Chavannaz divided the first four intercostal nerves, but without any result. He then divided the posterior roots in the spinal cord to the extent of one centimetre, but the patient still suffered, the cutaneous sensibility returned in a few days after the operation with the same pains as before in the places occupied previously by the eruption. In the discussion following this report, it was suggested that better results would have followed resection of the spinal ganglia in place of simple section of the nerve roots. It was also suggested that nerve stretching or lumbar puncture might have succeeded in relieving the neuralgia.

Transmission of Rabies by Scratches with Animal's Claws.—The popular notion that rabies only follows the bite of a mad animal, or by exception, the licking of a superficial wound, is incorrect. P. Remlinger, Director of the Imperial Bacteriological Institute of Constantinople, has brought forward three observations, which show the possibility of a third method of contamination. A certain number of animals, particularly the dog and the cat, have the habit of licking their paws. But Roux and Nocard have shown that the saliva becomes virulent in a very few days after the first appearance of the symptoms of rabies. When the rabic animal is confined in one place, the saliva drips upon the ground and soils his paws, which are also contaminated by licking wtih his tongue. Wounds, therefore, made by scratching with the claws of a rabic animal are necessarily infected wounds. In scratching the human skin the animal lays bare a number of nerve filaments, upon which the virus is deposited. Persons who are scratched by animals thought to be mad should, therefore, submit themselves to appropriate treatment without loss of time.—*Le Bulletin médical*, May 23rd.

Treatment of Eczema.—In cases of acute eczema, Jeauselme (*Journal des praticiens* and *Journal de médecine de Bordeaux*, May 6, 1906) prefers to all other applications a compress of gauze simply moistened with sterilized water, which is retained by a protective waterproof bandage. In general eczema, he advises prolonged warm baths. The patient may pass the entire day in the water, taking his meals there and even sleeping in the bath. When the crusts have softened and dropped off, a dry dressing of talcum powder is used. After the inflammation has disappeared, he orders an ointment, like the following:

℞ Petrolatum, ...20.0 grammes;
Oxide of zinc,.....10.0 grammes;
Starch powder, ...10.0 grammes.

This paste is spread upon the affected area twice a day with a piece of absorbent cotton. It is removed with the aid of cold cream, but not by using liquids. In impetiginous eczema, where the skin is covered with yellow crusts, the same application of gauze, wet with boiled water, is made, and the following ointment is used as soon as the crusts fall off:

℞ Yellow mercuric oxide.....0.50 gramme;
Cerate, ...20 grammes.

In chronic eczema, good results are obtained from the use of a pomade made with two thirds petrolatum and one third of a part of oil of cade.

Some Uses of Chromic Acid in Dermatology.—Sabouraud (*La Clinique*, May 25th) calls attention to the value of chromic acid in three special conditions: (1) In syphilitic glossitis, with fissures and irregularly bosselated surface, the application twice a week to the ulcers and rhagades of a twenty per cent. solution, works a miracle. Of course, constitutional treatment is the main thing, and the local treatment only incidental, but the patient will appreciate the benefit of the latter because it relieves his pain. (2) In syphilis or venereal vegetations of the anus, or the genital organs, the application by an expert hand of pure chromic acid causes prompt shrivelling and disappearance of these growths. It should be applied with the greatest care without any excess. In the hands of those who are not experienced in its use, a twenty per cent. solution is to be preferred. The patient can be instructed to use this himself. (3) In plantar bromidrosis or disagreeable sweating of the feet, a solution

of forty grammes of crystallized chromic acid in one litre of distilled water (4 per cent. solution) gives successful results. The solution is applied like the tincture of iodine by means of a little absorbent cotton, which moistens the entire surface, but particularly the interdigital folds and under the toes. This friction is repeated at first every day, then every second day, and finally every third day. The results are immediate, the fetid odor at once disappears. If it returns, the treatment can be resumed, but the applications should never be more frequent than once daily, for fear of exciting an eruption of the skin.

Indications for Lumbar Puncture.—André Thomas reviews (*La Clinique*, No. 21, 1906) the applications of this therapeutical resource which fulfils two different indications: (1) The subtraction of a certain quantity of cephalorachidian fluid, which is injurious because of quantitative or qualitative changes (excess of tension or the presence of some substance of toxic nature, especially pus), and (2) the introduction of medicinal substances for the purposes of combating certain symptoms; or to oppose some local diseased condition of the cerebrospinal axis or its envelopes. In the former case it is simply a palliative treatment; in the latter a curative or palliative treatment. When used merely as a palliative, as when injections of cocaine are given for the relief of the pains of tabes, or of lumbago, or sciatica, the effect is but temporary and we cannot continue indefinitely to inject remedies into the arachnoid cavity. As regards the curative injections, as when mercurials are employed against syphilitic cerebrospinal disease and tabes; the injection of antitetanic serum, the injection of colloidal silver in meningitis and so on, the cases as yet have been too few to enable us to pronounce definitely as to their value. As regards the first indication, however, the proof is at hand as to the usefulness of this procedure. In cases of hypertension, due to encephalic tumors, congenital hydrocephalus, and in serous effusion attending meningitis, it affords prompt relief. In other cases in which there is also a qualitative change in the fluid, as in tuberculous meningitis, we may obtain relief to some of the symptoms (especially those of hypertension) and also from coma, aphasia, ocular troubles, etc.; but the results are usually transitory, the puncture is, as the rule, purely palliative. In acute, nontuberculous meningitis, on the contrary, the punctures are both curative and palliative. They are directed at once against the hypertension and the toxicity of the infected liquid. This method also may be used in case of meningeal hæmorrhage of the new born, which are attended by cyanosis, convulsions, coma, contractures, and temperature changes. It may likewise be performed as a diagnostic measure in meningeal hæmorrhages in the adult, and it may be followed by relief. Favorable results have been obtained in cases of uræmia of the nervous type, and especially in recent uræmia, also in cardiac asystole with cerebral symptoms; in the headache of secondary syphilis and in eclampsia. Babinski reported good results in auricular vertigo (twenty-one cases improved out of thirty-two). In sunstroke, Dopter has shown that there is hypertension of the cephalorachidian fluid, and this in reported cases explains the benefit derived from lumbar puncture. In conditions in which fracture of the skull is suspected, this method is useful in diagnosticating them from simple contusion. The quantity of liquid to be withdrawn varies from five to ten c.c. up to fifty or eighty c.c., or even more, depending upon the pressure of the liquid. The flow of the liquid should be slow. It may be necessary to repeat the punctures for several days in succession in acute meningitis, taking thirty-six, forty, or fifty c.c. at each time, even in infants.

Effect of Chloroform Inhalation Upon Whooping Cough.—Henri de Rothschild reported the following interesting clinical observation to the Société médicale des hôpitaux of Paris (*Le Bulletin médical*, May 23rd). Subsequent to the administration of chloroform for the reduction of a dislocation of the hip in a child, who was at the same time suffering with whooping cough (eighth day of disease), it was observed that the paroxysms of cough had entirely disappeared. The child was kept under observation for fifteen days longer, and did not have another attack of paroxysmal cough, although he had thirty-nine in one day previous to the chloroform narcosis. The vomiting, congestion of the face, and insomnia also stopped definitely. As a result of this observation, the reporter had, with the permission of the parents, resorted to the same treatment in nine other cases of recent and indisputable whooping cough, characterized by repeated paroxysms of cough, cyanosis, vomiting, etc. The children, aged from two to seven years, were chloroformed with the oxygen inhaler of Guglielminetti. In nine patients the whooping cough was cured; in two of them the paroxysms did not recur after the narcosis; in four, the attacks were at once diminished from twenty-nine to twelve in the twenty-four hours, and disappeared completely on the fourth day. In the last three patients the cure was complete (except in one case) in a maximum of fifteen days. In all of the nine patients the vomiting ceased, the cyanosis did not reappear, and the appetite and sleep returned. The duration of the chloroform administration was five minutes. Complete anæsthesia was not attempted, but merely muscular resolution. The corneal reflex was not sought to be abolished. In none of the cases was it considered necessary to produce anæsthesia a second time. The action of the chloroform was above all antispasmodic. It was not thought that any bactericidal or antiseptic result was obtained. The reporter found a record of a similar case made by Rehfeld, in 1895, who had also observed the cure of whooping cough after chloroform anæsthesia. It was in a child six years of age, who had been under treatment for whooping cough for six months and who was anæsthetized in order to set a fracture of the thigh. It was noticed merely as a coincidence; as the author who observed the case did not attempt to draw any therapeutical conclusion from it. Rothschild, therefore, appears to be the first to have systematically used chloroform anæsthesia in the treatment of pertussis.

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THE AVENUES OF TUBERCULOUS INFECTION.

Bulletin No. 86, recently issued by the Bureau of Animal Industry of the Department of Agriculture, entitled *Experiments with Milk Artificially Infected with Tubercle Bacilli,* by Dr. E. C. Schroeder and Mr. W. E. Cotton, gives an account of certain experiments on guinea pigs and hogs that appear to be of particular significance in their bearing upon the question of how the tubercle bacillus finds a lodgment in the lungs, and we may be warranted in accepting without much reserve the inferences drawn by the investigators mentioned.

The material used was good milk from healthy cows, purposely infected with various preparations of tubercle cultures. Some of the guinea pigs were fed with it, and to others it was administered by intraperitoneal injection. All the animals treated with injections became tuberculous; of the fifty-four that were fed with the infected milk, ten only contracted the disease, and all the ten had been fed with the most virulent of the three preparations used. Schroeder and Cotton are inclined to think that the alimentary canal of the guinea pig is more readily traversed by the tubercle bacilli than that of certain other animals, including man. Surely, however, the infection of nearly one fifth of the animals fed with infected milk shows that the susceptibility of the guinea pig's digestive tract is not trifling.

Infection by way of the alimentary canal in man is regarded by Schroeder and Cotton as of very frequent occurrence; indeed, they seem to look upon aerial infection as uncommon. "Respired infectious material," they say, "comes to rest in the lung on the mucous surface of the bronchial tubes and is then still located on what may be regarded as one of the exterior surfaces of the body. In this location, because of the irritation produced by the material with which it gains entrance—dust, etc.—it has an excellent chance to become enveloped with mucous secretions and to be coughed up and either swallowed or expectorated. This consideration . . . seems to show that tuberculosis due to bacilli that enter the lung with the breathed air is an uncommon affection." Some may doubt this, but it is probably quite true, as the authors remark, that the situation of tuberculous lesions is no guide to the avenue through which the bacillus gained entrance into the system; and they give excellent reasons for the comparative frequency with which the lungs suffer, no matter what the point of entrance may have been. The chief of these reasons is the fact that it is in the pulmonary capillaries that bacilli received into the circulation are arrested. The importance of these observations can hardly be overrated.

TUBERCULOUS INFECTION BY THE DIGESTIVE CANAL.

Schroeder and Cotton (cited in the article entitled The Avenues of Tuberculous Infection) seem entitled to the credit of having worked out a satisfactory explanation of the frequency of the pulmonary localization of tuberculous infection not due to inhalation of the bacillus. From both the clinical and the experimental point of view evidence is growing as to the frequency of such localization.

It is maintained by many good authorities that infantile tuberculous disease of the mesenteric and bronchial glands is the constant result of infection from the digestive tract. When pulmonary lesions occur in calves fed upon milk from tuberculous cows, they have been shown to be secondary to the glandular infection. Vallée, in a contribution to the Congrès de la tuberculose, even declared that the predominance of pulmonary lesions in a subject also having alterations, even though very slight, in the digestive apparatus did not at all warrant the admission that the infection had not been contracted by way of the digestive organs. Experiments upon calves had forced him to the conclusion that, of all the methods of infection, ingestion was the one which most surely led to tuberculization of the bronchial glands. He had also found that penetration of the intestinal wall could be accom-

plished by the tubercle bacillus without producing any appreciable lesion of the intestinal mucosa or of the mesenteric glands.

Calmette and Guérin, at about the same time reported the results of their feeding experiments upon young and adult goats. They were entirely in accord with von Behring's contention that in the immense majority of cases pulmonary tuberculous disease was not contracted by inhalation. They reported that, whereas in the young goats there were always mesenteric lesions precedent to the pulmonary affection, in the adults the bacilli usually left no traces of their passage from the intestine or along the lymph channels, and the pulmonary lesion was apparently primary.

Further evidence is found in a communication to the Paris Academy of Science by H. Vallée, presented by E. Roux (*Bulletin médical*, May 23rd). It is incontestable, in his opinion, that the lesions in the tracheobronchial glands following feeding experiments were the result of infection by the alimentary canal. It is an important observation that in the infant, as well as in the adult, pulmonary infection may occur with tubercle bacilli coming from the intestinal tract without causing appreciable mesenteric lesions. Finally, we must bear in mind the hypothesis of von Behring that many cases of pulmonary consumption in the adult proceed from the reawakening of tuberculous lesions in the bronchial glands, consecutive to infection through the digestive passages in childhood, and not attended by changes in the mesenteric glands.

MILK FROM TUBERCULOUS COWS.

It is now generally accepted that the tubercle bacillus may exist in the milk of cows which do not present any tuberculous lesion of the udder and of which the careful physical examination affords no evidence to warrant any suspicion of the infective character of the milk. It is only by the application of the tuberculin test that the discovery is finally made that the animal is tuberculous. In his recent monograph upon *General and Applied Hygiene* Panisset insists that the ingestion of such infected milk constitutes a grave danger both to man and the lower animals. Koch's theory of an essential difference between the bovine and human tubercle bacillus, and the consequent nontransmissibility of the animal disease to the human subject, has been made to appear very doubtful. Infection through the digestive tract is certainly more common than was formerly supposed, and the presence of tubercle bacilli in the mesenteric glands is of rather frequent occurrence.

Prophylactic measures are therefore to be considered. In spite of the common opinion that thorough boiling of the milk will render all virulent bacteria innocuous, this appears open to criticism. In a recent communication Calmette (*Clinique*, No. 8) declared that physiological experiment had shown that young animals rapidly became tuberculous when fed upon milk containing Koch's bacilli, even when the milk had been sterilized and consequently contained only dead bacilli. He, therefore, declared the use of milk derived from tuberculous cows as dangerous, even though sterilized.

Among the prophylactic measures deemed most effective, Panisset, in addition to the ordinary supervision to guard against fraudulent and injurious additions to milk, advocates systematic testing for bacilli by the inspectors. The application of the tuberculin test to all dairy herds and the elimination of every animal giving a clear and positive reaction are desirable, but that is attended by immense practical difficulties. One of the chief of these is the acknowledged frequency of bovine tuberculous disease in certain regions. In the department of the Seine, for instance, it is estimated that 43.79 per cent. of the cows are tuberculous. There is, however, one measure which has been successfully carried out in this country. It is the periodical sanitary inspection or permanent medical supervision of the dairies and the removal of every animal found to be tuberculous.

PARALYSIS FROM THROMBOSIS OF THE VERTEBRAL ARTERY.

Reporting a case of his own and collecting a number of similar cases that are on record, Müller (*Deutsches Archiv für klinische Medicin*, lxxxvi 4, 5; *Berliner klinische Wochenschrift*, July 16th) argues that they exemplify a type which should be distinguished from the usual form of bulbar paralysis. His patient was a man, forty-six years old, who for years had suffered with paroxysms of headache and brief attacks of vertigo. One evening, after having had severe headache for several days, the man fell down. He did not lose consciousness, but from that time on he was unable to walk. After a few days paralysis of deglutition set in, with pronounced hoarseness. There was marked ataxia of the right arm and leg, the right vocal cord was paralyzed, and there was heightened sensitiveness to heat and pain in the right half of the face and the left half of the body. The man died in consequence of aspiration pneumonia. At the post mortem examination there appeared decided sclerosis of the

cerebral arteries and thrombosis of the right vertebral artery extending as far as its junction with the basilar. As the result of this thrombosis, there was softening for the whole length of the medulla oblongata, reaching to the beginning of the pons Varolii.

The author seeks to establish the connection of the symptoms observed with these anatomical lesions. He finds thrombosis to have been present in all the recorded cases in which like nervous derangements were noted. He says that crossed hemianalgesia is characteristic of disease of the medulla oblongata, but is occasioned only by a narrowly circumscribed lesion of this division of the brain. There is, therefore, in addition to bulbar paralysis κατ' ἐξοχὴν, another typical bulbar disease, and in this form precisely those portions of the medulla oblongata are affected which remain free in glossolabial paralysis.

THE TRAINED NURSE AND CONTAGIOUS DISEASES.

At the ninth annual convention of the Nurses' Associated Alumnæ Miss Julia E. Reed, superintendent of registry of the Boston Nurses' Club, read a paper entitled Are Nurses Refusing Contagious Cases? It is published in the September number of the *Trained Nurse and Hospital Review.* In reality the author deals with something more than the doubt expressed in the title of her article, and in fact no such doubt exists; she treats of the extent to which nurses refuse to serve in cases of contagious disease, taking up the question of whether or not so many decline as to make the supply inadequate and that of whether or not there is danger that the trained nurses' avoidance of contagious cases may lead to the occupation of a neglected field by others.

Speaking from her own local observation, Miss Reed says: "Although we are able to fill all such calls here, except in very rare instances, the small percentage registering for them [contagious diseases] from those training schools giving chiefly theoretical teaching in contagious nursing indicates a probable scarcity of nurses in places remote from contagious hospitals." It appears that about sixty per cent. of Miss Reed's nurses are not registered as ready to undertake contagious cases. Lack of experience is often given as a reason for declining to serve, and chiefly by graduates of schools in which the care of patients with contagious diseases is taught almost wholly from the theoretical point of view.

"Some of the older graduates of schools which do give training in contagious cases refuse them on account of changes in the methods of treatment," says Miss Reed, and she adds that this is especially true of diphtheria. The propriety of their declining for such a reason does not seem clear to us, but there may be considerations which Miss Reed thinks it unnecessary to set forth. Diphtheria figures prominently in connection with another reason given for declining the care of persons with contagious disease, that of the nurses' own susceptibility to contagion. It is certainly every nurse's right and duty to seek to preserve her own health by avoiding exposure to contagion. However, there are very few nurses who give this reason for declining. Nurses who do much surgical or obstetrical work, says Miss Reed, find it advisable to decline contagious cases. Indeed it is not only "advisable" that they should decline for such a reason, but in the highest degree creditable to them that they make a sacrifice to avoid conveying contagion.

Finally, financial considerations seem to be at the bottom of much of the difficulty. This is not to be wondered at. It seems impracticable for nurses to obtain a higher rate of remuneration in contagious than in other cases; yet, if they accept such cases, they almost inevitably incur loss of time and loss of remunerative employment by reason of the resulting "quarantine," amounting to a week in each case according to Miss Reed. It appears to us that nurses should not be blamed for declining to undertake contagious cases, provided their unwillingness to take them is made known at the time of their registration. At the same time, every possible means should be resorted to to insure at all times an adequate number of nurses fitted and willing to serve in such cases.

ALLEGED CURES FOR CANCER.

"Some fool had revived tar water," said the late Mr. Charles Dickens in one of his novels. At least that is the purport of Dickens's remark; we do not profess to have given his precise words. The application is perennial, for the public ever grasps with avidity at any old and exploded theory that some ingenious and insinuating person seeks to revive. The statement applies particularly with regard to incurable disease. The ordinary man refuses to believe that he is himself the subject of an incurable disease. Be it cancer; he is convinced that to-morrow's newspaper will tell him of a sure remedy. We of the medical profession all look forward in confidence to the day when cancer shall have been made amenable to treatment of a positively curative kind, but experience has taught us to feel that that day will come only after much experimental work

along other than therapeutical lines. Not so does the layman look at the matter; he counts on a sudden lucky stroke. Unfortunately, some of the popular publications are doing their utmost to give quasiscientific support to this conviction, though they must generally be skeptical themselves if not absolutely insincere.

One would suppose that all sorts of caustics and solvents had been tried in the treatment of cancer to the point of actually demonstrating their futility; yet a well known digestive principle is at present proclaimed a sovereign remedy for cancer. A minimum of clinical observation is put forward in support of the contention—observation incomplete in character as well as trifling in amount. All this is seized upon with avidity by the public, and we look to see some organic preparations advance in price. Then there are other vaunted remedies the nature of which is kept secret while their virtues are predicated on the novelty of their composition. It is either a very new remedial agent or a very old one revived that most commends itself to the laity.

All this fallacious promotion of false hopes does more than negative harm; it leads to the neglect of operative intervention until the time has passed when substantial benefit could be expected from it. We may have our various individual conceptions of the way in which cancer is finally to be mastered, but for the present there is but one means that we can conscientiously recommend, and that is the knife. Too often it fails, but in a fair proportion of cases it proves efficient, and that is more than can yet be said of any other resource.

THE GOVERNMENT HOSPITAL FOR THE INSANE.

We have never felt that there was good reason for the charges made some months ago to the effect that this institution was mismanaged, and we have so stated. But the charges have been made the subject of inquiry by a special committee of the House of Representatives, and we learn that the committee's report will be ready for submission to the House when it assembles in December. Of course the tenor of the report has not yet been made known, but it is known that there are certain items in the testimony taken that should prove highly gratifying to the superintendent of the hospital, Dr. White. Notable among them was the declaration by Dr. D. Kerfoot Shute that, on his motion, Dr. White had unanimously been made a member of the Medical Society of the District of Columbia "by invitation." Dr. Shute went on to say that such action on the part of the society constituted an unusual honor and should be regarded as in the nature of a protest against the charges and an expression of confidence in Dr. White. The support of one's professional brethren under trying circumstances is most sustaining, and we are glad that Dr. White has received it in this pronounced form.

THE EMPIRICAL FORMULA.

In answer to an inquiry from a prospective purchaser living at a distance, a real estate broker might describe a house as made up of so many cubic yards of granite, so many thousand bricks, so much mortar, so much timber, planks, and laths, so much plaster, so much hard wood, so many tiles, and such an amount of some specified roofing material. The description would probably be accurate, for in all likelihood it would have been made up from the architect's estimates, and it would be fairly exhaustive; but the man to whom it was sent might feel as if he had asked for bread and received a stone.

In what other light can one look upon an empirical chemical formula of a somewhat complex compound? A list of ultimate constituents, with the number of atoms of each, gives no adequate notion of the real structure of the compound. Yet sometimes such is the only formula published of a substance recommended for medicinal use. Writers who have occasion to mention the compound cannot be blamed if they give no better formula than the one published by its discoverer, but the latter should be expected to furnish the structural formula.

TIMING THE ACTION OF MEDICINES.

Cooks realize the necessity of exposing their various products to the fire at such precise moments as to insure their being "done" at the very time that they are to be taken to the table; the pudding must not be ready at the same time as the roast. Of equal importance is it in many instances to administer drugs with reference to the time at which their action is desired. For the most part, of course, the question is one of convenience, but that is not always the case. As regards quinine, for example, when it is given for the cure of malarial fever, it almost makes the difference between success and failure whether or not it is administered at the proper time relatively to the expected paroxysm. This is well known. But there is importance in the mere matter of convenience. In the absence of special indications to the contrary, he who directs a patient to take at bedtime a cathartic of quick action interferes unnecessarily and therefore stupidly

with the patient's sleep, and is in great danger of being dismissed. It is attention to such apparently small matters that often decides the physician's status with a family.

News Items.

NEW YORK CITY AND STATE

The New York Polyclinic Medical School and Hospital.—Dr. William Seaman Bainbridge has been elected adjunct professor of surgery, and has been assigned to one of the clinics in that department, in this institution.

The Elmira, N. Y., Academy of Medicine.—The following programme was arranged for a meeting held on Wednesday, September 5th: Infantile Scurvy, with report of cases, Dr. C. W. M. Brown, Elmira; Anæsthesia, Chloroform, Dr. W. S. Cobb, Corning, N. Y.; Tumor of Stylopharyngeus Muscle with Removal, Dr. Sherman Voorhees, Elmira.

The Floating Hospital of St. John's Guild.—According to the Brooklyn *Daily Eagle* for September 2nd, St. John's Guild has had one of the heaviest seasons in its history, not only on account of the large numbers of mothers with babies and children who have come to its floating and seaside hospitals for treatment, but because of the unusual number of critically sick cases. To meet the need for this service, which still exists, it has been decided to keep both hospitals in operation for a longer period than usual. The floating hospital will continue its daily trips until September 8, the Saturday before the public schools open. The seaside hospital at New Dorp, Staten Island, will keep open indefinitely, or as long as there are funds to continue its work. Thus far the floating hospital has carried over 36,000 women and children and the seaside hospital has admitted over 2,500 patients, for an average stay of ten days.

Society Meetings for the Coming Week:

MONDAY, *September 10th.*—New York Academy of Sciences (Section in Chemistry and Technology); New York Medicohistorical Society (private); New York Ophthalmological Society (private); Medical Association of the Greater City of New York; Society of Medical Jurisprudence, New York; German Medical Society of the City of New York; Corning, N. Y., Medical Association; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private).

TUESDAY, *September 11th.*—New York Medical Union (private); Buffalo Academy of Medicine (Section in Medicine); Rome, N. Y., Medical Society; Medical Society of the County of Rensselaer, N. Y.; Newark, N. J., Medical Association (private); Trenton, N. J., Medical Association; Clinical Society of the Elizabeth, N. J., General Hospital and Dispensary; Northwestern Medical Society of Philadelphia; Practitioners' Club, Richmond, Ky.

WEDNESDAY, *September 12th.*—Medical Society of the Borough of the Bronx, New York; New York Pathological Society; American Microscopical Society of the City of New York; Society of the Alumni of the City (Charity) Hospital, New York; Philadelphia County Medical Society; Lenox, Mass., Medical and Surgical Society (private).

THURSDAY, *September 13th.*—Society of Medical Jurisprudence and State Medicine, New York; Brooklyn Pathological Society; Medical Society of the County of Cayuga, N. Y.; South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia; Church Hill Medical Society of Richmond, Va.

FRIDAY, *September 14th.*—Yorkville Medical Association, New York (private); German Medical Society of Brooklyn; Medical Society of the Town of Saugerties, N. Y.

PHILADELPHIA AND THE MIDDLE STATES.

Antivaccination Society.—The committee on permanent organization of the State League of Antivaccination Societies met on August 27th, and considered plans for amalgamating all the like societies in the State, and to discuss the advisability of taking the matter of compulsory vaccination into the present political campaign. The State conference will meet in Philadelphia, September 12th and 13th.

Scientific Society Meetings in Philadelphia for the Week Ending September 15, 1906.—Monday, September 10th, Wills Hospital Ophthalmic Society. Tuesday, September 11th, Kensington Branch, Philadelphia County Medical Society. Wednesday, September 12th, Philadelphia County Medical Society. Thursday, September 13th, Pathological Society. Friday, September 14th, Northern Medical Association.

The Gloucester County, New Jersey, Medical Society.—The next regular meeting of this society will be held at Evergreen Hall, Woodbury, N. J., on Thursday, September 20, 1906. This is the society's regular "social session," at which it entertains the wives of the members and other invited guests, and it is a social function entirely. This social session originated in 1898, when the society celebrated its eightieth anniversary by an elaborate programme, and had a large number of guests. The affair was such a pleasant one that the society decided to continue it, on a somewhat smaller scale, and the September meeting has been devoted to this purpose ever since. Members of other societies who have been present at these meetings have found them so pleasant that the custom has been copied by several other societies.

The Cumberland Valley Medical Association.—At the fourth annual meeting held at Chambersburg, Md., on Tuesday, September 4th, the following programme was presented: A paper on Medical Science Professionally Applied, by Dr. E. T. Bishop, of Smithburg, Md., and one on Directions for Confinement Cases, by Dr. Victor D. Miller, Jr., of Hagerstown, Md., and a symposium on Unusual Obstetrical Experiences, contributed to by Dr. A. S. Mason, Dr. W. B. Morrison, and Dr. D. A. Watkins, of Hagerstown; Dr. V. M. Reichard, of Fairplay, Md.; Dr. E. T. Bishop, and others. A banquet followed the scientific portion of the exercises, Dr. L. H. Keller, of Hagerstown, acting as toastmaster. Dr. E. A. Wareham, Dr. W. B. Morrison, of Hagerstown; Dr. S. S. Davis, of Boonsboro, Md., and Dr. V. M. Reichard, of Fairplay, were among those on the programme to respond. Dr. C. F. Palmer, of Chambersburg, was elected president. The Blue Mountain House was chosen as the place of meeting next year.

The Reading (Pa.) Medical Association.—At the monthly meeting held on Tuesday, August 28th, the annual election of officers took place and resulted as follows: President, Dr. I. G. Shoemaker; vice-president, Dr. Oan G. Thompson; secretary, Dr. Clara Shetter-Keiser; treasurer, Dr. Thomas H. Mackin; curator, Dr. C. A. Detwiler; censors, Dr. F. W. Frankhauser, Dr. Israel Cleaver, and Dr. Daniel Longacre; representative to Board of Managers of the Reading Hospital, Dr. A. S. Raudenbush. All were elected unaimously, and after the election the president appointed a scientific committee, consisting of Dr. R. K. Weber, Dr. I. G. Shoemaker, and Dr. John W. Kauffman. In the absence of President Thompson, Dr. Israel Cleaver was elected president pro tem., while Dr. Clara Shetter-Keiser, reelected secretary of the society for the fourth term, had charge of the minutes. She also read the president's paper on Cholera Infantum.

The Health of Philadelphia.—During the week ending August 25th, the following cases of transmissible disease were reported to the bureau of health:

	Cases.	Deaths.
Malarial fever	1	0
Typhoid fever	105	12
Scarlet fever	15	3
Chickenpox	2	0
Diphtheria	29	4
Cerebrospinal meningitis	3	2
Measles	8	1
Whooping cough	38	17
Tuberculosis of the lungs	102	58
Pneumonia	19	16
Erysipelas	6	1
Septicæmia	2	0
Tetanus	1	0
Mumps	1	0
Cancer	16	21

The following deaths were also reported: Tuberculosis, other than tuberculosis of the lungs, 9; cholera morbus, 3; diarrhœa and enteritis, under two years of age, 77. The infant mortality was 161, under one year of age, 130, and between one and two years of age, 31. The whole number of deaths was 481, corresponding to an annual death rate of 17.02 in a thousand, in an estimated population of 1,469,126. There were 32 stillbirths, males 16, and females 16. The temperature was moderate, the humidity was high, and 4.27 inches of rain fell.

BOSTON AND NEW ENGLAND.

The Portland (Me.) Medical Club, with Dr. H. S. Emery as host, held a meeting at the Columbia Hotel on the evening of Thursday, September 6th. A paper entitled A Review of Some Old Theories was read by Dr. F. W. Searle.

The Wentworth Hospital, Dover, N. H., the gift of the late Arioch Wentworth, of Boston, was dedicated on August 30th. The hospital is a two story brick structure, built and equipped at a cost of about $100,000. It will accommodate about one hundred patients.

The Woronoco Surgery, an Addition to the Noble Hospital, at Westfield, Mass., was dedicated on August 29th. The surgery was built at a cost of $37,000, and is a thoroughly up to date surgical hospital, with accommodations for thirty patients. The entire plant at Noble Hospital represents with its equipment a total cost of over $90,000, and there is provision for caring for seventy patients, including Keep memorial building for contagious diseases. The original building was the bequest of Reuben Noble, and was erected in 1897, and the Keep building was the gift of Mrs. Louisa Keep, and was erected in 1903.

The Framingham Hospital and Training School for Nurses, at South Framingham, Mass., is about to lose its superintendent, Miss Annabel L. Stewart, who has been at the head of the dual institution for nearly twelve years, and who goes now to take up work in another field. Her resignation is to take effect after the annual meetings of the corporations in October, 1906. In filling the place thus made vacant, the committee who has the matter in charge will try to secure the services of a woman physician. The hospital is very well situated for its work, as South Framingham is quite a railroad center. The institution has just been the recipient of a fine new nurses' home, the gift of Messrs. Frank A. and Henry B. Day, of West Newton, Mass., formerly of South Framingham, as a memorial to their parents.

BALTIMORE AND THE SOUTH

Personal.—Dr. Frank M. Ridley, of La Grange, Ga., has been appointed chief surgeon of the Atlanta and West Point, Ga., Railroad, to succeed the late Dr. Hunter P. Cooper, of Atlanta.

The Medical and Chirurgical Faculty of Maryland will hold its semiannual meeting at Annapolis, on Friday and Saturday, September 28th and 29th. An address on Leprosy will be given by Passed Assistant Surgeon P. S. Rossiter, United States Navy. The visitors will be entertained by the Anne Arundel County Medical Society.

The Tri-State Medical Society of Georgia, Alabama, and Tennessee, will hold its eighteenth annual meeting at Chattanooga, Tenn., on Tuesday, Wednesday, and Thursday, October 2nd, 3rd, and 4th. The officers of the society are: Dr. A. B. Cooke, of Nashville, president; Dr. W. D. Haggard, of Nashville, first vice-president; Dr. A. A. Davidson, of Augusta, Ga., second vice-president; and Dr. W. P. McAdory, of Birmingham, Ala., third vice-president; Dr. Raymond Wallace, of Chattanooga, secretary and treasurer.

CHICAGO AND THE WEST

Personal.—Dr. R. H. Davies, who for the past two years has been associated with the Travelers' Insurance Company, at the home office in Hartford, Conn., has removed to Chicago, where he will devote his time to work connected with insurance interests for several of the leading companies.

A Munificent Bequest to the Lloyd Library of Cincinnati.—It is announced that by the will of the late Surgeon General James P. Walker, of England, the Lloyd Library receives the sum of $30,000 and the entire library owned by the distinguished surgeon. The collection of books and manuscripts is known to scientists as one of the most valuable private collections. The Lloyd Library, which is free to the public, and is devoted to botany, pharmacy, materia medica, and allied sciences, was founded by Mr. John Uri Lloyd and Mr. Curtis Gates Lloyd.

Sanitation in Chicago Barber Shops.—The health commissioner of Chicago has set down the following rules for the government of barber shops: *For each shave—free or not—one towel. All shaving mugs must be antiseptic. Barbers making change and handling money must wash their hands.* Barbers often do not use a separate towel for each customer, says the commissioner, though they should do so. The customer cannot always see from his chair what is going on. There is more danger of the spread of disease in this way than any other. Use of one towel for two patrons must be prevented.

The Hempstead Academy of Medicine, Portsmouth, Ohio.—In our issue of July 21st, it was announced that this academy would in future hold an extra meeting monthly, in addition to its regular meetings, for the presentation of clinical cases, specimens, etc. This new arrangement has gone into effect and the extra meetings are held at the residence of some member, the regular meetings being held as usual at the Carnegie Library. At the last semimonthly meeting, held on Monday, August 27th, the subject for discussion was Autoinfection, which was introduced by Dr. J. S. Rardin and discussed by several others present.

The Central Tri-State Medical Association, which is composed of physicians of West Virginia, Kentucky, and Ohio, has heretofore held its meetings either at Huntington, W. Va., Catlettsburg or Ashland, Ky., or at Ironton, Ohio, will this year depart from its usual custom and will hold a meeting at Portsmouth, Ohio, on Thursday, October 18th, under the presidency of Dr. George M. Marshall. The following programme has been arranged for the meeting: A paper on Leucocytes and Indications for Treatment, by Dr. J. D. Mutters, Rush, Ky., to be discussed by Dr. H. A. Schirrmann, Portsmouth, Ohio, Dr. W. F. Marting, Ironton, Ohio, and Dr. J. D. Williams, Catlettsburg, Ky.; Atropine, by Dr. Smithfield Keffer, Ashland, Ky.; Atropine: Its Specific Effects and Therapeutic Indications in Ocular Diseases, by Dr. George M. Marshall, Portsmouth, Ohio; Appendicitis in Private Practice, by Dr. Lester Keller, Ironton, Ohio, to be discussed by Dr. J. S. Rardin, Portsmouth, Ohio, Dr. R. B. Hall, Cincinnati, and Dr. A. S. Brady, Greenup, Ky.

GENERAL.

British Medical Association Members Honored by the University of Toronto.—There was much dignity in the simple and yet stately ceremony at convocation hall on August 23rd, says the Toronto *World* for August 24th, when a number of the more distinguished members of the British Medical Association were invested with the doctorate of laws by the University of Toronto. The degree was conferred upon Dr. Clifford Allbutt, Dr. A. H. Freeland Barbour, Sir Thomas Barlow, Sir James Barr, Sir William Broadbent, Dr. George C. Franklin, retiring president of the association; Dr. Dobinson Halliburton, Sir Victor Horsley, Dr. Donald MacAlister, Dr. Julius Mickle, Dr. Lapicque, of Paris; Dr. Aschoff and Dr. W. J. Mayo, president of the American Medical Association. It was announced that McGill University would at the first convocation confer in absentia the honorary degree of LL.D. on Sir Thomas Barlow, Sir William Broadbent, Dr. Clifford Allbutt, and Sir Victor Horsley.

The American Orthopædic Association.—At the annual meeting held at Toronto, on August 20th-23rd, the election of officers resulted as follows: President, Dr. Joel E. Goldthwait, Boston; first vice-president, Dr. Henry Ling Taylor, New York; second vice-president, Dr. Ansel G. Cook, Hartford, Conn.; secretary, Dr. Robert B. Osgood, Boston; treasurer, Dr. E. G. Brackett, Boston; executive committee, Dr. John Ridlon, Chicago; Dr. W. R. Townsend, New York; Dr. H. Augustus Wilson, Philadelphia; Dr. Goldthwait and Dr. Osgood are also members exofficio. It was decided to hold the next annual meeting in Washington, D. C., as a section of the Congress of American Physicians and Surgeons. Upon the retirement of Dr. John Ridlon from the office of secretary, which he has filled for fifteen years, Dr. H. Augustus Wilson and Dr. R. W. Lovett, of Boston, were selected a committee to arrange for a suitable token to be extended to Dr. Ridlon, expressing the association's appreciation of his long service.

Meetings of National and State Medical Associations During the Month of October, 1906:

NATIONAL.

American Association of Railway Surgeons, annual meeting at Chicago, October 17th, 18th, and 19th.

STATE.

Idaho State Medical Society, annual meeting at Lewiston, October 4th and 5th.

Kentucky State Medical Association, annual meeting at Owensboro, October.

Vermont State Medical Society, annual meeting at Barre, October 11th and 12th.

Medical Society of Virginia, annual meeting at Charlottesville, October 9th, 10th, and 11th.

Pith of Current Literature.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

August 30, 1906.

1. A Contribution to the Chemistry of the Bacterial Cell and a Study of the Effects of Some of the Split Products of Animals (*To be continued*), By VICTOR C. VAUGHAN.
2. The Care of Far Advanced Cases of Pulmonary Tuberculosis, By SHERMAN G. BONNEY.
3. Subpectoral Abscess, By JOHN H. MUSSER.
4. Fracture of the Metatarsal Bone in Inversion, By F. J. COTTON.

2. The Care of Far Advanced Cases of Pulmonary Tuberculosis.—Bonney says that modern opinion regarding the rational management of consumption relates to the consideration of a suitable régime, embracing rest, outdoor air, and superalimentation. If these principles are worthy of detailed application for incipient pulmonary invalids, it must follow that still more completely ought they to be elaborated with reference to far advanced cases. He speaks of (1) the attitude of the physician in assuming the responsible direction of the patient; (2) the necessity for energy, infinite patience, and regard for the smallest detail in the protracted period of observation; (3) fresh air and rest combined; (4) principles of diet; (5) the management of fever. The measures which he is in the habit of employing are (1) the most complete interpretation of the rest treatment and (2) the use of the antistreptococcic serum. Of the antistreptococcic serum the author says that a considerable experience has emphasized his conviction as to its utility in desperate cases failing to exhibit improvement through other means. While thoroughly cognizant of some of the disadvantages attending its employment, he has thus far seen no valid reason to discountenance its administration in properly selected cases. About one case out of every four or five may be reasonably expected to exhibit a pronounced diminution of temperature by the end of a week or ten days. The remaining cases do not show any bad results from its employment, other than due to the occasional intolerance of the system for the serum of a horse. This so called reaction which is independent of the specific nature of the remedy, but common to all other serum preparations, bears no relation to the ultimate results obtained. Some cases show marked improvement in spite of temporary discomfort in the way of chills, fever, urticaria, and painful swelling with stiffness of the joints, while others exhibit no improvement, although there is entire absence of constitutional disturbance. Reaction may take place within twelve hours after the use of the serum or it may be delayed for six weeks. Occasionally the improvement is delayed indefinitely until the occurrence of the reaction, following which there may be complete and enduring subsidence of the fever. As a result of the serum the temperature either may subside to normal or may be reduced several degrees, remaining, however, somewhat elevated.

3. Subpectoral Abscess.—Musser remarks that subpectoral abscess is seen in both the acute and the chronic forms. Of the chronic form he reminds us that it is seen as so called cold abscess, due to tuberculosis or in rare instances to actinomycosis. The symptoms of the acute form are local and general. The characteristic of subpectoral abscess is the small amount of local pain symptoms and the great intensity and virulence of the general phenomena. These are followed by swelling, and a large mass is felt underneath the pectoral muscles. The general symptoms antedating or corresponding in time with the local symptoms, are those of intense infection—chills, high fever out of all proportion to the local conditions—a high leucocytosis, the diazo reaction and if the symptoms continue three or four days or a week, there will be the usual infectious albuminuria.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

September 1, 1906.

1. The Distribution of Afferent Nerves of the Skin, By Professor MAX VON FREY.
2. A Résumé of the Therapeutical Field for the Past Year. Chairman's Address Before the Section in Pharmacology and Therapeutics at the Fifty-seventh Annual Session of the American Medical Association Held at Boston, By THOMAS F. REILLY.
3. Health Inspection as Applied to the Individuals. By LOUIS FAUGERES BISHOP.
4. Some Truth About Sleep, By NORMAN BRIDGE.
5. The Treatment of Thyreoidism by a Specific Serum, By JOHN ROGERS.
6. A Serum Having Therapeutical Value in the Treatment of Exophthalmic Goître, By S. P. BEEBE.
7. The Surgical Treatment of Exophthalmic Goître, By FRANCIS J. SHEPHERD.
8. A Study of Convergence and Its Defects. Including an Analysis of Four Hundred and Forty-one Cases of Exophoria, By WENDELL REBER.
9. Cerebral Decompression. A Palliative Operation in the Treatment of Tumors of the Brain (*To be continued*), By WILLIAM G. SPILLER and CHARLES H. FRAZIER.
10. Pharmacopœial or Proprietary Preparations: Which? By JOHN RITTER.

1. The Distribution of Afferent Nerves in the Skin.—Von Frey remarks that the sensory functions of the skin are based on four fundamental qualities mediating the sensations of warmth, cold, touch, and pain. Careful investigations have placed it beyond doubt that corresponding to these functions the nerve supply to the skin must be a fourfold one; there are terminal organs of specific function. To use a rather systematic but illustrative expression, the author continues, it can be said that the surface of the skin is divided into a very large number of minute areas or patches, each of which represents the field of distribution of the nerve fibres, belonging to one or other of these four qualities. According to a rough estimate, there are on the skin of the trunk and limbs about 30,000 warm spots, 212,000 cold spots, and half a million of touch spots, while reliable determinations as to pain are wanting; the reasons for this deficiency are manifold, one being, no doubt, the richness of the skin in nerve fibres of this sort. The author refers to Dr. Head's observations and experiments, and the conclusions drawn from them.

3. Health Inspection as Applied to the Individual.—Bishop compares the human body to a complicated machine. Nobody would think of running such a machine without an annual inspection and overhauling of those slight defects which, if neglected, lead to a serious breakdown. The same should be the case with the individual, who should be trained to employ his physician to watch his physiological processes in the same way as the public has come to expect the medical profession to watch over the health of the community. Every person should possess a record of his physiological standards and peculiarities for reference in case of suspected disease.

4. Some Truths About Sleep.—Bridge says that the medical profession teaches that not one person should spend less than one third of his existence in sleep, and that it insists that children especially must have an abundance of sleep or be in peril of nervous and mental bankruptcy. The author speaks of insomnia, or rather insomniphobia; we should go to bed to rest the tired body and let sleep come as an incident; rest of the body should be the chief aim. This rule the great class of sufferers from insomnia should learn. Our rest should be taken in a horizontal posture. Light can be kept out

of the room, but not noises. For this nuisance an air tight, nonvibrating stopper for the ears is the best, such a material is common paraffin.

5, 6. **The Serum Treatment of Thyreoidism.**—Rogers observes that the atypical form of exophthalmic goitre is common and often overlooked on account of the nomenclature. He, therefore, divides thyreoidism into five groups: 1. Simple chronic exophthalmic goitre or thyreoidism; 2, atypical thyreoidism; 3, chronic toxic cases of thyreoidism; 4, acute toxic thyreoidism; and 5, psychopathic or neuropathic cases of thyreoidism. The symptoms of the different types are then given, followed by a description of the manufacturing of an antitoxic or antithyreoidal serum, obtained by inoculating rabbits, dogs, or sheeps with the combined nucleoproteids and thyreoglobulin separated from the normal human gland. Ninety patients were thus treated, of whom twenty-three have been cured of all symptoms of thyreoidism, fifty-two have been more or less improved, and eleven have failed to improve so far, and four have died. As to prognosis of the injections the author says that first the kind of thyreoid possessed by the patient and next the duration of the disease and its clinical type should be taken into consideration. The patients who have soft thyreoids respond more easily to the serum, while the acute toxic cases with fever seem to do the best with the least serum and at the same time show the least reaction. The chronic toxic types with severe symptoms present the worst prognosis. Only in the rare acute cases can quick results be expected, and thus there is a long period of convalescence before recovery is complete. The majority of the patients respond very slowly, and several weeks may elapse before they are evidently improved.—Beebe describes the preparation of the serum experimented with by himself and Dr. Rogers. He concludes in saying that he believes that the serum is an agent of considerable value in the medical treatment of exophthalmic goitre. It has been treated in all manner of cases in which it was possible to make a diagnosis, and in some cases in which the diagnosis was doubtful. Only a comparatively small proportion of these had been of recent development. A small proportion of trials resulted in failure, a much larger number in improvement, while an encouraging number of individuals have been completely cured.

7. **The Surgical Treatment of Exophthalmic Goitre.**—In contrast with the preceding reports, Shepherd speaks of the surgical treatment of exophthalmic goitre. He reminds us that the treatment of exophthalmic goitre by operation is a comparatively recent procedure. In many cases operation is contraindicated, while in others operative measures result often in complete cure, or almost always in improvement. The cause of this disease, continues the author, is not yet sufficiently established, but that many cases are caused by an excess of thyreoid tissues is self evident. He is of the opinion that early operations are the safest, and that the class of cases most likely to benefit are those in which the gland is more enlarged on one side than another, in which there is a more definite tumor formation, in which the gland is not excessively vascular, and in which the enlargement has preceded the symptoms of Graves's disease by months, and perhaps by years. The cases in which operation should be avoided are those of large vascular thyreoids in which there are definite febrile exacerbations, excessive trachycardia, with acute dilation of the heart, precardial distress, gastric and abdominal pain, vomiting and diarrhœa, perspirations, sense of suffocation, great restlessness, œdema of the feet, in fact, all the symptoms of toxæmia due to thyreoidism. There is a description of seventeen cases, with three deaths, all in desperate cases; nine patients were completely cured; three much improved; one relapsed; and one was lost sight of.

8. **A Study of Convergence and Its Defects. Including an Analysis of 441 Cases of Exophoria.**—Reber says that exophoria as a symptom producing quantity has come to the point where it must be viewed as an atavistic phenomenon, a reversion to a lower type, astigma of degeneration. All the advantages of binuocular stereoscopic vision are conditioned on convergence only, which may be said to be composed of mainly two elements, the initial or tonic convergence and the accommodative convergence. In treating a patient, the average patient having somewhere between ten and eleven metre angles of convergence, the amplitude of convergence ought to be always calculated. Nine tenths of all cases of exophoria will be encountered in individuals over twenty years of age, while it is about equal in males or females. It assumes three principal forms, a, asthenic exophoria (convergence insufficiency); b, anatomical exophoria (sthenic exophoria); and, c, neurasthenic exophoria. The treatment should comprise: Right living; careful refraction; convergence training; prisms (bases in) for infinity, and for the reading glasses only; tenotomy or advancement.

10. **Pharmacopœial or Proprietary Preparations: Which?**—Ritter makes the following remark: If the physician would devote about one half an hour each week looking over the United States Pharmacopœia, a good dispensatory, the National Formulary, or a standard work on materia medica or therapeutics, he would soon acquaint himself with good, reliable, and accurate formulæ and remedies, preparations which he need not hesitate to prescribe; preparations on which he could rely at the bedside, when, after all, the supreme test of the physician's skill must be demonstrated; and instead of continually racing after strange gods it would eliminate from his mind all the various uncertain compounds and mixtures, nostrums, with which he is now burdened. Such a time would be well spent. It would familiarize the physician with many a good medicament, and teach him its composition, and, most important of all, it would teach him what he might expect from it therapeutically. The difficulty lies in this: The average physician devotes too little study to materia medica and therapeutics.

MEDICAL RECORD

September 1, 1906.

1. Japanese Naval Sanitation, By Baron K. TAKAKI.
2. Remarks on Banti's Disease (Splenomegalia and Cirrhosis of the Liver). By MAX EINHORN.
3. A Brief Résumé of the World's Recent Cancer Research, By WILLIAM SEAMAN BAINBRIDGE.
4. Habitual Constipation, Viewed from the Standpoint of Modern Evolution of Dietetics, is a Physiological Phenomenon. By C. D. SPIVAK.
5. Acroparæsthesia: A Study of Two Hundred Cases, By W. W. LESEM.
6. Report of Two Cases of Varicose Veins Successfully Treated with the X Ray, By JAMES C. MCGUIRE.

2. **Remarks on Banti's Disease (Splenomegalia and Cirrhosis of the Liver).**—Einhorn gives a full review of the history of Banti's disease, and reports eighteen cases which have come during the last twelve years under his observation. He tabulates them into three groups: 1, Pure form, splenomegalia, anæmia, cirrhosis of the liver, ascites; 2, hæmorrhagic form, showing in addition to the symptoms just enumerated, gastric and intestinal hæmorrhages; and, 3, splenomegalia, enlargement of the liver, anæmia, sometimes associated with grave gastric symptoms. Regarding treatment, Einhorn says, we must consider with which group and stage of the disease we have to deal. In groups 1 and 2 during the preascitic stage extirpation of the spleen might be considered, as first recommended by Banti. If operation is not decided upon, then x ray treatment would be desirable. He has had good results with this treatment in one case of Banti's

disease and in two cases of pseudoleucæmia splenica. The splenic tumor was reduced in these cases to such a degree that it could be felt only with difficulty underneath the ribs. This treatment was accompanied by improvement of the other symptoms. Gastric hæmorrhages will have to be treated according to the accepted rules; we may be slightly bolder in giving food in these cases. In the ascitic stage of the first two groups the prospects of improvement are very bad. The fluid quickly reaccumulates after puncture, and thus the patients gradually approach their death. It is altogether different in group 3. We often meet with cures, not only in the beginning of the disease, but also when the symptoms have advanced. It is essential to combat the stomach symptoms and to put the patient on a strengthening diet. The author has also used sodium iodide in conjunction with iron, and sometimes arsenic, and usually obtained good results.

3. **A Brief Resume of the World's Recent Cancer Research.**—Bainbridge says that cancer occurs with the same essential characteristics throughout the vertebrate creation. It is found in all domestic animals, in wild animals, and even in fish, and in its development accommodates itself to the life span of the individual animal. It occurs in animals with increasing frequency as age advances, whether the duration of life be long or short. In man malignant new growths are found in considerable numbers after forty-five to fifty years; in the horse, dog, and cat after nine years; in the trout after from five to seven years; and in the mouse after two years. The maximum incidence, whether in man or animals, coincides with the decline of reproductive activity, and yet castration seems to have no influence in the time of occurrence of the disease. The fact that both carcinoma and sarcoma are found throughout the vertebrate creation, increasing in the same manner as life advances, suggests their similarity. It is comparatively rare in hot countries, especially in those whose inhabitants subsist largely on vegetable diet. With certain exceptions it seems to be prevalent where animal diet is mostly consumed. In this connection it may be stated with reference to the influence of diet on the development of cancer that there is a variety of conflicting testimony. From those who believe it traceable to the uric acid diathesis, advocating a vegetable diet as a preventive, to Senn, who finds that the Eskimos, living on an almost exclusive raw meat diet, are absolutely immune from tumors of all kinds, there is a variety of opinions. In Borneo cancer is apparently unknown; in certain parts of China, Burmah, and India it is very rare, in Persia it is seldom seen, and in Africa it is much less common than in many parts of Europe. In Germany it is less frequent than in England or Sweden. Black races are remarkably immune from cancer, yellow races are more prone to it, while the white races are the most liable. As to its ætiology various opinions exist concerning the causation of cancer, yet nothing definite has been established regarding the essential cause. The Harvard commission discredits the parasitic theory, while the report of the imperial cancer research fund destroys all known theories of the origin of cancer, formulating, however, no new theory. Considerable work has been done at the Gratwick pathological laboratory by Gaylord and others which has attracted more or less attention from both the medical and the public press, but so far nothing of practical value has been established. In addition to race, climate, topography, age, and sex the following factors seem to be more or less involved as predisposing causes of cancer: Heredity; cicatrices; traumatism; chronic irritation; and malnutrition. In the matter of treatment recent investigation has been largely a work of elimination, while the field of usefulness of the various nonoperative methods has been markedly narrowed, as has x ray or radium treatment; serum treatment has been fraught with disappointment; of adrenalin better results are reported. But our mainstay is surgery, and it consists of: (1) Removal of inflammatory conditions, cicatrices, and benign tumors before they have undergone any malignancy, thus paradoxically curing the cancer before it exists. (2) Removal of cancer when present, with a margin of healthy tissue, and the extirpation of lymphatic vessels and lymphatic nodes in close relation to the disease. (3) Free excision, even running risks, if necessary, in order to accomplish complete eradication of the disease. (4) In those cases which are truly inoperable, where the entire cancer cannot be removed, or even a portion of it, in many cases great comfort may be afforded by cutting nerves and relieving secondary conditions which cause so much suffering.

5. **Acroparæsthesia: A Study of Two Hundred Cases.**—Lessem defines acroparæsthesia as an affection of the peripheral nerves characterized by burning, pricking, pins and needles, numb, crawling, itching, or breaking sensations distributed usually over the extremities involving not infrequently, however, the head, the face, the chest, the back, or the abdomen, rarely the viscera. Among two hundred cases seen in his clinic during the past seven years, 189, or 94½ per cent., occurred in women. It is a disease of adult life, the majority of the cases occurring between the ages of thirty and forty. Of the two hundred cases, less than 16 per cent. developed before thirty, while in only two instances had the affection appeared before twenty; in 12 per cent. the patients developed the disease after fifty. Heredity does not seem to play an important ætiological rôle, although frequently the disease has occurred in more than one member of the same family. The preponderance of Jewish patients in the dispensary renders it impossible to determine whether, as in diabetes, the Hebrew race is particularly prone to this affection or not. Syphilis, rheumatism, the excessive use of alcohol, tea, or coffee, do not appear to act as important ætiological factors in producing the disease. But obstinate constipation of long duration, chronic dyspepsia, and disturbances of the circulatory system seem to be of import. Vasomotor paresis accompanies the majority of all well developed cases. The routine treatment, as described by Lessem, consists in the administration of ten grain doses of calomel every fifth night, followed by a purge in the morning, or the daily use of cascara as a substitute. Three times a week the patient receives an application of the static spray. The medication in vogue consists of the so called black mixture:

℞ Sodi. brom., ... ℥ss;
Pepsini, ... gr. xv;
Carb. ligni., ... ʒiss;
Olei menthæ viridis, ... gr. iii;
Glycerini, ... ℥iii;
Aquæ, ... ad ℥ii.
Sig.: Teaspoonful three times a day.

In but few instances has this method of procedure either ameliorated the suffering or shortened the duration of the disease. By far the most satisfactory results have been obtained by the use of increasing doses of strychnine combined with fifteen grain doses of sodium bromide three times a day.

BRITISH MEDICAL JOURNAL.

August 25, 1906.

(Seventy-Fourth Annual Meeting of the British Medical Association).

1. Address in Medicine. The Circulation Viewed from the Periphery, By Sir J. Barr.
2. Address in Surgery. On the Technique of Operations on the Central Nervous System, By Sir V. Horsley.

3. Address in Obstetrics. The Teaching of Obstetrics, By W. S. A. Griffiths.

2. **Surgery of the Central Nervous System.**—Horsley proposed over ten years ago that in cases of Jacksonian epilepsy and other syndromata which suggested the existence of gross organic disease of the brain, a definite probationary period of medicinal treatment should be agreed upon, and that in an elementary case where no urgent symptoms like optic neuritis existed surgical treatment should be employed after thorough drug medication had been energetically applied for about six or eight weeks, and cure had not appreciably resulted. Surgical treatment may be palliative or curative. Intracranial disease may produce optic neuritis, customarily ending in total blindness, and it may cause severe headache and vomiting dependent upon pressure. These last two symptoms can often be completely palliated or wholly removed by making a sufficiently free opening in the skull and dura mater. And blindness can be with certainty averted by opening the subdural space early in cases of intracranial disease. Technique of curative surgical procedures. The general preparation of the patient by dieting, enemata, etc., is the same as for all operations. The head should be thoroughly disinfected for two days with sublimate and carbolic acid. A general anæsthetic should be used: Chloroform is preferable to ether in operations on the central nervous system, for the reason that it causes a fall of blood pressure with relatively less blood venosity. It does not aggravate the bleeding or embarrass the respiration by causing bronchorrhœa. It is, however, more dangerous, and kills by paralysis of the respiratory centre as often or more often than by paralysis of the heart. A Harcourt or other regulator should be used in its administration, and the narcosis should be arranged strictly according to the nerve excitations it is intended to drown, and so avoid contributing to the patient's discomfort by giving unnecessary quantities of the drug. Chloroform has a powerful lowering effect on the temperature of the body, thus tending to emphasize the shock of the operation. To combat this, in all operative procedures on the skull and its cavity, the wound should be constantly irrigated, usually with a solution of sublimate of one in 10,000 strength, or with saline. These solutions are put in the irrigator at a temperature of 115° F. Hæmorrhage. All the arteries around the lesion should be tied before its extirpation, beginning the incision in the brain below and carrying it upwards and towards the mesial plane. Capillary and arteriole oozing is easily arrested by hot irrigation. All bleeding from veins and sinuses in bone can be immediately and certainly arrested by plugging with wax if the periosteum around the hole is completely removed. Venous bleeding and capillary oozing, especially if at the base of the skull, can often be rapidly controlled by the administration of oxygen. Shock. The treatment of shock depends on whether the symptoms threatening life affect the respiration, circulation, or the body temperature. The embarrassment of the respiratory centre is shown progressively by shallow breathing, periodicity, and finally by typical Cheyne-Stokes respiration. These changes are best met by inhalations of oxygen, and the administration of strychnine. Depression of the circulation is benefited by bandaging the limbs. To sustain the heart and raise the blood pressure, repeated nutrient enemata should be given. Digitalis and coffee may also prove useful, but alcohol should never be given. Sepsis. To prevent sepsis the present day precautions are sufficient, especially if the irrigation fluid be a weak antiseptic lotion. As long as the cerebrospinal fluid continues to escape the skin must be most vigorously disinfected and the dressings frequently changed. The less drainage is employed the better, and every effort should be made to close the skin wound as early as possible. In cases of malignant disease of the encephalon operation should be resorted to as early as possible. The tumor should be, if possible, freely exposed, and examined, and extirpated with surrounding tissue. If it cannot be removed without undue interference with important or essential structures there remains some possibility of the tumor undergoing retrogression in a certain number of cases.

LANCET.

August 25, 1906.

1. The Circulation Viewed from the Periphery, By Sir J. Barr.
2. The Technique of Operations on the Central Nervous System, By Sir V. Horsley.
3. The Teaching of Obsterics, By W. S. A. Griffith.
4. Some Observations on the Effect of Sterile Caseous Matter in the Treatment of Tuberculous Disease, By P. Paterson.
5. Upon an Anticholera Serum, By A. Macfadyen.
6. Hæmatogenous Aibuminuria, By R. H. Fox.
7. Two Cases of Multiple Infection, By G. C. Cha. Heryee.
8. On the Correction of Death Rates, By T. F. Pearse.
9. The Induction of Hypnosis, By E. Ash.

4. **Treatment of Tuberculosis.**—Paterson describes the effect produced in tuberculous lesions by the injection of some of the products of the tubercle bacillus as elaborated within the body. It is well known that tubercle bacilli are found with great difficulty in the contents of tuberculous abscesses. Yet the conditions in the interior of such abscesses are favorable for their growth, the old serum and toxines passing into the circulation, and being replaced by a stream of fresh nutritive serum. There must then be some substance in the contents which is inimical to the bacilli and, as the fluids are being constantly renewed, presumably this inimical material is in the encapsulated solids. The writer has tried the effect of introducing small quantities of these solids in cases of tuberculosis. It was first necessary to destroy any living bacilli that might be present, for which purpose neither heat or chemicals could be employed, lest they should alter the chemical constitution of the solids. Cold applied intermittently produced the desired result; tuberculous pus, after being kept in a refrigerator for six months, but allowed to thaw frequently during that time, did not produce tuberculosis when injected into guinea pigs. The serum of the pus was then poured off, and the sediment washed for three days in a stream of cold sterilized water in order to remove all soluble toxines. Sterile normal salt solution was then added to the fine white sediment till each cubic centimetre of the emulsion contained five milligrammes of solid substance. Large numbers of animals were injected with this suspension, and none of them developed tuberculosis. If a large quantity be injected into a tuberculous patient there is a well marked reaction, but a few minims do not cause any disturbance. If the opsonic index is to be regarded as the degree of resistance of the body against any particular organism, then this substance raises the tuberculous index to a high level. The temperature of the patient is a convenient guide to the dose; sufficient should be introduced to raise it from 0.5° to 1°. From 0.1 to 0.5 cubic centimetre of emulsion given every second day is usually sufficient to raise both opsonic index and temperature. In conclusion the author reports five cases; three of bone tuberculosis in which sinuses healed and closed; one of lupus which was apparently cured; and one of chronic pulmonary tuberculosis, in which the lesion has greatly diminished in extent, and tubercle bacilli have disappeared from the sputum.

5. **An Anticholera Serum.**—Macfadyen states that the symptoms of cholera asiatica are the result of an acute intoxication with certain products of the specific

agent—the comma bacillus of Koch. These symptoms are due not to a general invasion of the body by the bacillus, but to an absorption of its toxines from the seat of infection—the intestine. The use of a bactericidal serum gives little hope of success; it must be antitoxic. By employing the same method used in the preparation of an antitoxic typhoid serum, cholera endotoxines were successfully obtained. Watery emulsions of the growth on agar were centrifuged, the sediment triturated at the temperature of liquid air, and the product taken up in one in 1,000 caustic potash. On spinning, a clear supernatant fluid representing a ten per cent. extract of the comma bacilli was obtained and was treated very rapidly with chloroform vapor. The cell juices were in every instance sterile and acutely toxic to experimental animals. With this extract rabbits and goats were successfully immunized against the cholera endotoxine. The conclusions reached were as follows: 1. That acutely toxic cell juices possessing active immunizing properties can be obtained from the cholera organism by the method employed. 2. That an antibody can be produced for that primary poison which exists as an integral constituent of the cholera bacillus. 3. That the antiendotoxic power of the serum can be raised to a marked degree. 4. That the serum in addition to its antiendotoxic qualities possessed agglutinative and bacteriolytic properties. 5. That in the case of the cholera organism there exists an intimate relationship between its virulence and toxicity. 6. That the cholera endotoxine obtained under the conditions described is thermolabile, being readily destroyed at 55° and 60° C.

6. Hæmatogenous Albuminuria.—Fox tells us that it has been known for years that there is a form of albuminuria occurring in persons not the subject of kidney disease. They are generally young men or boys; often they are pale, wanting in vigor, and dyspeptic, and are liable to faints or headaches; they have usually excitable hearts and the arterial tension varies greatly. The urine is not of continuously low specific gravity; the albumin, which is mainly serum albumin, is often present only at intervals, following rising from bed, taking a meal, beginning work, or coming on after muscular exertion, cold bathing or emotional strain. The urinary sediment contains no tube casts or renal cells; crystals of oxalate of lime are often present, also an excess of uric acid. Wright's blood studies make it probable that this kind of albuminuria is due to a disorder of the blood, the outstanding feature of which is lessened coagulability (diminished viscosity). The evidence for this view is as follows: 1. In four subjects of the disorder the coagulation time of the blood was far above the normal. On bringing it to normal by means of the administration of calcium lactate, the albumin disappeared from the urine. 2. In four subjects of kidney disease, while the coagulation time of the blood was increased, yet calcium lactate had no effect upon the albumin. 3. The functional efficacy of the kidneys was unimpaired in seven cases of hæmatogenous albuminuria, and greatly impaired in four cases of nephritis. 4. The subjects of the disorder have usually been undergoing rapid growth, in which there is a demand for calcium for bone formation. 5. Milk diet, which is rich in calcium, cures the albuminuria in many cases. 6. The symptom is to be classed with other "serous hæmorrhages" dependent on transudation of serum and associated with lessened coagulability of the blood; *e. g.*, urticaria, chilblains, some headaches, œdema, and weeping eczema. The control of the albumin by calcium lactate is the chief clinical test. The two other chief diagnostic signs are that the albumin is lessened or absent in the night urine, and that the urinary sediment contains no casts or renal cells, but often crystals of uric acid or oxalates. A serious view need not be taken of the disorder; it is indeed pathological, but its prognosis is mainly that of the state of blood debility of which it is only a symptom. Rest in bed, a milk diet, saline purgation, iron, and nux vomica bring about a cure. But rest may be overdone. Alcohol must not be given. Strontium lactate may be efficacious when the albuminuria is refractory to the calcium salt.

LYON MEDICAL.

August 12, 1906.

Otogenous Meningitis and Its Curability, By LANNOIS and A. PERRETIERE.

Otogenous Meningitis.—Lannois and Perretiere believe that operative intervention is indicated in nearly every case of this nature. The intervention should consist of a primary operation on the ear and a radical suppression of the otitic focus of infection, opening of the cerebral or cerebellar fossa so as to lay bare the dura, incision of the dura and drainage of the arachnoid space, and lumbar punctures repeated as often as may be necessary.

August 19, 1906.

The Radical Cure of Strictures of the Urethra. Dilatation. External Urethrotomy, By PHELIP.

Radical Cure of Stricture.—Phelip says that the deep incision of the stricture is the only treatment the results of which merit consideration from the standpoint of stability. All methods of treatment require the practice of dilatation in order to obtain a radical cure. In the practice of dilatation two rules must be observed, to choose from the various methods the one best suited for each case, and to repeat the dilatation at the end of a certain period, so that by many repetitions the best anatomical repair may be produced.

LA SEMAINE MEDICALE.

August 15, 1906.

1. The Parallelism Between the Condition of the Blood and the Condition of the Bony Medulla in Pernicious Anæmia, By CH. AUBERTIN.
2. Migraine with Subnormal Temperature in Tuberculous Patients, By C. H. MANTOUX.

2. Migraine with Subnormal Temperature in Tuberculous Patients.—Mantoux has observed, in the course of two years, four tuberculous patients who suffered from attacks of migraine associated with a lowering of the bodily temperature to a subnormal degree from the onset of each attack. He refers the subnormal temperature to a participation of the thermic centre in the production of the migraine.

August 22, 1906.

The Present and the Future of European Medicine in China, By L. LEGRAND.

LA PRESSE MEDICALE.

August 15, 1906.

1. Apropos of Appendicitis, By J. L. FAURE.
2. Malarial Tremor, By JOURDRAN.
3. Treatment of Whooping Cough with Chloroform, By HENRI DE ROTHSCHILD.
4. Some Points in the Medical Treatment of Gynæcology, By A. MARTINET.

2. Malarial Tremor.—Jourdran reports a case of tremor of the hands, more marked in the left, during an attack of malarial fever, which disappeared with the cessation of the attack. It was to be clearly distinguished from the trembling which accompanies the ague.

3. Treatment of Whooping Cough with Chloroform.—De Rothschild asserts that chloroform anæsthesia exerts a certain therapeutical action, perhaps specific, in cases of whooping cough, principally through its antispasmodic effect.

August 18, 1906.

1. Peptic Ulcers of the Jejunum, By A. GOSSET.
2. A Word Regarding the Promontory of the Pelvis, By R. ROBINSON.

3. Some Remarks on Martinet's Article, "The Actual State of Phosphatic Medication." By S. POSTERNAK.
4. Treatment of Whooping Cough with Arsenic, By JACQUES DE NITTIS.

1. Peptic Ulcers of the Jejunum.—Gosset reports a case in which a transmesocolic posterior gastroenterostomy had been performed for stenosis of the pylorus with great dilatation of the stomach. Two years afterward a peptic ulcer of the jejunum perforated into the transverse colon. Laparotomy was performed, the jejunum and the transverse colon separated, the openings closed, and the operation completed by an ileosigmoidostomy. The patient recovered.

4. Treatment of Whooping Cough with Arsenic.—De Nittis reports several cases successfully treated with Fowler's solution of arsenic, and states that this treatment is superior to any other.

MUENCHENER MEDIZINISCHE WOCHENSCHRIFT

August 14, 1906.

1. Modern Attempts to Lessen the Dangers of Narcosis, By Professor W. WENDEL.
2. The Prognosis and Treatment of Lithiasis in the Light of Statistics and Experience, By ADOLF RITTER.
3. The Demonstration of the Toxine in the Blood of Diphtheria Patients, By ALBERT UFFENHEIMER.
4. Remarkable Results from Investigations Regarding the Presence of Carriers of Typhus Bacilli in an Insane Asylum. By A. NIETER and H. LIEFMANN.
5. Antagonism Between Normal and Immune Bactericide Sera, By S. KORSCHUN.
6. A Contribution to the Physiology and Pathology of Vertical Visual Movements, By H. STEINERT and A. BIELSCHOWSKY.
7. The Relations of Tetany to the Female Sexual Apparatus, By GROSS.
8. Prophylaxis of Ophthalmia Neonatorum, By J. THIESS.
9. Ætiology of Prurigo, By LUDWIG STEINER and HANS VÖRNER.
10. Painful Swelling of the Glands in Syphilis, By HANS VÖRNER.
11. A Case of Stricture of the Œsophagus Cured by Fibrolysin, By WEISSELBERG.

3. The Demonstration of the Toxine in the Blood of Diphtheria Patients.—Uffenheimer has demonstrated the presence of the diphtheria toxine in the blood in two cases of diphtheria by the injection of guinea pigs with blood taken from the patients.

5. Antagonism Between Normal and Immune Bactericide Sera.—Korschun states that dysentery and typhus sera in certain doses restrict the bactericide action of normal sera upon the corresponding bacteria.

6. Contribution to the Physiology and Pathology of Vertical Visual Movements.—Steinert and Bielschowsky report a case in which a man, forty-eight years old, became unconscious and had paralysis of his right arm. Consciousness gradually returned, and it was found that he had paralysis of convergence and of the vertical muscles of the eyes, with some psychical disturbances, while the paralysis of the arm had disappeared. The diagnosis of progressive paralysis was confirmed by a lymphocytosis of the cerebrospinal fluid. At the end of six months vertical voluntary motion of the eyes was still very limited and difficult; vision, accommodation, visual field and ophthalmoscopic conditions were normal, the action of the lateral muscles was normal from the first, convergence was very slight on account of faulty innervation, and according to the statement of his wife his imbecility persisted.

7. Tetany and the Female Sexual Organs.—Gross had the opportunity to observe a case which showed that attacks of tetany may be started by the uterus, both when in a puerperal condition after a brief pregnancy, and in a nonpuerperal condition, as the result of the production of contractions.

9. Ætiology of Prurigo.—Steiner and Vörner report a case in which a woman, twenty-six years old, who had never had prurigo acquired this disease in consequence of an affection of the colon. They are of the opinion that prurigo, like urticaria, has an intestinal origin.

10. Painful Swelling of the Glands in Syphilis.—Vörner reports a case in which a large tumor developed behind the right clavicle during the secondary stage of syphilis. It caused pain in the clavicular region, loss of power of the hand, and paræsthesia principally in the region of the right median nerve. Under antisyphilitic treatment the tumor rapidly melted away and in its place could be felt much enlarged, movable supraclavicular glands. The pressure of the tumor of the nerves had produced the symptoms mentioned.

GAZZETTA DEGLI OSPEDALI E DELLE CLINICHE.

July 29, 1906.

1. Primary Tuberculous Infection of the Tonsils; the Soft Palate; the Testes; the Joints. Its Evolution and Terminations, By G. GHEDINI.
2. The Rhythmical Movements of the Head in Flajani-Basedow's Disease. By O. BELLUCCI.
3. Delirium and Other Nervous Symptoms in Lobar Pneumonia, By E. BRACCHI.

1. Primary Tuberculous Infections.—Ghedini inoculated the tonsils of three monkeys with tubercle bacilli. The animals developed tuberculous foci in the tonsils, enlarged lymph nodes in the neck, and within thirty days showed infiltration in both lungs. The monkeys died of pulmonary tuberculosis. Primary tuberculous lesions were also obtained in the same way on the palate. The infection was limited to the local lesions, the glands, and the lungs, but in one case there was general tuberculosis. In performing an autopsy upon a rabbit with tuberculous orchitis Ghedini found that neither the vas deferens, nor the vesicles, nor the prostate were affected, but that the neighboring lymph nodes were. He inoculated rabbits' testes with tubercle bacilli and found that almost the lower part of the vas was involved, while the vesicles, the prostate, etc., remained free. On the other hand, the lymphatic ganglia supplying the lower region of the pelvis were extensively involved. Ghedini differs, therefore, with Baumgarten, whose researches convinced him that the propagation of genital tuberculosis always goes on in the direction of the flow of the secretions of the parts concerned. Ghedini thinks that the propagation of the disease goes on along the lymph channels, rather than the natural route of secretion. Injections of tubercle bacilli into the femoral articulation of the rabbit showed that the focus tended to remain localized, and this the author attributes to the few lymph channels leading from the interior of the joint. A general infection from a tuberculous joint is possible, however.

2. Rhythmic Head Movements in Basedow's Disease.—Bellucci observed rhythmic movement of the head in a case of Basedow's disease. This sign was called De Musset's sign by Delpeuch (1900), because the great poet, who died of aortic insufficiency, according to his biographers, showed this sign during life. (A very bad precedent, the naming of a symptom after a patient, no matter how distinguished.) Zeitner (*Wiener klinische Wochenschrift*, May 11, 1905) was the first to describe this sign in Basedow's disease. The movement was anteroposterior in direction, and was attributed to a lifting motion communicated to the head by the impart of the column of blood upon the dilated great vessels. The head then oscillated on its occipito-atlantoid joints. In the case reported by Bellucci the movements were both anteroposterior and lateral, from left to right. When this sign occurs early, or in the atypical cases it may assist in the diagnosis of Basedow's disease. Bellucci attributes the motion from left to right to the fact that in his case the right lobe was more markedly hypertrophied; the right carotid therefore was more markedly compressed, while the pulsations of the left carotid were more free.

3. **Nervous Symptoms in Pneumonia.**—Bracchi mentions as predisposing causes to delirium in pneumonia alcoholism (in sixty per cent. of cases), and a neurotic constitution, but some cases show delirium apparently without predisposing cause. In pneumonia a fall of temperature does not lessen the pulse rate, while in meningitis, when delirium appears, the pulse becomes slow, but the temperature does not fall.

LA RIFORMA MEDICA

August 11, 1906.

1. A New Urinary Pigment, By E. U. Fittipaldi.
2. Clinical Studies on the Endovesical Separation of the Urine of Each Kidney (*To be continued*), By D. Taddei.
3. Hodgkins's Disease, and Tuberculosis of the Lymph Nodes, By O. Cignozzi.

1. **A New Pigment in Urine.**—Fittipaldi found a new pigment in the urine, which exists as a chromogen, and gives the color of acid cochineal when heated in a strongly alkaline solution. The urine is freed from biliary pigment by adding slaked lime, and allowing the filtered liquid to become saturated with carbonic acid. The second filtrate will contain urobilin, urobilinogen, the new chromogen, and urochrome. After eliminating all the other pigments from this solution by precipitating each in succession and filtering the chromogen remains. It can be detected even in the presence of other pigment by heating the urine with a small amount of caustic soda, a marked cochineal red color is obtained. This chromogen appears to be increased in quantity, and is found constantly in cases of severe jaundice, with cancer of the liver, hypertrophic cirrhosis, etc. It is not present in normal bile, nor in normal hepatic tissue, and may possibly prove to be of diagnostic value.

3. **Hodgkins's Disease and Glandular Tuberculosis.**—Cignozzi concludes as follows from a clinical and experimental research of Hodgkins's disease: (1) The tubercle bacillus can produce lesions in the lymphatic system which clinically are identical with true pseudoleucæmia. (2) The glands thus affected may resemble such growths as lymphosarcoma, owing to absence of caseation. (3) The lesions microscopically are not typical of tuberculosis in these cases. The tubercles are endothelioid, without giant cells, presenting some bacilli, but no caseation, but in some places hyaline degeneration. Numerous and hyperæmic vessels are seen in all these glands. (4) The endothelial cells in these tubercles are derived from the linings of vessels, and are very apt to be mistaken for sarcoma cells. (5) The inoculation of portions of the diseased glands in the animals showed that the lesions were due exclusively to the tubercle bacilli. The tuberculin test is useful clinically in determining the diagnosis of these cases.

ROUSSKY VRATCH.

July 8, 1906.

1. Macroscopic Sections of the Entire Brain with Marchi's Microtome. Permanent Preparations in Formalin Gelatin, By A. Th. Mankowski.
2. The Diagnostic Palpation of the Appendix and Its Value in Chronic Appendicitis, By Th. Hausman.
3. Two Cases of Adhesions After Burns, By V. A. Bialobzheski.
4. Two Cases of Acute General Peritonitis Due to Perforation. Laparotomy, Recovery. By V. N. Unukoff.

1. **Macroscopic Brain Sections.**—Mankowski succeeded in devising a simple and effective method of cutting and preserving for the museum sections of the entire brain about two and a half to three millimetres in thickness, which preserve their anatomical integrity. The brain is hardened in ten per cent. formalin solution, and is cut into two equal parts with a thin knife. The pieces are placed for half an hour in warm water (50 or 60° C.) to remove traces of formalin from the surface. Each is then separately immersed into an iron pan containing the following melted mixture. White transparent gelatin, 300.0 grammes; glycerin, 600.0 grammes; water, 1400.0 grammes, in which the brain should remain under constant heat for from one half to three quarters of an hour. In order to drive away the air from the ventricles, etc., the mass should be gradually sunk more and more deeply into the gelatin. The brain then is kept at the bottom of the pan by a weight, and the mixture is allowed to cool until the gelatin solidifies. The pan is then immersed in warm water, so as to melt the outermost layer of gelatin, the mass is removed from the pan, and the superfluous gelatin is cut away, leaving a very thin layer of gelatin over the cut surface. The latter is now held over a flame, the gelatin allowed to melt, and while warm the surface is pressed upon a glass plate. The other surface is now heated over the flame, rendering the gelatin smooth. The preparation is then placed in a jar with eighty per cent. alcohol, which makes the gelatin more dense, and allows the sections to be cut with a Marchi knife. The first section is already fixed to the plate of glass. Marchi's microtome is a thin steel blade, held in a frame like a saw. Sections of from five to two millimetres in thickness are cut. To make permanent preparations the sections are placed on glass plates and the gelatin is poured over them, after which a second glass plate is pressed on the other side of the section. Air bubbles can be driven away by gently warming the glass over them and melting the gelatin.

2. **Palpation of the Appendix.**—Hausman prefers palpation to all other methods of determining the topography of the gastrointestinal organs. He follows in the main the methods of Obrastsoff, but pays special attention to the appendix, which he says he can palpate not only when it is diseased, but also in health, provided conditions are favorable. The secret of palpating a healthy, noninfiltrated appendix is deep palpation of the posterior pelvis abdominal wall. The best position of the patient for this is a horizontal dorsal one, with limbs extended, but head and body raised somewhat. A hard bed, couch, or table are essential. The examiner must sit, not stand, with comfort. The examiner's hand should be placed at right angles to the axis of the cylindrical organs (intestines), to be felt, and palpation should be made with tips of fingers slightly flexed. Two motions of the wrist are used for this palpation, either flexion or rotation; in the latter the little and the index finger alternately feel the gut. Deep and gradual penetration at each expiration brings the fingers close to the posterior wall, and the normally placed appendix may be felt at the edge of the pelvis, provided there be not too much fat nor gas. The fingers should pass transversely across the appendix which is felt as a hard cord, the patient feeling something "snapping" inside. The method of palpation enabled the author to make accurate diagnoses of chronic latent appendicitis in a considerable number of cases.

THE JOURNAL OF NERVOUS AND MENTAL DISEASES.

August, 1906.

1. The Public Obligations of the Neurologist, By Henry R. Stedman.
2. Carcinoma of the Nervous System, with the Report of Eleven Cases. By William G. Spiller and T. H. Weisenburg.
3. A Note on the Temporary Disappearance of the Sensory Symptoms of Syringomyelia, By Charles W. Burr.
4. The Sphincter Reflexes in Tabes Dorsalis and Paresis, By Collier F. Martin.

2. **Carcinoma of the Nervous System, with the Report of Eleven Cases.**—Spiller and Weisenburg have

made the following classification of carcinoma of the nervous system: 1. Cases in which metastasis to the central nervous system occurs from a primary lesion elsewhere in the body. It may assume many forms, and may occur anywhere in the brain, but is extremely rare to the substance of the spinal cord, in the vertebræ it is more common. 2. Those in which the alterations in the substance of the spinal cord and brain are not distinctly carcinomatous, but are such as may be caused by pressure. 3. Those in which the peripheral nerves are diseased either with or without involvement of the brain and cord. 4. Those in which no macroscopic lesions are found, and possibly in some, no microscopic lesions, and the symptoms are supposedly toxic. After a synopsis of the literature the authors review their eleven cases, eight of which were with necropsy, and close with a history of their cases.

JOURNAL OF THE ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES.

September, 1906.

1. On the Importance of the Prevention of Infectious Diseases in the Navy, with a Suggestion as to the Prophylactic Treatment of Some of the Acute Exanthemata. By HENRY G. BEYER.
2. The Treatment of Gonorrhœa by Irrigation, By WILLIAM GREY MILLER.
3. Gonorrhœa—Its Treatment From the Standpoint of a Military Surgeon, By ROBERT M. THORNBURGH.
4. The Question of the Origin of the Lues Venerea Among the Conquistadores in Mexico, By HENRY DU REST PHELAN.
5. A Suggestion for the Greater Efficiency of the Organized Militia, By CHARLES S. BUTLER.
6. Calx Sulphurata as a Preventive of Yellow Fever, By WILLIAM F. WAUGH.
7. Otitis Media and Mastoiditis as a Sequel of Influenza, By CHARLES D. CENTER.
8. Treatment of Fractured Ribs, By RELL M. WOODWARD.
9. An Emergency Case for Field Service, By LEONARD B. ALMY.
10. A New First Aid Packet, By WILLIAM M. ANGNEY.
11. A Method of Artificial Feeding of Infants in the Tropics, By LEON T. LE WALD.
12. Personal Experience with Spinal Analgesia and Its Application to Military Surgery, By HENRY D. THOMASON.
13. Liver Abscess, Six Cases, with Special Reference to the Ætiological Importance of Ascaris Lumbricoides, By JAMES FARQUHARSON LEYS.
13. Report of a Peculiar Case of Appendicitis. By WILLIAM N. BISPHAM.

12. Personal Experience with Spinal Analgesia and Its Application to Military Surgery.—Thomason reports his experience with spinal analgesia in seventy-nine operations. He places emphasis upon the fact that the cerebrospinal fluid serves as the solvent to tropacocaine; thereby reducing to a minimum the chances of infection, and avoiding increased intracranial and spinal pressure. The author prefers tropacocaine hydrochlorate of reliable mnaufacture, because it possesses less toxic properties than cocaine hydrochlorate, which absence of toxicity is believed in a certain degree to modify and lessen its analgetic powers. The syringe employed was of glass of 2 c.c. capacity, the needle being 7 cm. in length. The quantity, 32 to 80 milligrammes, depends upon the operation to be performed. A full description of the technics observed by the author is given: Among the thirteen conclusions arrived at by the writer may be mentioned: In all operations covering the field from the umbilicus to toes tropacocaine spinal injection with proper technics is a reliable and advantageous anæsthetic. It is believed to be devoid of danger, as Morton reports about three thousand cases without a death or serious symptom. Under the administration of spinal analgesia the patient is at all times in a normal condition, able to assist himself and describe symptoms and conditions. There is no necessity for undue haste in performance of operation because of jeopardy from prolonged general anæsthesia, of importance is also the absence of vomiting and retching. Thomason also thinks that tropacocaine spinal analgesia has its place in military surgery, especially field work and time of war, because it offers the following advantages: (1) It obviates the necessity for the storage and transportation of the bulk of general anæsthetics; (2) is much more economical than general anæsthetics; (3) the immense saving of time and attention in its administration; (4) the saving in operative personnel—dispensing with the necessity of anæsthetizers; (5) the saving in the number of attendants for individual patients—after operation under spinal analgesia the patient does not require such attention as under general anæsthesia; (6) the saving in number of bearers—under spinal analgesia patients are much more able to assist themselves; (7) its employment on the field of battle, at dressing stations, ambulance stations, etc., would be the means of relieving much suffering, as well as the prevention of shock from pain, and at the same time render the wounded man better able to assist himself to reach the field hospital.

ARCHIVES OF THE ROENTGEN RAY.

September, 1906.

1. On the Examination and Interpretation of Radiographs, By J. HALL-EDWARDS.
2. Radiometry, By ERNST EITNER.
3. On the Influence of X Rays on the Hæmatopoietic Organs (*Continued*), By J. BELOT.
4. A Case of Rodent Ulcer Treated by the X Rays, By G. P. GIRDWOOD.

1. On the Examination and Interpretation of Radiographs.—Hall-Edwards voices his opinion that too much stress cannot be laid upon the fact that the most careful and painstaking examination of a radiograph is necessary before a diagnosis is given. It is frequently impossible to print some of the details of certain radiographs, which can be seen by the trained eye in the negatives themselves, and are sufficiently plain to enable the expert to make a diagnosis. To send a print of such a negative to a surgeon untrained in the examination of radiographs is a positive injustice, and to take such a print without letting the surgeon know that you have done so is reprehensible. It is far better to send a written statement, accompanied by a diagram, and to take upon oneself the responsibility of the result, than to run the risk of leading some one else astray. A set of normal negatives should always be kept handy in case reference to them is needed. One of the most useful adjuncts to the workroom, as an aid to the examination and interpretation of the radiographic negatives, is a large sheet of ground glass let into one of the windows, or a retouching desk, the back of which consists of ground glass; with either of these, by receding from the window, or moving the disk into a different light, the thinnest possible plate can as a rule be dealt with. Owing to the fact that with the x rays we are enabled to view the shadows of bones under conditions and from positions which we are unaccustomed to in ordinary examinations of the skeleton, or in the dissecting room, it is an easy matter to mistake a normal condition for an abnormal one, and *vice versa*. The proper interpretation of a radiograph can only be made by some one having a knowledge of the normal aspect of the part as depicted by the x rays, and of the procedure adopted in the production of the picture. Apart from the distortion which can be produced by the x ray tube being

placed in an unsuitable position during the exposure, there are several conditions which are likely to mislead, unless the greatest possible care be exercised. The true position of the surgeon x ray expert has yet to be defined. In Austria, by a law, an official license is required before one can publicly operate an x ray machine, and none but physicians are licensed. The value of the interpretation of a radiograph depends entirely upon the knowledge and experience of the expert who is asked to give an opinion, and a good opinion cannot be formed from viewing a radiograph produced with a Crookes tube held in an unknown position. A large amount of distortion is easily detected by anyone used to the examination of x ray pictures, but a small amount is frequently difficult to recognize even by an expert. The first necessity for the foundation of a radiographic anatomy, says Stenton, and quoted by our author, must be a collection of radiographs representing the usual appearances of the human frame as depicted by the x rays. This might be efficiently done by the publication of an atlas of well executed radiographs, illustrative of all parts of the normal human subject at all ages, from fœtal to adult life. Such a work would be a valuable addition to anatomical literature and illustration, although the nature and difficulties of the work may well frighten both author and publisher. There can be little doubt that sooner or later such an atlas will be forthcoming, but until its publication is an accomplished fact, the writer strongly advises that everyone taking an active interest in x ray work should secure for himself a set of normal radiographs, which should be carefully kept for reference.

3. **On the Influence of X Rays on the Hæmatopoietic Organs.**—Belot remarks that radiotherapy is the specific treatment for leucæmia, and that the results are more favorable in the myeloid variety, but are also very encouraging in lymphatic leucæmia. In pseudoleucæmia the results are slower, less certain, and less complete. Among these lymphoma is the most favorably influenced, while some other forms are quite refractory to the x rays. Having regard to the absolute inutility of all other methods of treatment, radiotherapy may always be tried, since if it fails it offers no sort of risk to the patient, and the treatment may be suspended should the irradiations be without result. The most important factor is the time which has elapsed since the commencement of the disease. In future the examination of the blood should be a matter of routine, like that of the urine, so that patients with incipient diseases of the hæmatopoietic system may be placed at once under radiotherapeutic treatment. The affected tissues should absorb the greatest possible quantity of rays without injuring the skin. For this purpose the more penetrating rays, six to eight on Benoist's scale, should be used. The irridation should be directed on the whole of the affected regions. The séances should be fairly frequent, it being difficult to give the length of treatment required in any given case. At all events, it is necessary to continue the treatment until all symptoms have completely disappeared.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

September, 1906.

1. Toxæmic Vomiting of Pregnancy, By J. Whitridge Williams.
2. Elephantiasis Nervorum of the Scalp: A Manifestation of Von Recklinghausen's Disease, By H. F. Helmholz and Harvey Cushing.
3. Graphic Methods in the Study of Cardiac Diseases, By Arthur D. Hirschfelder.
4. Insufficiency of the Tricuspid Valve in the Course of Pernicious Anæmia, By Robert B. Preble.
5. Elephantiasis Nonparasitica, Secondary to Chronic Cardiac Disease and Repeated Œdema of Pregnancy, By T. W. Hastings.
6. Results of the Biterminal Transplantation of Veins, By Alexis Carrel and C. C. Guthrie.
7. Essential Pentosuria in Two Brothers, By Theodore C. Janeway.
8. The Value of Massive Doses of the Salicylates in the Diagnosis and Treatment of Acute and Articular Rheumatism, By Thomas Wood Clarke.
9. A New Blood Filaria of Man: Filaria Philippinensis, By P. M. Ashburn and Charles F. Craig.
10. Splenomedullary Pseudoleucæmia with Secondary Myelophthisic Anæmia, By Charles E. Simon.
11. Infections of the Biliary Tract, with Special Reference to Latent (or Masked) and Typhoid Infections, By A. O. J. Kelly.

1. **Toxæmic Vomiting of Pregnancy.**—Williams adds three new cases of toxæmic vomiting of pregnancy to the four cases, formerly reported by him. He classifies these cases as reflex, neurotic, or toxæmic. In the reflex variety the vomiting is apparently directly attributable to the existence of some abnormality of the generative tract, such as a retroflexion of the uterus or an ovarian tumor, and it ceases promptly upon its correction or removal. The fact, however, that in many pregnant women the presence of similar lesions is not associated with serious vomiting would apparently indicate that its reflex origin is quite exceptional, and suggest that some other ætiological factor is usually concerned in its production. At the same time, the justification for the recognition of this type of vomiting is afforded by those instances in which prompt cure follows the correction of the abnormality, while the failure of suggestive treatment and the lack of evidence of serious changes in metabolism make it improbable that the affection is neurotic or toxæmic in origin. In the neurotic variety the vomiting is apparently dependent upon the existence of a neurosis—more or less closely allied to hysteria—which may occur in women who had manifested no signs of impaired nervous control previous to the occurrence of pregnancy. In such cases careful examination will fail to reveal the existence of a single physical condition which could account for the vomiting, while the most accurate chemical analysis of the urine will afford no evidence of serious metabolic disturbance; and, finally, characteristic lesions will not be found at autopsy in the rare cases which end fatally, as such patients die from starvation. Moreover, the neurotic nature of these cases is clearly indicated by the fact that cure frequently follows the employment of perfectly useless remedies and unphysiological procedures. Still more convincing evidence is afforded by the fact that even the most obstinate cases of this character may be cured in a few days by instituting a rigorous rest cure in a well conducted hospital; while less severe cases yield to suggestive treatment at home. Toxæmic vomiting is a very serious disease, and is a manifestation of a profound disturbance of metabolism, of the exact origin of which we are ignorant. All that we know at present is that it usually ends in death, and sometimes leads to a fatal termination within a few days after the appearance of serious symptoms. In such cases the patient presents signs of a profound intoxication, and may die in coma without any evidence of starvation. In the last stages of the disease the vomited matter presents a coffee ground appearance and is expelled without apparent effort. The urine, while diminished in amount as a result of the scanty intake of fluids, does not contain albumin or casts until shortly before death, and may apparently present a normal amount of urea, so that its casual examination gives no clue to the gravity of the condition. On the other hand, more detailed chemical examination at an early period reveals changes which are indicative of a profoundly altered metabolism. These consist in a decided decrease in the amount of nitrogen excreted as urea, and a marked increase in the amount put out as ammonia. The proportion of amidoacids is increased. At autopsy unexpected lesions are found, together with pronounced

changes in the liver and kidneys. The author believes that we should recognize that there are various toxæmias of pregnancy, and while we know something about several of them, it is possible that other varieties exist of which we know absolutely nothing at present.

2. **Elephantiasis Nervorum of the Scalp: A Manifestation of Von Recklinghausen's Disease.**—Helmholz and Cushing describe the case of a patient upon whom they performed a successful operation for elephantiasis nervorum of the scalp. The neurofibroma was soft and elastic, and of a dull gray color, the surrounding tissue was readily stripped from its capsule, leaving a smooth and glistening surface. The nerve trunk proximal to the neurofibroma was uniformly thickened, while distal it was of smaller diameter. Microscopically, the neurofibroma was found to be made up for the most part of a loose connective tissue. The greatest part of the tumor was due to a proliferation of the perineural connective tissue, together with a proliferation of the endoneurium. The scalp was thickened, due almost entirely to œdematous connective tissue, presenting a uniform fibrous appearance. The authors give a complete review of the literature pertaining to elephantiasis nervorum.

5. **Elephantiasis Nonparasitica, Secondary to Chronic Cardiac Disease and Repeated Œdema of Pregnancy.**—Hastings gives a complete review of the literature, and describes the case of a woman, which came under his observation. The history of the case, says the author, does not make clear the duration of the cardiac disease, but does exclude the probability of parasitic invasion, and the normal blood condition bears out the history. Entire freedom from attacks of inflammation in repeated injuries to the right leg suggested that the local condition depends upon some defect in the lymphatics of the part affected, whether congenital or acquired it is difficult to prove. The occurrence and persistence without steady increase in size of an œdematous condition of the left leg suggest more strongly some local lymph vessel deficiency in the right leg. The repeated occurrence of œdema during three pregnancies and the cardiac disease with several periods of broken compensation would account for the œdema in both legs, and yet not for the thick, elephantiatic condition of the skin of the right leg.

6. **Results of the Biterminal Transplantation of Veins.**—Carrel and Guthrie experimented on three dogs. The animals were operated on under aseptic technics. Transplantation was made of a segment of the femoral vein between the two cut ends of the femoral artery. The ends of the venous segment were dissected and transplanted on the artery, but all the middle portion was permitted to retain its normal connections, including its collaterals. After the circulation was reestablished these collaterals became similar to small collateral arteries. It was therefore an incomplete biterminal transplantation. The other two experiments consisted in complete biterminal transplantation. A long segment of the external jugular vein was dissected out and completely extirpated and put in a glass of isotonic sodium chloride solution. Afterward the carotid artery was dissected and severed. The venous segment was interposed between and united to its cut ends, and the circulation reestablished. The authors conclude that: A venous segment interposed between the cut ends of an artery quickly undergoes anatomical changes. From macroscopical and microscopical standpoints the vein has a strong tendency to assume the character of an artery, while from a physiological standpoint it performs the arterial functions.

7. **Essential Pentosuria in Two Brothers.**—Janeway reports the cases of two brothers, suffering from essential pentosuria, together with a history of seventeen cases found in the literature, and says that no patient with pentosuria has been under surveillance a sufficient length of time to speak with absolute certainty of its course or prognosis. No bad results have yet been noted, though Blumenthal considers it possible that the increase in circulating sugar may conduce to arteriosclerosis, as in diabetes. There is, of course, no loss of an important foodstuff, as in the latter disease, and the prognosis is certainly better than in the mildest diabetes. In life insurance, the author thinks, this should be the attitude toward such cases. It is in life insurance examining that the condition should be most often found, and it is a gross injustice to class these people with diabetics. The only treatment consists in carefully explaining to the patient the difference between his ailment and diabetes, and the removal of any previous dietetic restrictions he may have been subjected to. There exist three different types of pentosuria: 1. Alimentary pentosuria, analogous in every way to alimentary glycosuria, occurs transitorily whenever large amounts of vegetables or fruits containing pentosanes are eaten, though it is usually very slight. 2. The second group contains those rare cases of severe diabetes in which the inability to burn carbohydrates extends to the pentoses as well as the hexatomic sugars. The third group, chronic, essential pentosuria, occurring without reference to the pentoses of the food, and persisting unchanged for years, is a very difficult problem in intermediary metabolism. The definite facts thus far ascertained are as follows: The sugar excreted is the optically inactive r-arabinose. This is the only known occurrence of an optically inactive sugar anywhere in Nature. It, therefore, cannot be derived from the vegetable pentoses, nor from the l-xylose of the food nucleins. The amount excreted is small. The urine quantity is not excessive. The specific gravity is somewhat increased, and the acidity usually marked. The nuclear metabolism has not been increased. A family predisposition seems well marked.

8. **The Value of Massive Doses of the Salicylates in the Diagnosis and Treatment of Acute Articular Rheumatism.**—Clarke remarks that sodium salicylate can and should be given in much larger doses than are generally used. When given in massive doses it reduces the fever, relieves the pain and swelling, and shortens the course of the disease. It is not injurious to the heart, and appears by quickly cutting off the disease to offer some protection to that organ. The patient's tolerance to the drug and the rapid cessation of symptoms form valuable therapeutical tests for the diagnosis of acute articular rheumatism.

9. **A New Blood Filaria of Man: Filaria Philippinensis.**—Ashburn and Craig describe a small sheathed filaria, found in the blood of a Visayan prisoner in the Bilibid prison, Manila, at all hours of the day and night, but always in small numbers. There is a history that the worm formerly occurred in the peripheral blood only in the daytime, when it was found in great numbers, and the hospital records show a diagnosis of *Filaria diurna*. As, according to Manson and other authorities, the periodicity of *Filaria diurna* never changes, and as this worm is now found in the peripheral blood throughout the twenty-four hours, it is obvious that the diagnosis of *Filaria diurna* was erroneous. The authors are, therefore, of the opinion that the filaria represents a new species, and call it *Filaria philippinensis*. A detailed description with microscopical illustrations are given, together with a table giving the chief differential points of the previously described filariæ and this *Filaria philippinensis*, from which can be seen that its length is 0.32 millimetre and a breadth of 0.0065 with a tight sheath; a serrated, retractile band; a pointed, abruptedly attenuated tail; an anteror and posterior V spot; a spiral tube or cylinder as viscus; while its motions are lasting and progressive.

Proceedings of Societies.

NEW YORK NEUROLOGICAL SOCIETY.

Meeting of March 6, 1906.

The President, Dr. JOSEPH FRAENKEL, in the chair.

Demonstration of Neurofibrils.—Dr. EDWIN G. ZABRISKIE gave a demonstration of normal and pathological neurofibrils stained by the Cajal method. He said that, so far as his personal observation with this method of preparing the neurofibrils extended, it seemed to him absolutely inconclusive, and he did not believe that we were justified in making any positive assumption from it as to whether there were fibres coming from the terminal buttons which communicated with the intercellular fibres, as had been alleged.

Do Central Tracts of the Nervous System Regenerate?—Dr. L. PIERCE CLARK read a paper on this subject in which he offered the following conclusions: 1. Animal experiments failed to provide conclusive data that central tracts of the nervous system ever regenerated, so that the former function was restored. In warm blooded animals, and in the human species in particular, an abortive attempt on the part of the cord to regenerate was largely if not solely confined to fibres of undoubted peripheral type. 2. Histological analysis of cases of hemisection, compression paraplegia, myelitis, and other like destructive lesions of the cord failed to show positive evidence that actual structural regeneration of axis cylinders ever occurred in the central nerve tracts of the human spinal cord. In case of complete division of the brain and spinal tracts there was simply degeneration followed by sclerosis. 3. A most acceptable reason for nonregeneration of such tracts was shown in the fact that the component nerve fibres did not possess a neurilemma sheath, from which nerve regeneration mainly if not solely occurred. This lack in cord and brain tracts, in contrast to the regenerating peripheral nerves, was due possibly to a difference of embryological origin for the two structures of the nervous system. 4. The seven cases cited by Stewart and Hart of cord regeneration, being merely hemisections, either did not fulfil the conditions of test or lacked definite and convincing evidence of regeneration. 5. In cases of complete transverse division of the cord there was not sufficient justification, from either experimental or clinical data, to warrant suture of the spinal cord in an attempt to cure the defect.

Dr. PEARCE BAILEY said that at one of the recent meetings of the American Neurological Association Dr. S. Weir Mitchell, in discussing the case of suture of the spinal cord reported by Stewart and Hart, had expressed considerable doubt in regard to it, and seemed inclined to believe that the cord had not been completely severed. Most of the reported cases of hemisection of the cord were absolutely worthless as evidence, as in a large proportion of them there was no section of the cord at all—simply a stab wound and the Brown Séquard symptom, due probably to contusion. Dr. Bailey said that a number of years ago he had seen a case of stab wound of the spine, with complete Brown Séquard paralysis, which was followed by perfect recovery in the course of three or four weeks. The case was evidently one of contusion or hæmorrhage of the cord, but the cord was not divided.

Results of Peripheral Nerve Anastomosis.—Dr. ALFRED S. TAYLOR showed two patients in illustration. The first case was one of Bell's palsy of twelve years' duration, and the patient was operated on by Dr. Taylor on January 7, 1905, the facial nerve being implanted laterally into the hypoglossal. The muscles at the time of operation were completely degenerated. Five months later there was practically no change in the patient's condition, with the exception of the fact that there was some improvement in the condition of the left eye, which had been the seat of extreme lacrymation and conjunctivitis. There was also a slight movement of the muscles of the chin in response to the electric current, and just a shade of motion upon the volition of the patient. Ten months after the operation there was distinct motion of the muscles about the chin and the corner of the mouth, which could be clearly demonstrated by the patient.

The second patient was a boy, nine years old, who suffered from facial paralysis after a mastoid operation, which was performed on July 13, 1903. He was operated on by Dr. Taylor on October 24, 1903, and during the twenty-eight months that had elapsed since that operation there had been a decided improvement in his condition. The asymmetry of the face at rest had disappeared, he had a considerable amount of control of the muscles, and he was able to wink the affected eye. In this case the seventh nerve was implanted laterally into the twelfth. The speaker had now performed this operation in eight cases, and in all of them, where sufficient time had elapsed, positive results had been obtained.

Dr. TAYLOR next showed a number of cases of brachial birth palsies which he had seen in consultation with Dr. L. Pierce Clark and Dr. T. P. Prout. In these cases the damaged section of the nerve was excised and an end to end suture made. The lesion in all these cases was practically the same, and was the result of overstretching of the nerve roots in the brachial plexus, which led to tearing of the nerve sheaths and fibres and perhaps to hæmorrhages within the nerve sheaths. The ultimate result of such a lesion was the formation of cicatricial tissue, so that the nerve impulses could not pass through the nerve roots, resulting in paralysis of certain groups of muscles. If these palsies were allowed to continue for too long a period of time, the paralyzed muscles would undergo contracture, and even the bones would become changed in their conformation and produce certain well recognized deformities which it would be practically impossible to overcome, even after the nerve was repaired.

The first case of birth palsy shown by Dr. Taylor was that of a girl with complete paralysis of the left upper extremity. The operation was done on June 8, 1905, when the child was a year old. The deep cervical fascia was found to be much thickened and adherent, and, on exposing the brachial plexus, it was found to consist of one large cicatricial mass extending to the spinal foramina and underneath the clavicle. As it was found impossible to recognize the individual nerves in this mass of cicatricial tissue, the mass itself was excised as a whole, leaving a gap two centimetres long, which was bridged over with loops of chromicized catgut wrapped with Cargile membrane, the idea being to form an artificial canal through which the nerve fibres could regenerate. About nine months had elapsed since the operation, and the only improvement noted thus far was a certain degree of motion in the muscles about the shoulder joint.

The next case was that of a boy, ten years old, with a birth palsy of the left upper extremity, who was operated on on March 14, 1905. Upon exposing the brachial plexus, the fifth and sixth cervical and the suprascapular nerves were found bound down by adhesions and thickened fascia. The proximal end of the suprascapular was tortuous and thinned. After resection of the thickened fascia, the proximal end of the suprascapular nerve was resected and implanted into the root of the fifth cervical. The boy now had a fairly wide range of motion, but the affected arm was very much smaller than its fellow and somewhat deformed, as shown by the peculiar flexed position of the elbow, with some inward rotation.

Dr. TAYLOR showed a number of photographs of this case, illustrating the limitations of motion that had existed prior to the operation. The improvement that

had resulted from the operation he attributed largely to the removal of the thickened cervical fascia by which the nerve had been bound down. There had certainly been a considerable gain in the range of motion and in the development of the musculature.

Dr. TAYLOR also reported a case of anterior poliomyelitis, with complete paralysis of the forearm and hand, in which there was a slight return of power after division of the eighth cervical and first dorsal nerve roots and their implantation into the fifth and sixth cervical.

Dr. CLARK, who had been associated with Dr. Taylor in these neurosurgical studies, said that he had treated five cases of infantile cerebral hemiplegia to overcome the extensor muscle weakness in this type of palsy. In all the cases there were extreme foot deformity and spastic contracture. The effort was made to improve the paralyzed extensors (peroneal group) by implanting those nerve bundles of the external popliteal nerve which supplied this group into the internal popliteal nerve. The operation was done just above and posterior to the bend of the knee, at the bifurcation of the sciatic into the internal and external popliteal. The work in all five cases was done about a year ago. But little improvement was to be seen in four of the cases; the fifth, however, that of a boy twelve years old, had shown marked improvement. The foot had changed from a talipes equinus to that of valgus, or flat foot. There was now nearly as much power in the external peroneal group as in the internal. The patient still had the hemiplegic type of gait, which was slowly being trained away. If this peculiarity of gait could be overcome, the speaker thought we might say there was a reversal of motor centres in the cortex, a question first raised by Kennedy.

Dr. WILLIAM M. LESZYNSKY said that in the first case shown by Dr. Taylor, that of Bell's palsy of twelve years' standing, he thought it was a question whether the woman would have preferred to go through life with the face distorted on the paralyzed side as the result of secondary contracture or as she was at the present time. He could not imagine a worse condition than in the case shown, so far as the cosmetic result was concerned. The patient still had her lagophthalmus, with complete flaccidity of the left side of the face and apparent atrophy of the muscles. The movements on that side of the face were apparently transmitted through the action of the masseter. The pronounced facial atrophy in this case was an unusual feature, and for this reason the outlook was not very encouraging. Of course, no one could predict the ultimate outcome of the operation.

Dr. J. RAMSAY HUNT said it was an interesting question whether there could be a restoration of function in muscles that had been paralyzed for twelve years. In the case shown by Dr. Taylor there was apparently slight motion about the angle of the mouth on the paralyzed side, and in that connection the speaker called attention to the fact that the facial innervation overlapped somewhat, so that in the event of paralysis on one side of the face there would still remain a few muscular fibres which received their nerve stimulus from the opposite side. This might possibly be the explanation of the apparent restoration of function about the mouth in this particular case, the muscular tissue having received trophic stimuli from the opposite side, so that it had not degenerated. The speaker did not expect that the improvement would extend any further, as two years and eight months had already elapsed. If the operation described by Dr. Taylor proved successful, it would certainly be of great value in old cases where there were drooling and inability to close the eye, even if the restoration of function was only partial. In cases of birth palsy, Dr. Hunt questioned the propriety of excising so much of the thickened and fibrous plexus that the cut ends of the nerves could not be brought into apposition, and trusting to an artificial medium to bridge over the gap between the divided plexus trunks. He did not consider that connective tissue offered an insuperable obstacle to nerve regeneration, as it was Nature's method of repairing divided nerves, and he thought that more conservative surgical measures would offer a better chance of ultimate restoration of function.

Dr. J. F. TERRIBERRY said his service at the Hospital for the Ruptured and Crippled afforded him a large experience in cases of birth palsy of the upper extremities, and the point he wished to emphasize was the uncertainty of the prognosis. He recalled a number of cases in which the result had been better than the operative result in any of the patients shown by Dr. Taylor. One of his patients, a child of thirteen years, with the Erb type of paralysis, had been under observation since her second year, and although the affected muscles had grown to fair size and responded to the faradic current, there was very poor extension of the forearm and supination and extension of the wrist. These facts had led him to observe this case carefully, and he had found that attempts to use the weakened muscles were accompanied by diffusion of energy throughout the arm, the weakened muscles being overpowered by their healthy antagonists. As this paralysis occurred at a time when many of the function groupings had not been learned, it occurred to him that that fact probably accounted for the wide diffusion of energy upon attempts at using the weak muscles. Acting upon that supposition, he had attempted to educate these muscles to their particular work, and with most gratifying results; in the past four months that patient had made more progress than had been obtained after a number of years of electricity, massage, and general instruction to use the arm as much as possible. It was remarkable to observe how the energy, at first widely distributed over the arm muscles, had become localized, so that the child was now able to use the weakened muscles almost perfectly, unhampered by their healthy opponents.

As to operating in this class of cases, it might be well to do so, but the operation should not be undertaken too early, because in many instances there was marked improvement even after one, two, or three years had elapsed. The internal rotation of the arm, which was very marked in one of the cases shown, was usually the first symptom to disappear. Dr. Taylor's results in the cases of palsy of the face were certainly remarkable, and the final result would be extremely interesting.

Dr. SMITH ELY JELLIFFE said he had seen all the patients shown by Dr. Taylor, some of them both before and after the operation, and from his own observation he could say that, almost without exception, they had distinctly improved. How much of the improvement was due to the operation and how much to the incessant efforts that had been made to educate and train the impaired muscles, he was unable to say. He was inclined to feel, however, that we were justified in believing that a residual amount of good had been gained by the operative procedure in these cases, and, even assuming that this was not so, we had still gained an enormous amount of information in reference to the technique of the operation, which would undoubtedly prove valuable in the future.

Dr. ARTHUR C. BRUSH said he was inclined to believe, with others, that the majority of patients with infantile paralysis recovered, or nearly recovered, in the course of time. He had been able to trace quite a large number of cases that had been more or less directly under his own observation, and in one instance only, that of a lad of twenty, was there still great loss of function in the paralyzed arm. Nearly all of them

still showed some loss of power, but it was usually very slight. In the cases shown by Dr. Taylor the operative procedure had undoubtedly hastened the progress of the cure, which was more rapid than it would have been if electricity and manipulation had been solely relied on.

Dr. CLARK said, in reply to the suggestion made by Dr. Hunt, that the restoration of function about the angle of the mouth in his case operated upon by Dr. Taylor, and shown this evening, was due to an overlapping innervation from the opposite side, that the facial nerve on the right side had had an opportunity for over twelve years to take up this function, and had not done so. Why should motion return promptly at the end of the fifth month after faciohypoglossal anastomosis if there was not a regeneration of the left facial nerve over the hypoglossal union? Prior to that operation, every possible medical means had been employed to restore function, but without the slightest result. He thought there could be no question that at present the hypoglossal nerve was transmitting nerve impulses into the muscle nerve endings of the facial to the left side. The woman had been told by him repeatedly before operation that electrical responses indicated that all the muscles above the left angle of the mouth were those of degeneration, and that probably in case of a successful issue of the operation she could expect motion only in the muscles at and below the left angle of the mouth. He thought that promise was now near fulfilment. Probably, as was well known, and as Dr. Hunt had remarked, the reason why atrophy in the muscles about the left side of the mouth had not occurred to any great extent was the slight trophic influence of the overlapping facial nerve of the opposite side.

In discussing the series of cases of brachial birth palsy which he and Dr. Taylor had been interested in, Dr. Clark thought it was very unlikely that the nerves would ever worm their way through the dense scar tissue, as suggested by Dr. Hunt. Careful study of a very large number of these cases had never shown the slightest evidence that this sort of repair was taking place; on the contrary, in many cases an actual recoil of the new nerve fibres from the scar obstacle had been shown by Dr. Prout.

The statement that the prognosis of brachial birth palsy was usually favorable was entirely at variance with his personal observation and literary research. Nonrecovery was placed as high as seventy or eighty per cent. by Bruns. Obstetricians, who saw all the cases, agreed with neurologists in giving an unfavorable prognosis. While the good effects of a more or less constant training, which these patients operated on had received, was somewhat of a rebuke to the pessimistic neurologist, yet the speaker did not believe the improvement in the cases could by any means be attributed to this training solely.

Dr. T. P. PROUT said that, in speaking of the recovery in these cases, it was well to bear in mind the nature of the lesion we were dealing with. When we considered the fact that this scar tissue had been produced in the nerve trunk, it was impossible to conceive how complete recovery could take place. The scar tissue was the direct result of the severing of the sheath of the nerve and hæmorrhage into the nerve itself, which subsequently became organized and produced scar tissue. The only way by which we could hope for ultimate recovery was by removal of the scar tissue. This would at least relieve the pressure, which was one of the factors that prevented the nerve from regenerating.

Dr. EDWARD D. FISHER said that, while it was of not infrequent occurrence, especially in dispensary practice, to see cases of birth palsy improve with little or no treatment after two or three years, those were evidently not the kind of cases that had been reported by Dr. Clark and Dr. Taylor. In those cases, no doubt, long continued treatment by manipulation and electricity had been tried without success. Cases of birth palsy could be practically divided into two classes, namely, those that would end in recovery with little or no treatment, and those that would fail to improve in spite of faithful and long continued treatment.

In referring to the cases of facial paralysis, Dr. Fisher said that no one could demonstrate that the muscles on the affected side had absolutely disappeared throughout their entire structure, or that their innervation was entirely cut off. If any muscular fibres still remained, whether the paralysis had lasted for five years or for twelve years or longer, there was a possibility of regeneration of the muscle if the nerve force was restored. If it could be actually demonstrated that all the muscular fibres had disappeared, then these operations could be of no avail.

The PRESIDENT said the most important point at issue seemed to be whether any muscular tissue was left, and this was difficult to determine. He agreed to what had been said in regard to the circular muscles of the mouth being innervated from both sides, and in the case shown by Dr. Taylor he did not think the fact had been demonstrated beyond doubt that the operation had resulted in a reawakening or regeneration of the orbicularis oris on the affected side.

Dr. TAYLOR said that as a surgeon he was interested to learn how little faith the neurologist had in nerves. In the first case of facial paralysis, to which Dr. Leszynsky had alluded, the condition had lasted twelve years, and the operation had been done only fourteen months ago, and still there were evidences of some return of power. Even in the most favorable cases, no improvement was looked for in less than six months. Cases were on record where there had been a restoration of muscular power after thirty years. About a year ago, Dr. Charles A. Elsberg had shown a case of facial paralysis of over twenty-nine years' standing in which there was some return of power after an anastomosis of the facial and spinal accessory nerves. In that case the improvement was noticed within six or eight months after the operation. The case was an unusually favorable one, as the patient was a woman of means, and had submitted to continuous massage and electrical treatment, thus maintaining the nutrition of the muscles on the affected side.

The mere fact of the absence of electrical reaction did not demonstrate that there was no muscular tissue left. The insertion of the electric needle through the skin and fat tissue sometimes produced a reaction when the usual methods failed to cause any response. When even a small nest egg of muscle was left, it might be increased by the proper stimuli. In his own case, the patient was certainly very well pleased with the result thus far obtained, and more was hoped for in the future.

Alluding to the statement made by Dr. Hunt that the formation of a cicatrix in the brachial plexus was Nature's way of healing the breach in the nerves, Dr. Taylor wondered that Nature's method was not more successful. In the orthopædic hospitals and dispensaries it was of daily occurrence to see children ranging in age from four to twelve years with extremities that were practically useless from this disability. If, therefore, the percentage of spontaneous cures was as high as some of the speakers had mentioned, then the number of original cases must be very great.

A Case for Diagnosis.—Dr. WILLIAM B. NOYES presented a man, aged forty-nine, a painter, who had a fairly definite history of syphilis, but denied alcoholic excess. In 1872 he received a stab wound in the left arm, causing a permanent ulnar paralysis. In September, 1905, while working near a third rail, he received a strong shock of electricity, which prostrated him for

some days. He noticed, after this, rapidly increasing paralysis of the muscles of his arms, which soon made it impossible for him to work. More careful investigation proved that he had been growing weak in his left arm for at least two years, and that his right arm for the past year had been causing him constant pain and weakness in the region of the shoulder. Examination showed that he had marked atrophy of the muscles of the shoulder and arm, a loss of faradic reaction, especially marked over the right deltoid, the pectoralis major, and the extensors and flexors of the right arm, with weakness of the left deltoid, and absolute paralysis of the left ulnar group of muscles. There was also a reduction of galvanic reaction rather than a definite reaction of degeneration. There were fibrillary twitchings. Sensation was normal to touch, pin prick, heat, and cold. After two months' treatment, the weakness of paralysis of the muscles of both arms, shoulders, and hands increased, so that he became helpless. The knee jerks became increased, and a definite Babinski reflex was present. Pain in the arms and shoulders was present at times. The original diagnosis was that of progressive muscular atrophy of spinal origin. The old ulnar paralysis was an independent lesion, and was due to a cut. The case had advanced while under observation, until now a diagnosis of amyotrophic lateral sclerosis was possible. It indicated the progression of cases of chronic, or progressive, anterior poliomyelitis, with involvement of the pyramidal tracts, the process descending down the cord instead of ascending. It also indicated that amyotrophic lateral sclerosis was simply a stage in progressive muscular atrophy. The shock by electricity had hastened, but had not caused the disease. The real cause was to be looked for in the syphilitic or lead poisoning or both.

Dr. Terriberry thought the case was possibly one of lead infection.

Book Notices.

Physiology of the Nervous System. By J. P. Morat, of the University of Lyons. Authorized English Edition, Translated and Edited by H. W. Syers, M. A., M. D. (Cantab.), Physician to the Great Northern Central Hospital. With 263 Illustrations (66 in Colors). Chicago: W. T. Keener & Co., 1906. Pp. 680.

In this splendid volume there is afforded a striking demonstration of the fact that physiology is indeed one of the most progressive of the medical sciences. In Professor Morat's well written treatise more space is required for a full and systematic exposition of the physiology of the nervous system alone than was necessary for the entire subject of physiology in the textbooks of a dozen years ago. The size of the volume is not due to diffuseness or padding, lamentable faults in many medical works, but to substantial additions of new material, which has been treated with the clearness and conciseness of style so characteristic of the best in French scientific literature. These qualities have been well preserved in the translation. It is only possible in our limited space to advert to a few of the most valuable features in this important work, which we think will permanently take high rank as an authority and book for reference. Especially noteworthy are the chapters dealing with the histology and functions of the neurones, the methods of using electricity in the study of the nervous system, the innervation of the special senses, cerebral localization, and the phenomena of unconsciousness and fatigue. In the chapter on language and ideation the author, in his discussion of sleep, dreams, somnambulism, hypnosis, and the nature of personality, shows how physiology approaches and merges into the province of psychology. In his treatment of these difficult modern problems he shows himself an able physiologist in his familiarity with the technical literature of his own field, and a well read scholar in his felicitous allusions to the works of Kant, Goethe, Darwin, and others. A comprehensive bibliography is appended to each chapter.

A System of Physiological Therapeutics. A Practical Exposition of the Methods, Other Than Drug Giving, Useful for the Prevention of Disease and in the Treatment of the Sick. Edited by Solomon Solis Cohen, A. M., M. D., Senior Assistant Professor of Clinical Medicine in Jefferson Medical College, etc. Volume VII; Mechanotherapy and Physical Education, including Massage and Exercise. With 229 Illustrations. Pp. xvi-420. Volume VIII. Rest, Mental Therapeutics, Suggestion. By Francis X. Dercum, M. D., Ph. D., Professor of Nervous and Mental Diseases in the Jefferson Medical College of Philadelphia, etc. Pp. viii-332. Volume X. Pneumotherapy, including Aerotherapy and Inhalation Methods and Therapy. By Dr. Paul Louis Tissier, Chief of Clinic in the Faculty of Medicine of the University of Paris, etc. Illustrated. Pp. xv-479. Volume XI. Serum Therapy, by Joseph McFarland, M. D.; Organotherapy, by Oliver T. Osborne, M. A., M. D.; Radium, Thorium, and Radioactivity, by Samuel G. Tracy, B. Sc., M. D.; Counterirritation, External Applications, Bloodletting, by Frederick A. Packard, M. D.; An Outline of the Principles of Therapeutics, with Special Reference to Physiological Therapeutics, by the Editor. With Addendum on X Ray Therapy and an Index of the Complete System of Eleven Volumes. Illustrated. Pp. xi-388. Philadelphia: R. Blakiston's Son & Co., 1906.

The seventh volume of this interesting series contains sections on massage and exercise, by Dr. John K. Mitchell, on physical education by muscular exercise, by Dr. L. H. Gulick, on orthopædic apparatus, by Dr. James K. Young, on corrective manipulations in orthopædic surgery, by Dr. H. A. Wilson, and on physical methods employed in ophthalmic therapeutics, by Dr. W. L. Pyle. The remedial application of the various methods is well described, and the several monographs have excellent illustrations.

The eighth volume treats of rest, mental therapeutics, and suggestion, and has been written by Dr. F. X. Dercum. He presents the subject in a systematic manner, and from physiological truths and clinical facts deduces the methods of applying rest in neurasthenia and allied states, in hysteria, in hypochondria, in other functional and organic nervous diseases, and in mental affections. The legitimate field of suggestion is described, and there is reference to suggestion by mystic and religious methods.

In volume ten Dr. Paul L. Tissier reviews pneumotherapy, including aerotherapy and inhalation methods. Much more attention has been paid in Europe, and especially in France, to pneumotherapy than in this country, and the reader will appreciate the fact that new resources have been added to his armamentarium in the methods of treatment described in this volume.

Volume eleven contains monographs on serum therapy, by Dr. Joseph McFarland, on organotherapy, by Dr. Oliver T. Osborne, on radium, thorium, and radioactivity, by Dr. S. G. Tracy, and on counterirritation, external applications, and blood letting, by Dr. F. A. Packard, also an outline of the principles of therapeutics, with special reference to physiological therapeutics, by the editor, Dr. Solomon Solis Cohen. This volume contains a therapeutic index digest to the series.

Miscellany.

Effect of Surgical Operations on the Insane.—Broun regards the following facts as well established. If the operation when needed is properly done, and the patient is not mutilated by an uncalled for castration, the mental condition is never aggravated. Under the stimulus of the improved somatic state resulting from surgical relief and hygienic treatment some patients show greater mental changes under the moral and therapeutic care than was shown before such treatment was given. The improved mental condition may continue to recovery. The primary object of surgical operations upon the insane should be to relieve them of physical suffering and mental disturbance. If as a result of this relief they are mentally improved the result will be a satisfactory one.—*American Journal of Obstetrics,* June, 1906.

A Medical Bulletin from Wall Street.—It might be imprudent, especially for traders who mind fluctuations, to forget that the stock market is in a convalescent state. Less than a week ago it appeared to be at the point of dissolution. The crisis was reached on Wednesday. The panic fever rapidly subsided, and on Thursday it was able to take light nourishment. On Friday it sat up and took solid food. On Saturday there were many who feared that its recovery had been too rapid, and that a relapse on Monday was extremely probable. Instead of suffering a relapse yesterday the patient continued to improve, and got out of bed, apparently with the sanction of the physicians, but its strength could be overtaxed. It is not yet in condition to take violent exercise, or, at least, so say the doctors who pulled it through, and whose counsel, for that reason, should be respected.—*The New York Times.*

Medical Degrees in China.—A second mission college has been incorporated under American law and is entitled to give degrees in China. St. John's College, in Shanghai, was incorporated in January last under the laws of the District of Columbia as St. John's University. It announces that the degree of bachelor of arts will in future be conferred on graduates of the school of arts and science, and that that of doctor of medicine will be given to graduates from the school of medicine who have completed the five year course and have maintained throughout the entire course the general average of 75 per cent. This adds a fifth year to the course heretofore given, and for which students received and will still receive a certificate. It will be spent as an interne in hospital and be largely devoted to clinical and pathological work. There are not more than four medical schools in China at present, which are up to the standard in assuming the responsibility and ability to carry their students to fitness for professional responsibilities.—Through *The China Medical Missionary Journal.*

Recent Work in Abdominal Surgery.—Moynihan and Upcott quote Schömann as advocating puncture and slow withdrawal of fluid in tuberculous peritonitis, subsequently injecting iodoform emulsion every four to eight days. The Mayos believe that simple laparotomy in this disease is insufficient, and advocate the search for and removal of the primary focus, if possible. This opinion is now quite prevalent. May says that (1) the common bile duct if divided may be united by catgut sutures, a portion being left open for drainage, (2) the common or hepatic may be implanted in the duodenum, (3) the second portion of the duodenum should be loosened to prevent tension, (4) drainage should be covered with rubber tissue and not placed in contact with the suture line. For cirrhosis with ascites Monprofit advises operation when atrophic cirrhosis is established. Talma's operation is recommended. Davis gives as indications for splenectomy cysts, benign tumors, tuberculosis, sarcoma, abscess, traumatic rupture, splenic anæmia, malarial, and wandering spleen occasionally. The operation is contraindicated in leucæmia, amyloid disease, hypertrophy following cirrhosis, secondary malignant disease, and the essential anæmias. McCosh considers the important features in operation for septic peritonitis to be (1) rapidity, (2) gentleness, (3) removal of the cause, (4) postoperative adoption of the Fowler position.—*The Practitioner,* August, 1906.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending August 31, 1906:

Places.	Date.	Cases.	Deaths.
Smallpox—United States.			
New York—New York	Aug. 11-18	1	
Texas—Houston	Aug. 11-18	1	
Washington—State	July 1-31	5	
Washington—Spokane	Aug. 11-18	1 imported	
Smallpox—Foreign.			
China—Niuchwang	July 7	1	
France—Marseilles	July 1-31		5
Gibraltar	Aug. 5-12	1	
Great Britain—Liverpool	Aug. 4-11		1
India—Bombay	July 17-24		3
India—Calcutta	July 7-14		3
India—Karachi	July 15-22		4
India—Madras	July 14-20		3
India—Rangoon	July 7-14		3
Italy—General	July 26-Aug. 9	18	
Nicaragua—Bluefields	Aug. 2-9	1	
Russia—Moscow	July 21-Aug. 4	7	4
Russia—Odessa	July 28-Aug. 4	2	
Siberia—Vladivostock	July 5-14	3	1
Spain—Barcelona	Aug. 1-10		11
Spain—Cadiz	July 1-31		1
Yellow Fever—Foreign.			
Cuba—Havana	Aug. 25	1	
Mexico—Merida	Aug. 5-11	8	3
Mexico—Tierra Blanca	Aug. 5-11	1	1
Mexico—Vera Cruz	Aug. 21	1	
Cholera—Insular.			
Philippines—Manila	June 30-July 14	268	243
Philippines—Provinces	July 7-14	247	177
Cholera—Foreign.			
India—Bombay	July 17-24		97
India—Calcutta	July 7-14		8
India—Madras	July 14-20		2
India—Rangoon	June 30-July 7		1
Straits Settlements—Singapore	May 30-June 12	2	2
Plague—Foreign.			
Australia—Adelaide	July 12	1 on steamship *Britannia.*	
Australia—Fremantle	June 23-30	1	
Australia—Sydney	June 23-30	2	1
Arabia—Djeddah	July 16-22	11	11
Brazil—Bahia	June 30-July 28	5	3
China—Amoy	July 24	Epidemic.	
Greece—Athens	July 21-28		2
India—Bombay	July 17-24		34
India—Calcutta	July 7-14		10
India—Karachi	July 15-22	17	16
India—Rangoon	June 30-July 14		319
Peru—Lima	July 9	3	
Peru—Mollendo	July 9	4	
Peru—Paita	July 9	8	
Peru—Trujillo	June 9	3	

Public Health and Marine Hospital Service:

List of Changes of Station and Duties of Commissioned and Noncommissioned Officers of the Public Health and Marine Hospital Service for the seven days ending August 29, 1906:

CARMICHAEL, D. A., Surgeon. Detailed to represent the Service at the meeting of the Association of Military Surgeons, Buffalo, N. Y., September 11-14, 1906.

CORPUT, G. M., Passed Assistant Surgeon. Granted one month's leave of absence, from August 30, 1906.

GASSAWAY, J. M., Surgeon. Relieved from duty at St. Louis, and directed to proceed to Philadelphia, Pa., assuming command of the Service and relieving Surgeon Fairfax Irwin.

GODFREY, JOHN, Surgeon. Granted leave of absence for seven days, from August 26, 1906.

GODFREY, JOHN, Surgeon. Granted an extension of leave of absence for fourteen days, from September 2, 1906.

GRUBBS, S. B., Passed Assistant Surgeon. Relieved at Detroit, Mich., and directed to proceed to St. Louis, Mo., assuming command of the Service and relieving Surgeon J. M. Gassaway.

HARKIN, F. McD., Acting Assistant Surgeon. Granted leave of absence for twelve days, from August 28, 1906.

HUNT, REID, Chief, Division of Pharmacology. Detailed to attend the meeting of the Council of Chemistry and Pharmacy of the American Medical Association, Indianapolis, Ind., September 1, 1906.

IRWIN, FAIRFAX. Relieved from duty at Philadelphia, Pa., and directed to proceed to Detroit, Mich., assuming command of the Service at that port, relieving Passed Assistant Surgeon Grubbs.

LUMSDEN, L. L., Passed Assistant Surgeon. Leave of absence granted for two months from June 1, 1906, amended to read one month only.

MARSH, W. H., Acting Assistant Surgeon. Granted leave of absence for nine days, from September 8, 1906.

MCLAUGHLIN, A. J., Passed Assistant Surgeon. Granted leave of absence for one month, from August 15, 1906.

OAKLEY, J. H., Passed Assistant Surgeon. Granted twenty days' leave of absence, from August 30, 1906.

RUCKER, W. C., Assistant Surgeon. Detailed to represent the Service at the meeting of the Association of Military Surgeons of the United States, Buffalo, N. Y., September 11-14, 1906.

SAWTELLE, H. W., Surgeon. Relieved from duty at San Francisco, Cal.

TAYLOR, A. S., Acting Assistant Surgeon. Granted leave of absence for sixteen days, from August 19, 1906.

TOWNSEND, WESLEY, Acting Assistant Surgeon. Granted leave of absence for seven days.

WARD, W. K., Assistant Surgeon. Granted leave of absence for five days, from August 20, 1906, under Paragraph 191 of the Regulations.

WERTENBAKER, C. P., Surgeon. Detailed to represent the Service at the meeting of the Association of Military Surgeons of the United States, Buffalo, N. Y., September 11-14, 1906.

WHITE, J. H., Surgeon. Directed to proceed to Natchez, Miss., for special temporary duty, upon completion of which to rejoin his station.

WOODS, C. H., Pharmacist. Granted leave of absence for seven days, under Paragraph 210 of the Regulations.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, for the week ending September 1, 1906:

CHAMBERLAIN, WESTON P., Captain and Assistant Surgeon. Granted leave of absence for two months, to take effect about September 4, 1906.

EDGER, B. J., JR., Captain and Assistant Surgeon. Reports arrival at Fort Reno, Oklahoma, with 1st Battalion, 25th Infantry, from Fort Brown, Texas.

HEARD, GEORGE P., First Lieutenant and Assistant Surgeon. Ordered to proceed from Fort Wingate, New Mexico, to Camp of Instruction, near Fort D. A. Russell, Wyo., for temporary duty.

PINKSTON, O. W., First Lieutenant and Assistant Surgeon. Left Camp of Instruction, Fort Riley, Kas., with Troops B and D, 9th Cavalry, on detached duty, *en route* to Osawatomie, Kas.

SCOTT, GEORGE H., First Lieutenant and Assistant Surgeon. Reported for temporary duty at Fort D. A. Russell, Wyo., from Camp of Instruction, near Fort D. A. Russell, Wyo.

STEER, SAMUEL L., Captain and Assistant Surgeon. Granted leave of absence for one month and ten days, to take effect about September 1, 1906.

TORNEY, GEORGE H., Lieutenant Colonel and Deputy Surgeon General. Left Presidio of San Francisco, Cal., with insane soldiers, *en route* to Government Hospital for the Insane, Washington, D. C.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy for the week ending September 1, 1906:

ASSERSON, F. A., Passed Assistant Surgeon. Ordered to the *Columbia*, September 4, 1906.

BARBER, G. H., Surgeon. Detached from the *Wisconsin* and ordered to the naval station, Olongapo, Philippine Islands.

BEYER, H. G., Medical Inspector. Detached from the *Ohio* and ordered to the *Rainbow*.

BROOKS, F. H., Assistant Surgeon. Detached from the *Columbia* and ordered to the Naval Hospital, Newport, R. I., for treatment.

BROWN, H. L., Assistant Surgeon. Detached from the Navy Yard, Washington, D. C., etc.; ordered to the Navy Recruiting Station, Pittsburgh, Pa., for temporary duty, and thence home to await orders.

DEAN, F. W. S., Assistant Surgeon. Detached from the Navy Recruiting Station, Denver, Col., etc.; ordered to Washington, D. C., September 6th, for examination for promotion, and then to await orders.

DORSEY, B. H., Assistant Surgeon. Ordered to the Navy Recruiting Station, Des Moines, Ia., September 5th.

DRAKE, N. H., Medical Inspector. When discharged from treatment at the Naval Hospital, New York, N. Y., ordered to Washington, D. C., October 1st, for examination for retirement; then home to await orders.

GILL, J. E., Assistant Surgeon. Ordered to the Navy Recruiting Station, St. Louis, Mo., for temporary duty, and thence to the Navy Yard, Washington, D. C.

GROW, E. J., Surgeon. Detached from the *Mohican* and ordered to the *Ohio*.

JONES, E. L., Assistant Surgeon. Detached from the Naval Hospital, Mare Island, Cal.; ordered to duty in attendance on the course of instruction at the U. S. Naval Medical School, Washington, D. C.

KINDLEBERGER, C. P., Surgeon. Detached from the naval station, Olongapo, P. I., and ordered to the *Baltimore*.

ODELL, H. E., Passed Assistant Surgeon. Detached from the *Galveston* and ordered to the *Wisconsin*.

OLSON, G. M., Assistant Surgeon. Detached from the *Wisconsin* and ordered to the *Galveston*.

RANDALL, J. A., Passed Assistant Surgeon. Ordered to the Navy Recruiting Station, Denver, Colo.

SELLERS, F. E., Assistant Surgeon. Detached from the *Ohio* and ordered to the *Mohican*.

SPEAR, R., Surgeon. Detached from the *Baltimore* and ordered to the Naval Hospital, Canacap, P. I.

TAYLOR, E. C., Assistant Surgeon. Ordered to the *Hancock*, Navy Yard, N. Y.

Births, Marriages and Deaths.

Married.

BRINKERHOFF—WHITE.—In Honolulu, Hawaii, on Wednesday, August 22nd, Dr. Walter Remsen Brinkerhoff, of Boston, and Miss Nellie M. White.

KENDALL—ZANDERER.—In New York, on Sunday, August 26th, Dr. Henry Kendall and Miss Anna Zanderer.

RUSSELL—CLINTON.—In Buffalo, N. Y., on Tuesday, August 21st, Dr. Nelson Gorham Russell and Miss Ethel Clinton.

Died.

BALDWIN.—In Brooklyn, N. Y., on Wednesday, August 29th, Dr. Nielson Abell Baldwin, aged sixty-seven years.

CROSBY.—In Shelbyville, Kentucky, on Tuesday, August 21st, Dr. James A. Crosby, aged sixty-five years.

DEWEY.—In Saratoga Springs, N. Y., on Monday, August 20th, Dr. Mary B. Dewey, aged eighty-four years.

HOWE.—In Geneva, N. Y., on Sunday, August 26th, Dr. Chauncey B. Howe, aged eighty years.

JAEGER.—In Elgin, Illinois, on Saturday, August 25th, Dr. Christopher A. Jaeger, aged seventy-nine years.

PERKINS.—In Washington, D. C., on Friday, August 24th, Dr. Edward D. Perkins, aged forty-one years.

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Original Communications.

THE ATAXIC RECTUM.*

By Collier F. Martin, M. D.,
Philadelphia,
Instructor in Rectal Diseases, Philadelphia Polyclinic and College for Graduates in Medicine.

In tabes dorsalis the degenerations occurring in the posterior columns of the spinal cord and in the peripheral nerves must, necessarily, cause great disturbances in functions. These disturbances are particularly noticeable where the complete coordination depends upon a perfect balance of the motor, sensory, and reflex phenomena. Such complicated mechanisms as those for micturition and defæcation show signs of any nerve degeneration very early in the course of the disease.

Among the early rectal symptoms of locomotor ataxia may be mentioned constipation, paroxysmal attacks of pain in the rectum (rectal crises), lessened myotatic irritability of the anal sphincters, and disturbances in sensation of the anal skin and of the rectal mucosa. We may also have a more or less complete loss of the voluntary control of the bowels.

The recent studies of Müller seem to show that the centres governing both the acts of defæcation and micturition are situated in the sympathetic system and not in the spinal cord, as was formerly believed. Sahli epitomizes Müller's researches as follows:

If the spinal cord of the dog is divided above the sacral segments, or if the sacral segments are extirpated, the result is practically the same. At first there is retention of the urine and of the fæces. After a time, however, this urinary and rectal retention disappears and is replaced by periodic evacuations differing from the normal only in that they are involuntary. Since this reestablishment of periodical evacuations occurs even after complete extirpation of the lumbar and sacral cord, the central mechanism for these functions evidently must be situated outside of the spinal cord in the sympathetic system. Extirpation of the lowermost portion of the spinal cord, or simply transverse section, is followed by a complete loss of the influence of the will upon the evacuations of the bladder and rectum, and such evacuation becomes purely automatic, as may easily be recognized from the condition of the animal. The animals are, of course, anæsthetic for the process of evacuation. Immediately after extirpation of the sacral cord the anus gapes from paralysis of the striated sphincter, but gradually becomes closed, evidently as a result of the vicarious action of the involuntary musculature of the internal sphincter. The striated sphincter, however, remains paralyzed, and the anal reflex is permanently destroyed. If the spinal cord is simply divided above the sacral segment the tonus of the sphincter and the anal reflex are maintained; in fact, both may be even accentuated. From these experimental data it is easy to assume: (1) That the actual centres for the evacuation of the bladder and rectum are situated outside of the spinal cord in the sympathetic system; (2) that motor fibres reach this sympathetic apparatus through the spinal cord by means of the rami communicantes from the lumbar and sacral segments; and (3) that the motor fibres for the striated muscles of the pelvic floor, which effect the voluntary closure of the bladder and rectum, arise directly from the spinal cord, and have nothing to do with the sympathetic. The sensory impulses to the brain are necessarily conducted by the spinal cord. According to this conception the only part played by the spinal cord in the vesical and rectal functions is the conduction of sensory impulses to the brain, and of the voluntary cerebral impulses for the innervation and relaxation of the striated vesical and rectal sphincters, and for the innervation of the abdominal tension.

Clinical observations during the past few years have given some very interesting data, confirming, in many instances, the results obtained by experimental research. Eight cases of tabes dorsalis and twenty-eight cases of paresis, most of the last showing tabetic symptoms, were examined.

Digital examination of the tabetic cases all showed a sensory paralysis of the external sphincter. When the finger was introduced into the rectum and firm pressure in a lateral direction was made upon the internal sphincter, the anus could be made to relax to such an extent that a good view could be had of the lower rectum without the use of a speculum. At the same time considerable power seemed to remain in the internal sphincer. This phenomenon appeared to be caused by the fact that when the internal sphincter was dilated by pressure there was no reflex contraction of the external sphincter, which, under ordinary circumstances, would contract firmly about the finger, cutting off any view of the lower rectum.

In three cases of tabes another peculiarity was noted, which was, that when the finger was withdrawn, the anus did not immediately contract, but remained patulous. This appeared to be due

* Read before the American Proctological Society, Boston, Mass., June 5, 1906.

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to the loss of muscle sense, the patient being unaware that the sphincters were relaxed. In a short time, however, the internal sphincter closed involuntarily, and the anus was pulled back to its normal position by the contraction of the levator ani muscles. Twenty-four of the twenty-eight paretic cases also showed more or less marked sensory paralysis of the external sphincter. In one case the contraction was normal, and in three the disturbance of function was so slight as to be of doubtful importance. In two possible cases of paresis the sensory disturbance was found in one and absent in the other. In the tabetic cases there was also found a marked anæsthesia of the anal skin and of the lower rectal mucosa. All but one of these cases was troubled with constipation, and this one had periodical evacuations without any voluntary control. The patient was unaware that her bowels needed to be evacuated until suddenly her sphincters would relax and the contents of the rectum would be expelled.

Four of these cases were afflicted with rectal crises. The attacks of pain were lancinating in character and frequently agonizing in intensity. They came on suddenly without warning and lasted from a few seconds to several minutes, disappearing suddenly and completely. One of these cases formerly had the attacks in the morning when arising from bed, but at the present time he is having them several times a day. After the pain leaves there is a feeling of exhaustion which lasts for some time. The time of these attacks of pain does not appear to hold any relation to the condition of the rectum, whether the rectum is full or empty, or whether before or after stool, and the expulsion of flatus does not bring any relief from this annoying symptom. The patients nearly all complain of a feeling of fullness and weight in the rectum, as if the bowels should be evacuated, but attempts at stool give neither a passage nor relief from this feeling. Examination with the speculum showed no marked lesion of the anus or the rectal mucosa. No fissures nor hæmorrhoids were demonstrable, and the congestion of the rectal mucosa was insignificant. One case had a small fibroid internal pile which was removed without any relief of the symptoms.

At times the internal sphincter seems to be firmly contracted due to a compensatory action of this muscle to make up for the lack of power in the voluntary muscle. This condition, associated with a lessened degree of peristalsis, only accentuates any existing constipation. The anæsthesia of the rectal mucosa robs the patient of any desire to go to stool, which a full rectum would otherwise render imperative. As the rectum becomes more and more distended the patient must go to the toilet as soon as he has any knowledge that his bowels need evacuating, otherwise he is likely to have a complete movement with no voluntary control. In the more advanced cases we may expect the periodical incontinence to become more pronounced. In examining these patients we will frequently find the underwear and the perineal region soiled with mucus and fæces caused by the gradual leakage which is unnoticed by the patient. This will occur even when the patient is complaining of his severe constipation, producing an anomalous condition of fæcal incontinence with constipation.

Where we have extreme contraction of the internal sphincter, associated with relaxed external muscle, the anus is apt to assume a funnel-shaped appearance, simulating that condition which Tardieu ascribes to the practice of passive pederasty. Some cases will also present a condition of partial prolapse of the anal skin and of the rectal mucosa, in addition to which there may be an extreme hypertrophy of the cutaneous margin of the anus. This may be so pronounced as to resemble the labia majora of the female.

In the early ataxic stage the constipation and the spasm of the internal sphincter may be relieved by a divulsion of the sphincters, associated with the routine use of mild laxatives. Later on, however, when the rectal anæsthesia becomes more pronounced, the relaxed condition of the sphincters caused by the divulsion may produce so much annoyance that it is a question whether a divulsion is justifiable. In one case a divulsion somewhat relieved the attacks of rectal crises, but later on the condition was worse than ever, having added to his pain a very annoying incontinence.

The treatment of these cases of ataxic constipation is decidedly unsatisfactory. Probably the best results can be obtained by the regular administration of mild laxatives. The patient should be encouraged to make periodic attempts at stool, and should try the effect of massage over the colon and the lower abdomen. The administration of small doses of the alkaloid of the ripe seed of the calabar bean seems to stimulate peristalsis to a certain extent. A morning dose of sodium bicarbonate seems to work well where the case is a mild one. Where there is a persistent tendency toward attacks of fæcal impaction the patient should take a high colonic injection of cold or of cool water in the morning. This is to empty the lower bowel so as to rid the patient of the annoyance of the pressure of fæces in the rectum. I do not know of any remedy to relieve the case from the constant tenesmus present in some instances. In addition to the care of the alimentary tract attention should be paid to the urinary tract, and we should be constantly on the lookout for any symptoms pointing to urinary retention or vesical paralysis.

As the rectal and vesical symptoms come on early in the course of tabes, a paralyzed external sphincter, with a history of persistent constipation, should suggest to the mind of the examiner the necessity of trying the other reflexes. The addition of bladder disturbances may be considered very suggestive of some changes taking place in the spinal cord, interfering with the transmission of voluntary impulses from the brain. The disturbance of the other reflexes, such as the loss of knee jerk, poor station, and impaired papillary reflexes, will frequently clear up the diagnosis.

Professional Building.

PALATABLE MEDICATION.*

By Herman B. Sheffield, M. D.,
New York.
Instructor in Diseases of Children and Attending Pædiatrist, Out Patient Department, to the New York Postgraduate Medical School and Hospital; Visiting Pædiatrist to the Metropolitan Hospital and Dispensary, etc.

Palatable medication is, to say the least, highly appreciated by sick adults, and practically indispensable in the management of sick children. The physician who believes in the usefulness of the medicines he prescribes owes it to his patients that they are able to swallow and retain them. As a rule, adults manage, by means of condiments and pleasant beverages, to render drugs disgusting in taste at least acceptable. On the other hand, children are compelled to take the medicine as given to them, and what is still worse, the more they resist the more they are subjected to anguish and distress, nay, even to corporal punishment which not infrequently borders on actual injury. Indeed, it is not at all rare to find children suffering from acute pneumonia in a state nigh to suffocation from the effects of prolonged and firm compression of the nostrils; and many a child bleeds from gums and lips, and loses a tooth or two through the attempts of the overzealous mother to force down into the unfortunate's throat a teaspoonful of a miserable mixture—which was, perhaps, intended only as a placebo. Hence, in discussing the subject in question attention will be directed chiefly to the selection of palatable preparations for children, limiting the suggestions as to palatable medication for sick adults to a few general rules.

As most drugs are now obtainable as solid or powdered extracts, whenever possible, adults should receive their medication in the form of freshly prepared pills or capsules. Whenever the necessity arises to administer offensive fluid extracts or tinctures, essential oils and the like, it is best to order them in what I may venture to call "home made liquid capsules." The liquid medicine and the empty gelatin capsules are prescribed separately, and the patient is directed by means of a dropper to prepare each dose of medicine just before taking it. These "home made liquid capsules" are quite a boon to patients, who are averse to taking nauseous mixtures. By means of these capsules you can readily administer also the tincture of iron chlorid, which in solution exerts a very destructive effect upon the teeth; or the different hygroscopic medicinal agents, such as the iodides, bromides, chloral, etc.

Unfortunately this convenient way of dispensing nonpalatable drugs to adults cannot be taken advantage of in prescribing for children. Hence, an attempt will here be made to devise other means, based chiefly upon the selection of the fittest and most useful preparations, which will enable the physician to render the giving and taking of medicine an act of benevolence rather than an act of cruelty.

For the sake of convenience and in order to avoid repetition the usual classification of drugs in accordance with their therapeutical effects will here be followed.

Digestants.—Most of the so called appetizers and digestants, such as the pepsin and pancreatin preparations, can be made pleasant in taste by the addition of sugar or in solution with sweet wine or simple elixir.

Bitter Tonics.—The simple bitters fully deserve their cognomen, since they are certainly very bitter, and simple, insignificant, in their therapeutical effect. The tinctures of gentian, quassia, and calumba owe their medicinal value chiefly to the alcohol they contain, their use should, therefore, be discouraged, and if alcohol be indicated, pleasant wines preferred. Of the so called peculiar bitters, the cinchona preparations are the chief representatives. As their disgusting taste can almost never be disguised, they should never be prescribed for small children, unless intended as an antimalarial. In malarial conditions quinine can best be given by rectum in the manner suggested by me about nine years ago.[1] A half to one drachm of quinine sulphate or bisulphate and a few grains of salt are mixed with the white of an egg, and by means of a large glass syringe and wide but short rectal tube injected into the bowels. The white of egg prevents irritation of the intestine, and together with the salt aids in the absorption of the quinine. Older children should be coaxed to take quinine in freshly prepared capsules. The newer "tasteless" quinine preparations are also deserving of trial, and children not averse to bitter medicines can frequently be induced to take quinine in solution with the syrup of yerba santa, or licorice, or in powder form in sweetened chocolate.

The different liquid iron preparations, such as the official wine and the tincture of the chloride, may be rendered palatable by the addition of glycerin, syrup of orange, and water. Powdered iron goes well with sugar and chocolate.

Mineral Acids.—Insufficient attention is being paid to the medicinal properties of mineral acids in the treatment of diseases of infancy and childhood. These acids advantageously replace bitter tonics and act specifically upon the alimentary canal and osseous system. Children like the taste of most of them if well diluted in sweetened water or in combination with raspberry or orange syrup and water.

Alteratives.—Arsenic, iodine, and mercury are the leading remedies of this group. Arsenic is best exhibited as Fowler's solution in plain water. Syrup of iron iodide with simple syrup forms a palatable and very useful hematinic and alterative for children. Sodium and potassium iodide may be prescribed in peppermint or orange flower water with a little simple syrup, or in compound syrup of sarsaparilla, or elixir of taraxacum. The same holds good for corrosive sublimate. Calomel, the practitioner's panacea, is readily taken by children in powder form with a pinch of sugar.

Cod liver oil, the almost indispensable tissue builder in all wasting diseases of children, is the stumbling block of the pharmaceutical reformer. Do what you please, cod liver oil aways tastes like cod liver oil as long as there is any in the mixture. In infants cod liver oil may be tried by inunction. The majority of children can be "bought" to like the following emulsion:

* Read before the American Medical Association, June, 1906.

[1] *New York Medical Journal*, October 23, 1897.

℞ Cod liver oil.....4 ounces;
Extract of malt, } of each 1 ounce;
Syrup of calcium hypophosphite, }
Glycerin, } .....of each ½ ounce;
Powdered acacia, }
Cinnamon water, sufficient to make.....8 ounces.

Antipyretics and Antirheumatics.—The best antipyretic for children is water, externally and internally. If coal tar products and the salicylates are indicated they may be administered in powder form triturated with a little sugar to which a minute quantity of essence of peppermint may be added to impart its taste. In prescribing sodium salicylate in solution its nauseating sweet taste may be disguised by a drop or two of the tincture of nux vomica.

Hypnotics and Anodynes.—The selection of pleasant hypnotics and anodynes is rather difficult, and perhaps fortunately so, in view of the very deleterious effect they exert upon the delicate infantile organism. However, sometimes they are indispensable, and in minute doses can readily be made palatable. This is particularly the case with the deodorated tincture and the wine of opium which can be rendered more or less pleasant in taste in a mixture of glycerin and orange water. The camphorated tincture of opium is a safer preparation for infants and may be prescribed in althea syrup and water. In dispensing the different morphine derivatives, it is advantageous to add a little syrup or powder of acacia to the mixture in order to avoid the formation of a sediment. In excessive irritability of the stomach, the opiates, the bromides, chloral and the newer hypnotics should be administered by rectum, and on rare occasions morphine may also be given hypodermatically.

Antispasmodics.—Belladonna is the principal drug of this group ordinarily employed in diseases of children. The fluid extract tastes fairly well in combination with licorice and water. Spirit of camphor can be made quite palatable in syrup of wild cherry or simple elixir, and the powdered camphor loses part of its miserable taste in chocolate. The emulsion of chloroform and the compound spirit of ether are useful antispasmodics, and fairly palatable in syrup of orange, or almond, and water.

Stimulants.—Nux vomica, strychnine, ammonia, alcohol, strophanthus, caffeine, digitalis, and sparteine, all call for skillful compounding to make them at least acceptable. The extracts and alkaloids should at all times be preferred to tinctures, infusions, or decoctions. Thank heaven! the times have passed when the greatness of the physician stood in direct ratio to the great quantity of medicine he prescribed! As quick circulatory and respiratory stimulants the ammonia preparations, such as aromatic spirit and the anisated solution, are very agreeable and efficient. It is truly sinful to prescribe ammonium chlorid instead.

Heart Sedatives.—There are but few occasions when these drugs are of actual benefit to children. Aconite, the standby of the homœopath, may be given in homœopathic doses well diluted in sweetened water. Aconite like digitalis is a dangerous drug in the hands of the ignorant. The indication for aconite is sthenic fever, and there are not many children too vigorous while sick. Bitter almond water in small quantities and well diluted, is a useful addition to a palatable cough mixture. The same may be said of compound syrup of squill.

Emetics.—Although intended to disgust the patient, most emetics are not disgusting in taste. The wine of ipecac requiring but small doses to produce the desired results, should be preferred to the syrup or infusion. Whenever a quick emetic is indicated, apomorphine may be used hypodermatically, but very cautiously. No special effort need be made to make emetics palatable. It is to be regretted that emetics are dropping into disuse, since many cases of acute gastritis could be arrested in their incipiency by the timely administration of an emetic.

Laxatives, Cathartics, and Purgatives.—Very few of the many members of these groups are being employed in the children's practice. Calomel and aromatic syrup or tincture of rhubarb answer the purpose in most cases. If castor oil is particularly wanted, an emulsion may be made of the following ingredients:

℞ Castor oil, ...1 ounce;
Oil of peppermint,.....5 drops;
Sugar, ...1 drachm;
Mucilage of acacia and water, to make.....2 ounces.

Rochelle salt with a little aromatic spirit of ammonia, glycerin, and water, forms a pleasant mixture. Podophyllin and aloin are best prescribed in suppositories of cacao butter. Finally, it is well worth remembering that an enema of soapsuds often dispenses with drugging.

Anthelminthics.—Santonine and calomel, the most efficient vermifuges, are readily taken by children either pure or with a little sugar or chocolate. Their effect is greatly enhanced by enemas of soapsuds and turpentine, or a decoction of quassia wood. All tæniafuges are very diseagreeable in taste and irritating to the stomach. Male fern, the most active tæniafuge, may be exhibited as follows:

℞ Ethereal extract of male fern,.....3 drachms;
Emulsion of chloroform.....4 drachms;
Emulsion of almond, sufficient to make....2 ounces.

Failure to expel the worm is often due to the fact that an oleoresin is used which is prepared from old male fern.

Diuretics and Diaphoretics.—Water is the most palatable and, in many diseased conditions, perhaps most useful diuretic. It should always be thought of before resorting to offensive medicinal combinations. The alkaline diuretics, such as ammonium, potassium, and sodium acetate, as well as potassium citrate, the lithium preparations and sodium benzoate, may be rendered palatable in any medicated water with a little syrup. I believe that sodium benzoate is not receiving due recognition as a theraupeutical agent. Being an active diuretic, diphoretic, expectorant, and antirheumatic, it forms, as fully demonstrated by me six years ago,[2] an ideal remedy for the grip and similar acute affections. The mode of rendering the "hydragogue" diuretics and "special" diaphoretics more or less pleasant in taste, has been suggested when speaking of the "heart stimulants and sedatives." I may also add that high intestinal irrigation often advantageously supplants the internal administration of drugs.

Expectorants.—Anisated solution of ammonia, compound syrup of squill, and wine of ipecac, which have already been referred to, are quite palatable and efficient expectorants. To these may be

[2] *New York Medical Journal*, June 30, 1900.

added syrup of senega, tincture of cubeb, compound mixture of glycyrrhiza, syrup of wild cherry, syrup of tolu, and syrup of althæa; the last named syrups serve also as excellent adjuvants. Creosote, the most valuable remedy in protracted coughs due to pharyngeal, laryngeal, and bronchial catarrh, is fairly palatable in a mixture of glycerin and sherry wine or elixir aurantii.

Astringents.—It will usually be found that bismuth and chalk mixture will do well in most cases where astringents are indicated. The following is a pleasant combination:

℞ Bismuth subnitrate, ...4 drachms;
Chalk mixture, ...4 drachms;
Glycerin, ...3 drachms;
Syrup of acacia, ...4 drachms;
Peppermint water, q. s. ad.....2 ounces.

Krameria and tannic acid are best administered in enemas of starch and water. The different newer tannin preparations may be given by mouth with aromatic powder or peppermint sugar.

Gastric Sedatives.—Last in line but primary in importance are the gastric sedatives, since a highly irritated stomach will often reject even the most palatable medicine. Cracked ice, cold or hot water, calomel and sodium bicarbonate, lime, peppermint, or bitter almond water, small doses of bismuth and cerium oxalate, minute quantities of tincture of iodine well diluted in plain or medicated water —are all useful and more or less pleasant gastric sedatives. In continued vomiting of infants lavage advantageously supplants drugging.

In administering medicines to infants it is often very helpful to divide the regular dose into several smaller doses, giving it, if need be, drop by drop until the whole dose is consumed. In this manner the most irritable stomach will frequently retain the medication where it would otherwise reject it. Before prescribing any medicine the physician should always bear in mind the grand dictum of Hillel.

"What is hateful to thee, do not unto thy fellow man."

329 East Fifty-first Street.

OCULAR INSUFFICIENCY AND SOME OF ITS RESULTS.

By Ellice M. Alger, M. D.,
New York.

One cannot be even ordinarily conversant with the medical literature of the day without having his attention called to the large number of articles dealing with the pernicious effects of what is popularly denominated eye strain. The group of men called by Gould "the Philadelphia school of ophthalmology" are the chief exponents of the theory that functional diseases of the eyes frequently become organic, that they are the sources of numberless reflex symptoms in other parts of the body, and possibly result in actual organic disease as well. They argue that every error of refraction or motility, however small, is certain under the conditions of continuous use which modern civilization prescribes for the eyes to result in an abnormal expenditure of nerve and muscle energy; and even though it does not interfere with the keenness of sight is very likely to cause pain or disturbance of function somewhere. They boast that this modern ophthalmology like modern dentistry is essentially an American development with refinements of diagnosis and treatment that are not practised anywhere else in the world. Moreover, they present the history of case after case of all sorts of conditions ranging from simple headache to curvature of the spine which have been relieved or cured by appropriate treatment of the eyes.

On the other hand, there is a group of men of equal reputation who are unfortunately striving to be identified as "the New York school of ophthalmology" who scoff at the idea that the eye can be the source of any serious amount of reflex disturbance, glory in the statement that they rarely find it necessary to use a mydriatic, and generally ridicule exactness in the correction of refraction. They and their friends present an equal number of cases which have failed of benefit from eye treatment. They insinuate that ophthalmologists like other people are sometimes subject to minor psychoses, and that in Philadelphia it seems to have taken that epidemic form that is so common in this generation. Small wonder that the profession is somewhat confused over the situation.

This confusion of ideas is not by any means confined to the field of ophthalmology. Some gynæcologists used to teach, and for aught I know still teach, that even the least of lacerations should be repaired, while others were and are surgical stand patters. It was not so many years ago that a gynæcologist was a regular part of the outfit of every large hospital for the feeble minded, the epileptic, or insane. Some proctologist published the results of operation on the rectal valves and sphincter, and at once a school of orificial surgery sprang into being; while the little work of Otis on the baneful reflex effects of strictures of large calibre was the source of hope and suffering to neurasthenics all over the land.

There was a basis of truth in every one of these theories, and there are several reasons why the same results were not regularly obtained by succeeding observers. In the first place, lack of definition in terms. Many of the conditions, even if well defined in the minds of experts, are not so understood by the profession at large, so that several perfectly honest men in using one name are referring to different diseases which perhaps have one or more common symptoms. For instance, to many physicians, including not a few oculists, the term migraine means any severe headache that proves obdurate to coal tar products; any disease with jerking of the muscles is chorea; and all fits are epileptic. Other terms refer to mere indefinite groups of symptoms possibly proceeding from many causes, such as neurasthenia and neuralgia. Then there are the terms which we are in the habit of using as cloaks for our ignorance or as excuses for laxity of investigation, such as malaria, uric acid, and autotoxæmia. Still more confusing is the old post hoc propter hoc fallacy which leads one to imagine that any symptoms occurring in the syphilitic or malarial must necessarily be of the same nature, and conversely that improvement following our treatment must be its result. The personal equation also plays a very important part, for we see every day men so enthusiastic and optimistic that they are constantly deceiving themselves, and less frequently men who from various motives are not above deceiving others.

All these elements play a part in the disputes over the relative importance of ocular reflexes. All are agreed that the *optically* perfect eye is an ideal which is sometimes approximated but never reached. It would require a perfection of form and an exactness of measurement hardly possible in the most expensive microscope or camera, and absolutely impossible in a living changing organ. The *physiologically* perfect eye is not so unattainable. In it, in a state of absolute rest, parallel rays of light are focussed so exactly as to transmit from the retina to the brain a sharp and undistorted picture. Even this physiological perfection is very rare. Almost all animals are far sighted or astigmatic; almost all children are so at birth, and to enable them to compensate for their optical defects the ciliary muscle was placed in the eye. This enables it not only to rectify the images of distant objects, but by extreme contraction to focus near objects as in reading and writing.

We have no exact standards for measuring the capacity of the eye, only a standard of averages. We know that the average patient can perceive letters of a certain size at a certain distance, but we find many whose acuteness of vision is far beyond the average. In the same way we have an average ability to focus near objects, which is greatest in youth and decreases regularly with age, but this power varies much even in individuals of the same age. Imperfect as are our estimates of power, we are much worse off when it comes to estimating the important element of endurance. Small wonder, then, that authorities differ widely as to the line which divides the physiological from the pathological. The ciliary muscle was as much intended for use as the cardiac. We do not forbid a healthy man to run for fear it will throw additional strain on a healthy heart, nor to lift for fear of straining his biceps. Moderate use is probably good for both, but it is evident that work which may be physiological for one individual may greatly overtax another. It is the same way with the eyes, the hyperope may have to strain to see even distant objects distinctly, but if he is a farmer or a seaman he is not doing a fraction of the work of a bookkeeper whose eyes are normal. The same thing is true of binocular vision. The eyes at rest may be convergent or divergent, but if the extrinsic muscles are so powerful that the adjustment of the optic axes is mere play, the condition can hardly be considered pathological. If this requires an undue expenditure of power the work ceases to be physiological and engenders results depending not only on the amount of error but also on the individual's health and the type of work he has to do.

Evidently the problem of eye strain, like that of heart strain, is an individual muscular problem, and the determination of the exact point where the physiological merges into the pathological depends not only on a proper estimate of optical defects and individual capacity for compensation, but also on a careful consideration of a number of variable factors, such as age, general health, and the conditions under which the eyes are habitually used. But while the heart muscle has its regular intervals of complete rest, the eye muscles, in many varieties of error and in many occupations, are kept continuously on the stretch for hours at a time without relaxation of any kind. Consequently the ocular compensation often breaks down, entailing either failure of sight or reflex phenomena in the eyes or other organs.

It is not my purpose to devote any time to the disturbances of vision under these conditions, because these are at once attributed to the eyes and proper treatment instituted. There are, however, many symptoms proceeding from failure of compensation which are regularly attributed to wrong causes to the great disappointment of both physician and patient, and it is to these especially that I wish to draw attention. They are the more easily overlooked because they often accompany perfect acuteness of vision and, paradoxical as it may seem, are more likely to result from small errors than large ones. This is easily understood when we consider that they result from fatigue and only appear after a period of work. The patient who has a tremendous optical error may strain after distinct vision, but finding the effort of no avail soon ceases and is content with limited vision. The patient who by straining even a little can see distinctly is under a constant stimulus to strain and often develops symptoms which he fails to attribute to his eyes because his sight is so very good. Aside from the muscular fatigue that comes from the constant use of overtasked muscles there are several phenomena which seem to be cerebral results of strain. The first results from the necessity of overstimulating the insufficient muscles, which is not only exhausting in itself, but not infrequently results in the involuntary stimulation of other muscles as well. Every physical director is familiar with the general tensioning up of the skeletal muscles which results from fatigue of even a single group engaged in some difficult or unaccumstomed exercise, and expects that as muscular power increases and coordination is better performed it will disappear. The same thing occurs in the ocular muscles. When the ciliary muscle, for instance, is so insufficient that it requires constant overstimulation there is often noticed an abnormal convergence of the eyes, a twitching of the lids or the corner of the mouth, or even the contraction of some distant muscle. This may disappear if compensation is restored, or it may become a regularly associated muscular habit. I have seen a spasm of the sternocleidomastoid apparently caused in this way.

In addition to these there is a mental strain necessitated by failing compensation. When reading, for instance, we proceed word by word and not letter by letter. To the astigmatic, however, many letters look alike, and a much closer attention to the letter of the text is compelled. To all intents and purposes the victim of astigma is reading proof all day long. Then there is the cerebral strain that comes from the necessity of constantly interpreting distorted retinal images. To the astigmatic eye all round things are more or less oval, all square things oblong, and a constant series of mental judgments is necessary as to the actual form of external objects. This is true even when both eyes are alike, but is much worse when there is a material difference between them. If one eye is astigmatic and the other normal the brain has to fuse the image of an oval with the image of a circle, or a square with an oblong, and the resulting impression is as tantalizingly indistinct as a composite print in photography. Then there is another element to be considered, that of time. Owing to the

fraction of a second required in focussing the abnormal eye its impression reaches the brain not only distorted but late. The diplopia that comes from divergence of the optic axes is bad enough, and the patient can often choose one image and disregard the other, but in this consecutive cerebral diplopia the distorted image is piled in on top of the normal one, so that it cannot be disregarded by the brain. When we consider the constant use of bad eyes compelled by modern civilization it is a wonder that the symptoms are not universal. But the human body is a tissue of compromises and compensations, and I wish to deprecate at the outset the idea that ocular anomalies always produce the same symptoms, or indeed any at all, or that indistinguishable ones may not be produced from other organs.

The reflex symptom which is oftenest the demonstrable result of failing ocular compensation is headache. That this is true is proved not only by the readiness with which many persistent headaches yield to proper glasses, but also by the ease with which they can be caused by improper ones. The great majority of our profession have, I think, accepted this view in theory, but in practice I doubt if there is any adequate conception of the enormous proportion which are so caused. Thanks to the advertising of opticians and the experiences of friends the general public is extensively adopting the idea. Attempts have been made to classify headaches according to their characters and localization as digestive, anæmic, uterine, neurasthenic, and so on, but the exceptions are so numerous that classification has done more harm than good by excusing a shallow investigation of each case.

Ocular headaches are of two kinds, accommodative and muscular. The first usually occurs in individuals who are hyperopic or astigmatic but who see perfectly by the aid of a ciliary muscle hypertrophied by use. If the strain is too great one of the first indications of failing compensation is a headache more or less severe that comes on when the eyes are steadily used, and is relieved only by longer and longer periods of rest. Such headaches are usually frontal and vary in character from a dull ache to the kind that last far into the night, and are so constant and severe as to cause suspicion of some organic disease. The ciliary muscle is like other muscles in that after prolonged periods of rest it loses any previously acquired hypertrophy and its ability to perform work varies with the general bodily health. For instance, a patient whose sight has always been perfect and painless is confined, or has typhoid, or develops some wasting disease. The ciliary muscles fail with the other muscles of the body and headaches begin. Such an ache is, of course, in a sense the result of illness, but it would not occur if the ocular compensation did not fail. It can be relieved through the long period of convalescence by suitable glasses which may or may not be made a fixture according to the nature of the case. In the same way the headache in anæmia and disorders of metabolism is very often simply an indication of insufficiency of a badly fed ciliary muscle.

There is another type of pain that is produced by insufficiency of one or more of the extrinsic muscles of the eyes. Normally the visual axes of the two eyes ought to be parallel when the eyes are at rest, and they should converge automatically for near work in an exact ratio to the amount of accommodation required. Very few of us have that perfect balance, but here again Nature is generally able to compensate for her deficiencies and prevent double vision by increased stimulation of the appropriate muscles. Our eyes may diverge when relaxed, but with a good, strong pair of interni we manifest no symptoms even when our work calls for continuous convergence. But if the extra stimulation needed is great, or the muscular power is so reduced by ill health that the compensation cannot be maintained, the eyes are exhausted by the continuous effort to avoid diplopia, and a very annoying type of headache ensues. In my experience these pains are more apt to be referred to the occiput and nape of the neck than to the forehead, though accommodative and muscular asthenopia so often go hand in hand that the distinction is not a clear cut one.

As a rule an ocular cause may be suspected in all headaches which occur regularly and get worse in the afternoon, which are increased by close work and relieved by rest and on holidays, or which occur only during certain occupations, like the theatre headache or that which comes from travelling by cars or sightseeing. It would seem that headaches which occur irregularly and at long intervals were probably not due to eye conditions, but there are many exceptions. I was very much impressed by seeing in a space of two or three days four patients whose pains had been so severe and continuous as to confine them to the house. One had been treated successively by several physicians for heat prostration, malaria, and syphilis insontium; another for chronic uterine disease; and a third was suspected of meningitis. In each case the symptoms were immediately relieved by a few drops of atropine solution, and a subsequent examination showed notable optical defects.

This brings us to the consideration of another type of headache in which the ocular factor is not so indisputed: Migraine. As I have before intimated the term is often misapplied to any severe headache. True migraine is said by neurologists to be a kind of sensory epilepsy characterized by an aura, a headache, and gastric symptoms. The aura is generally a visual one taking the form of amblyopia, or in many cases scintillating scotomata spectra are seen. The pain is almost always a hemicrania and may persist for days, the attack being often complicated with intense nausea and vomiting. It often begins in childhood, is worse during early adult life, and declines both in frequency and severity after middle age. In many cases it can be traced through several generations of the same family. Osler takes half a page to enumerate the various possible causes of migraine and another half page to giving a simple list of remedies which one may use and concludes by saying "It must be confessed that the headaches generally recur in spite of all we can do." Gould in describing the results of the careless reversing of a spectacle lens states his position thus: "I thought I had at last found a case of migraine that glasses could not cure." The disparity of the two positions could not be better illustrated. The visual theory is that in the majority of cases the disease is due to optical errors which are often family traits, and which cause not only accommodative and muscular asthenopia but a mental exhaustion as well from the

constant necessity of interpreting distorted retinal images. This offers an explanation of the early onset during school life, the regular increase with the failure of accommodative power in middle age, and the regular amelioration of symptoms in old age when the eyes no longer try to compensate for optical defects and glasses are worn. This accounts for the predominance of the malady among educated people.

The greatest obstacle to the acceptance of the theory is the large number of sufferers who have absolutely failed of relief by glasses. This may be accounted for on the theory that these are the cases in which the eyes play no part, or in which the nervous instability has become so firmly engrafted that irritation from any source is enough to precipitate an explosion, or it may be explained in another way. Retraction is not only a science but an art in which there are many degrees of skill, and unless the methods employed in private are very different from those of the public clinics one can readily see how cases might fail of relief.

Chorea is another disease whose dependence on ocular insufficiency has been suspected. But there is such a wide diversity of opinion as to the cases which properly may be included under the term that discussion is hardly profitable. Even the true chorea of Sydenham may not be an ætiological unit according to many observers. If one considers the disease an infectious one he would hardly expect to treat it with success through the eyes; on the other hand if one adopts the opinion of other good clinicians that chorea is a functional brain disorder, it is not so difficult to see how it might depend on morbid eyes. Until some means of positive ætiological diagnosis is possible the treatment must be more or less an empirical one, and the results various. The course of the disease is also so irregular that rapid improvement might often be in spite of rather than because of the treatment whatever its nature. The various habit spasms which have many resemblances to chorea, but whose nature is entirely different, are very often amenable to ocular treatment.

Neurasthenia is another term which we often use to cloak our ignorance of exact conditions, and only too often as an excuse for careless investigation. It is not a distinct entity, but is generally applied to a class of patients who are nervous, irritable, depressed, easily fatigued, physically or mentally, and complain of various functional disturbances without discoverable organic cause. It is the fashion to mark our exactness of diagnosis by specifying whether the neurasthenia is cerebral, spinal, sexual, cardiac, and so on. Some individuals inherit a nervous system so irritable that they are from birth unable to cope with the ordinary worries of life, but most neurasthenics date their breakdown from some illness or shock, and more often it is the culmination of a long period of overwork or excess. There is no factor that plays a more important part in acquired neurasthenia especially of the cerebral type than the overuse of eyes whose compensation is strained. There is no organ in the body where excess is so common and so surely disastrous.

The benefit which neurasthenics often derive from rest cures, vacations, and the like, is often, in large part, due to the practical relief from all close eye work till compensation is temporarily reestablished. This is one explanation of the fact that neurasthenia is so much more common in early middle life. To be sure, this is the time when work is hard and worry greatest, but it is also the time when compensatory power of even normal eyes has almost disappeared. Presbyopia normally begins between forty and forty-five, but in the hyperopic and especially in the astigmatic it may develop much earlier. After long periods of strain and symptoms attributed to many causes the compensation at last fails so completely that vision is defective, and the eyes receive proper care. The last half of life often offers the strongest possible contrast in its tranquility and repose. Neurasthenics notoriously never die, because many of them never had any trouble that proper glasses would not cure. When a woman of any age between thirty-five and fifty comes to us with the complaint that she has headaches, that things get dark before her eyes, that she is tired and irritable and nervous, it immediately occurs to us that this is the period popularly called the change of life during which sensations of almost any sort are to be expected and borne with all the philosophy the bromides afford. It is a curious coincidence that during this same period presbyopia is imminent with its increasing difficulty in reading and sewing, finally culminating in a frank inability to do longer without glasses. I am far from insinuating that the phenomena of the menopause are ocular rather than uterine, but many of the symptoms which women resignedly bear for years could be relieved at once by the oculist. Men at the same age have many of the same symptoms, and since this is the time when the pleasures of the table begin to be substituted more and more for those of bodily exercise, we are prone to ascribe these symptoms in men to uricacidemia, autointoxication, metabolic insufficiency. I do not question for a moment the frequent occurrence of these conditions, but they are not clear cut clinical entities and are commonly used as cloaks for ignorance or carelessness.

This is preeminently the age of specialism; each man more and more attracts to himself the types of disease in which he is especially interested, and in which he is most successful. But the specialties overlap each other in every direction, and in the narrowness of his own field one is apt to forget that the truth as he sees it cannot possibly be the whole truth. I have called your attention to a few of the many conditions which may result from abnormal eyes. I do not for a moment claim that they always produce the same symptoms. There are reasons for believing that the eyes are at times factors in many other conditions, such as neuroses of the stomach, neuralgia, reflex abdominal pains, wry neck, spinal curvature, some forms of epilepsy, and so on. But we shall not know what percentage of such cases are so caused, nor how to distinguish them from the rest without honest collaboration in the hospital and dispensary. Till that time we must explain to our patients as best we can the discrepancy between the honest and able ophthalmologist who believes he can cure almost any functional disease with glasses, and the equally honest and eminent neurologist who not long ago stated that the only neuroses he had ever seen resulting from eye strain had been in the persons of a few ophthalmologists.

31 EAST THIRTIETH STREET.

RHEUMATIC CRICOARYTÆNOID ANKYLOSIS.*

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In reporting a single case of cricoarytænoid ankylosis, it is my purpose to present our knowledge of this condition when it is due particularly to that indefinite element known as the rheumatic poison. It is sufficient to acknowledge that such an influence as "rheumatism" exists. It is for the future to determine its exact nature, and in the discussion of the matter before us, we must take for granted the correctness of the observations of the clinicians who have reported the few scattered cases of rheumatic cricoarytænoid ankylosis which I have been able to find. I have included under this general heading all of the cases due either to gout or rheumatism because of the similarity of these two influences. They are so few and the literature on the subject so scanty, that I think that a resumé of it, and a report of one additional case may be of interest, and may more clearly formulate our ideas of the condition.

Most of the standard works on laryngology make no mention of this symptom of rheumatic disease of the larynx, and I have been able to find only a very few descriptions of the condition in the literature. Morell Mackenzie (1), Semon (2), Watson Williams (3), and Casselberry (4) have written at some length on the subject of arytænoid ankylosis. About two years ago Delavan (21) published a paper on Ankylosis of the Cricoarytænoid Articulation Due to Acute Inflammatory Causes, but not one of his cases was due to rheumatism.

In a very exhaustive article by Semon (2), published in 1880, one of the earliest on the subject, On the Mechanical Impairments of the Cricoarytænoid Articulation, there are reported twenty-one cases of ankylosis, but not one was positively due to rheumatism. One case is reported as due to gout, but as tertiary symptoms of syphilis developed some months later in the pharynx and epiglottis, it is quite possible that this may have been the cause of the ankylosis also.

Morell Mackenzie (1), in vol. I of his *Diseases of the Nose and Throat,* under the heading of "Ankylosis of the Arytænoid Articulation" gives a short article, and merely mentions rheumatism as one of its possible ætiological factors but reports no cases. Since then articles have appeared from time to time on rheumatic laryngitis (5, 6) in which mention has been made of the possibility of ankylosis, but the actual cases reported are few.

Besides rheumatism, the other most frequent causes of cricoarytænoid ankylosis, are tuberculosis and syphilis. Cancer, typhoid fever, diphtheria, lupus, smallpox, and injuries are also ætiological factors of importance, and of course must be ruled out in making a differential diagnosis but in many of the cases due to these causes the appearance is fairly characteristic when taken together with the other symptoms.

That the rheumatic involvement of the cricoarytænoid joints occurs simultaneously with general acute articular rheumatism is possibly more common than is suspected. The larynx is rarely examined in these cases. It might easily be affected and yet the symptoms be overlooked, because of the severity of the rheumatic attack of the larger joints. However, there are several cases reported where the larynx was examined. These showed acute involvement of the cricoarytænoid joint, but this cleared up, and the joint returned to its normal condition. The cases of ankylosis reported, however, were usually discovered in seeking a cause for continued hoarseness or for dyspnœa.

Pathology.—Our knowledge of the pathology of the condition is indefinite. It is supposed to follow the general line of rheumatic inflammations of the larger joints, probably starting in the synovial membrane, extending to the perichondrium and cartillage and to the capsule with a subsequent organization of the inflammatory exudate. Semon (7) refers to a post mortem examination of a gouty patient in whom the cricoarytænoid joint was filled with tophi, but in life there had been no firm ankylosis, dysphagia, nor aphonia. Desbrosses (8) reports a post mortem examination of a patient who died of polyarticular rheumatism with endocarditis and pericarditis. The cricoarytænoid joint was filled with serous and bloody fluid, but this condition had given no symptoms during life and was discovered in the course of the autopsy.

Symptoms.—In ankylosis of the cricoarytænoid joint as distinguished from acute or subacute rheumatic inflammation of it, the symptoms depend mainly on the mechanical fixation of the articulation. A history of previous rheumatic or gouty attacks is of value in assisting the diagnosis, as is also the evidence of such previous attacks—namely, thickened joints or atheromatous arteries. The patient may complain of dyspnœa or dysphagia, or both these may be absent; he may be conscious of nothing abnormal, except a tendency of the voice to tire easily, or he may be subject to rather frequent attacks of laryngitis with its consequent aphonia, complete or partial.

External palpation of the larynx may be of value if it elicits pain over the cricoarytænoid articulation, but this sign is indefinite. It is the laryngeal mirror which makes the picture interesting. Theoretically the joint may be ankylosed so that the cord is fixed in any position from extreme adduction to extreme abduction. In the cases reported it has been usually in the cadaveric position or in adduction. The cord retains its normal tenseness, for there is no paralysis of the thyreoarytænoid muscle. It has a normal appearance, or it may be congested to a varying degree depending on the amount of laryngitis present. Next to the immobility of the cord the swollen arytænoid attracts the attention. This is absolutely fixed, or there may be a very slight amount of movement in it, especially on forced attempts at phonation. If the joint is fixed at the median line, during phonation the arytænoid of the normal side approximates the swollen arytænoid. This latter is not displaced by the pressure of the healthy arytænoid as it is apt to be if the lesion is a nerve paralysis and there is no ankylosis of the joint. If both joints are involved and fixed near the median line, there is marked dyspnœa, and if a nacute inflammatory process is ingrafted on this condition, tracheotomy

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may be necessary. When the cord is fixed in abduction, phonation is usually impaired, varying from slight phonatory waste to complete aphonia, if both cords are involved. All of these conditions are of course dependent on the mechanical fixation of the joint and hold true in ankylosis due to any cause.

The presence of ankylosis is to be distinguished from an immobility of the cord due to paralysis of the nerve supply of the muscles. The facts which point to ankylosis are: 1. The absence of anything exerting pressure on the recurrent laryngeal nerve. 2. Swelling of the cricoarytænoid joint which persists when seen at long intervals. 3. A normal tension of the cord. 4. An immobility of the affected arytænoid cartilage when pressed on by the normal arytænoid. 5. Tenderness on external pressure on the cricoarytænoid joint. 6. A sensation of grating sometimes obtainable by movement of the joint between the fingers. It is said that ankylosis and nerve paralysis may be coexistent, the ankylosis being a result of the nonuse of the joint due to the nerve paralysis. In this case the evidence of pressure on the nerve with its resulting symptoms would aid the diagnosis.

Treatment.—May be summed up very shortly. General antirheumatic treatment seems to accomplish nothing. The local treatment by sprays and inhalations relieve the laryngitis but have practically no effect on the ankylosis. Mechanical dilatation by means of tubes has been suggested as a method of breaking up the ankylosis, but usually the patients are not sufficiently disabled to be willing to submit to such disagreeable measures. If the dyspnœa is severe in a double ankylosis, tracheotomy may be necessary to preserve life. With a tracheotomy tube in place, attempts at dilatation through the natural passages or from below might be tried, but it is problematical how successful they would be.

A careful search of the literature has revealed only the following cases of rheumatic arthritis of the cricoarytænoid articulation.

CASE I.—*Lefferts* (9). Man sixty years old, had had rheumatic arthritis for years. Was seen only once in consultation for dysphagia and partial aphonia which had existed some weeks. The right arytænoid was swollen, and there was some œdema over it. The cord was fixed near the median line; outline of the arytænoid lost. Diagnosis, "Acute gouty arthritis of of the cricoarytænoid articulation with antecedent or commencing true ankylosis and consequent immobility of the corresponding vocal cord." The patient had been aphonic for some time and Lefferts thinks this attack may have been preceded by other attacks which had crippled the joint in the past.

CASE II.—*O. P. Bennett* (10). Man thirty years of age, had had several attacks of inflammatory rheumatism and had been hoarse two years, but worse the last six months. No history of syphilis or any injury to neck. Left arytænoid swollen and left cord immovable in median line. Daily spraying of the larynx with zinc sulphate, 3 to 5 grains to an ounce, and potassium iodide internally caused the voice to get clearer and stronger, but made no change in the laryngeal appearance in four months.

CASE III.—*G. H. Mackenzie* (11). Man thirty years old, sudden attack of huskiness and pain, with indefinite pains about the neck and shoulders. Discomfort on deglutition and tenderness over thyreoid and hyoid. The left cord was found in the cadaveric position. The left arytænoid was swollen. Inhalations and rheumatic remedies used. One year later the cord was still fixed, but the swelling of the arytænoid had disappeared. The case was recorded as rheumatic.

CASE IV.—*Charter Symonds* (12). Showed before the London Laryngological Society, a woman fifty-six years of age, hoarse one year, in whom the left cord and arytænoid were fixed in the median line, while the right arytænoid was approximated, but did not cross. The line of the glottis was oblique. There was no evidence of earlier ulceration nor pressure on nerves. No history of syphilis was given. Patient was seen at intervals of six months, but condition remained the same. Diagnosis lay between nerve paralysis and mechanical fixation; it was thought to be the latter, because of the position of the arytænoid, the oblique position of the glottis, and the fact that the movable arytænoid did not displace the affected one. Although in the report there is no evidence of rheumatism, no other causal factor was given, and it is included here as probably due to that cause.

CASE V.—*Lennox Browne* (13) in his chapter on Perichondritis says: "I have seen two cases which I believe to be ankylosis of the cricoarytænoid articulation due to rheumatism." A man twenty-three years old, had been under observation for eleven years. The right cord was fixed, and the voice had always been hoarse, although it had improved in the last two or three years.

CASE VI.—Man, seventy-three years old. It was impossible otherwise to account for the fixation of the right vocal cord and for a persistent hoarseness. In the first case arthritic diathesis was strongly manifested in the father. In the second, the patient had several evidences of the same condition in the joints of his hands and in the cartilages of the ear.

CASE VII.—*W. E. Casselberry* (14) under *Arthritis Deformans of the Larynx* reports a woman fifty-eight years of age, seen for some weeks, presenting almost complete ankylosis of both arytænoids near the median line, the appearance of which remained the same during this time. The posterior or cartilaginous portions of the cords were markedly thickened, i. e., the part overlying the arytænoid. At first dyspnœa was very marked, but as the congestion was relieved by treatment, this became much less. Had had two previous similar attacks. She had general arthritis deformans insidiously progressive for ten to fifteen years, but had never had typical paroxysms of gout or suffered from acute articular rheumatism. There had never been any pain in the larynx. She suffered a good deal from dyspnœa, but was kept comfortable by spraying. The cords could be approximated on phonation, but abduction from the position described could not be accomplished.

CASES VIII and IX.—*Simanowski* (15) mentions two cases of ankylosis of the arytænoid in which the author says: a rheumatic joint affection must be taken as a cause. No details are given.

CASE X.—*Escat* (16). Woman sixty years old. Arthritis deformans of twelve years' standing. One year dysphonia, the appearance of which coincided with a subacute general rheumatic attack. The only symptom was hoarseness. The right cord was adducted; the arytænoid prominence was swollen; there was no evidence of any pressure on the nerve. During an effort at phonation, the cord of the diseased side contracted, but there was no over riding of the arytænoid. The patient was seen only once, but there was no doubt of the diagnosis.

Ramon de la Sota y Lastra (17), C. Compareil (18), Sendziac (19), Simanowski (15), and Melzi (20) all mention cases of acute or subacute rheumatic inflammation of the cricoarytænoid articula-

tion, but from their reports it is not evident that they were cases of ankylosis.

To these ten cases I wish to add the following clinical report:

AUTHOR'S CASE.—Dr. T., twenty-six years of age, single, U. S., physician.

Family history: Grandmother rheumatic. Father had repeated attacks of inflammatory rheumatism extending over a number of years. No tuberculosis.

Personal history: At five years of age he had a severe attack of whooping cough, recovering without any complication. Never had typhoid, diphtheria, pneumonia, or venereal disease. Never had an acute attack of rheumatism. He has suffered some pain in the shoulder and in the knee at intervals, rheumatic in character, which seemed to vary with the weather. Has always had a "weak throat." Frequent attacks of "pharyngitis." Much use of the voice has always made him hoarse, even as a boy. He has had several attacks of laryngitis with almost complete aphonia, but he cannot remember any pain associated with these attacks, although there was a "sense of soreness" as the bolus slipped by the glottis. In the latter part of 1904, when tired with the hard work of the fourth year medical student, he had an attack resulting in complete aphonia. There was no pain, only soreness in swallowing. No laryngeal examination was made at that time. In April, 1905, an acute rhinitis was followed by huskiness and almost complete aphonia. An examination of the larynx at that time is said to have revealed acute laryngitis and an absence of movement of the left vocal cord. A few days later I examined his larynx and found the condition as follows: The whole interior of the larynx was slightly congested. The left cord was fixed in the median line, being perfectly aligned in an anteroposterior direction, and was tense. The left arytænoid region was swollen. It was congested like the rest of the lining membrane of the larynx, possibly of a slightly deeper hue. There was absolutely no motion of the left cord in deep inspiration or in phonation. During the latter, the right arytænoid and right cord approximated the left, and during this position the appearance of the cords gave a picture of the larynx which, except for the swollen arytænoid and a mild laryngitis, was normal. The voice was slightly horse. Neither palpation of the larynx nor deglutition were painful. A general physical examination showed a well developed healthy man. Heart and lungs were normal. There was no evidence of anything exerting pressure in the chest or neck. Subsequently the radiograph gave a picture of a normal chest.

My first thought was that it was a case of unilateral abductor paralysis, but on talking it over with Dr. F. H. Bosworth whom I asked to see the patient, and on further repeated examinations, it became clear that it was an ankylosis of the cricoarytænoid articulation.

Under local treatment the laryngitis soon cleared up, but the condition of the arytænoid and of the cord has remained for a year as I saw it at first, except that the swelling about the arytænoid has diminished slightly, and there is perhaps a suggestion of attempted movement during phonation. Ordinarily nothing unusual is noticed in the voice, but it tires a little more easily than it should, and the patient is subject to mild attacks of laryngitis with its consequent hoarseness. Last October he had for the first time a rather severe attack of sharp pain in his great toe. This came on after attendance for a few days at wedding festivities with their accustomed temptations for the palate. The pain lasted about a day and was followed by a rather sharp laryngitis which subsided in a few days.

I am inclined to think that the two attacks were mutually dependent on the rheumatic or gouty element. He is at present an interne of one of our large hospitals, and has no trouble with his voice if he is careful and does not exert it. He is especially prone to attacks of hoarseness after he sings in a smoky atmosphere. Repeated examinations of the urine have failed to show any evidence of excess of uric acid.

I am led to the diagnosis of cricoarytænoid ankylosis for the following reasons:

1. Absolute immobility of the joint. In phonation pressure on the normal arytænoid against the affected one does not displace the latter. This it might do if the lesion was a nerve paralysis.

2. The swollen appearance of the joint has remained practically unchanged for months.

3. The normal tense appearance of the cord showing an absence of any local evidence of paralysis.

4. Absence of any evidence of pressure on the recurrent laryngeal nerve.

That the rheumatic element is the causal factor is indicated by: 1. A rather marked family history. 2. A personal history of indefinite rheumatic character, with a recent rather sharp attack simulating gout, associated with an acute attack of laryngitis. 3. The complete absence of any other known cause for the condition. It is for these reasons that I think the diagnosis of rheumatic cricoarytænoid ankylosis is justified.

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PHYSICAL TRAINING A FACTOR IN PSYCHOLOGICAL DEVELOPMENT.*

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The close affiliation of physical with intellectual training, now so generally recognized, is probably most observable in dealing with mental defectives, where the development of feeble minds has been much hindered and is perpetually being hampered by the many infirmities of feeble bodies, and of sense avenues imperfect, and often altogether wanting.

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Action is life; movement its first manifestation in both the vegetable and animal world, and further characterized in the human organism by a building up of brain, tissue, and fibre, as far as texture and quality will permit. Stillness is that death to which inertia, apathy, and finally torpor inevitably lead; and it is with these enemies of development and growth that we are brought into daily and unceasing struggle, to win for our feeble ones life in varying degrees, or at least to rescue them from a death in life existence, which is what degeneration in its lowest form actually is. Rest and repose are states in which both mind and body recuperate and prepare for action, but life is not generated in these states, and there is in truth a deep meaning underlying the poet's words: "While we rest we darken." How soon and how imperceptibly may not rest become stagnation? A step beyond the frontier, unguarded by the will, and one enters upon that condition of languor, idleness, and inertia which quickly dissipates what little vitality has been stored and deterioration begins.

We have said that movement is the first manifestation of life. Not only that, but it is so intimately connected with it that in some occult way it carries with it the very springs of life itself, creating ever expanding stages of new life. Let us go step by step from the lowest state of defect up to its approach to normal and you will see how the idea has been emphasized in our experience.

Indolence, practically, is as great a vice as drunkenness, and in the distress and ruin it occasions, may be as far reaching in its results. It is to an heredity of utter hebetude of body and mind, whether caused by alcoholism, inertia, or the despair of suffering mothers in their period of trial, that we trace much of the idiocy in our midst to-day.

Helpless, the victim of such heredity lies, a profound idiot, simply a breathing, sleeping, and eating—hardly a feeding—existence. For neither tissue, nerve, nor muscle may respond to or derive full nourishment from food and exercise, and even response to secondary movements is impossible. "An infant crying in the night, and with no language but a cry," he is, and must ever be.

Only a step removed from this perpetual infancy is the superficial idiot, who may be coaxed into voluntary movement through the medium of imitation unceasingly prompted and aided. With this feeble spark fostered and fed by daily bathing, rubbing, and massage; observation may be incited by the presentation of bright colored objects, balls, blocks, etc., inducing efforts to creep, to crawl, to roll, to seek after, to catch, to stand, and finally to step. Such exercises repeated many times, at intervals not to fatigue, are not less necessary than nourishing food in the work of nerve, muscle, and tissue building, by and through which the subject finally becomes capable of walking and of feeding himself, and possibly after a while, in some cases, of aiding in the care of younger children, gaining stimulation from their care and diversion. This condition of early childhood is the limit of his power—a power gained through the simplest of physical movements; exercises which moreover, must be persisted in to prevent his dropping into the helpless class we have just considered.

The idioimbecile and the low grade imbecile, each evince in a way peculiar to his class certain degrees of motor intelligence. These are the first to whom we can apply any definite system of training other than the mere movement plays of childhood. But here too deficiency of tone and quality forbid any exercises not directly associated with objects or strong incentive. Exercises with ladders, horizontal or perpendicular, timed races down hill or spaced walking up, climbing, leaping, swinging, the lifting of weights, the grasping, catching, and throwing of balls, are all valuable adjuncts in correcting faults of gait, and carriage and inducing grasp-power for the halting, dragging foot step, the leaning and lurching forward, the utter inability to take hold or to retain are all so characteristic of the imbecile.

Closely associated with these as the child grows and develops, are given the various active industries of house, farm and garden, in which he comes to find not only his happiness and life work, but that incessant prodding through exercise, without which the whole being—body, mind and emotions—would sink into lethargy. Possessed of greater intelligence children of middle and high grade, and those backward ones just across the border line, not only get more out of these same exercises and occupations than do the duller ones, but capable of responding intelligently to command, they gain from the physical and military drills, and the work in the gymnasium, a benefit which is invaluable to them in attaining accuracy, precision, and skill in the arts and handcrafts, which is the ultimate end and aim of their training.

Active sports hold a place by no means unimportant in our yearly program, and equally is deprivation made a discipline, as is participation and incentive to effort and to right living. Thus, there is planned and devised an unceasing round of active stimulating amusements. From the simple plays of infancy, the kindergarten games and outdoor sports of early childhood, the evening dances in which all are encouraged to join, to the baseball, football, and basketball matches of the stronger and brighter lads of high and middle grade, often successful in contests with visiting teams, in which those of very feeble mentality are interested and become enthusiastic observers. In this as in all else, in communities for the training of mental defectives, eternal vigilance must be the watchword. Here also the separation into groups, naturally aids; encouraging the weak by preventing unequal competition, it gives in truth "free play" to all, and precludes anything like bullying or the tyrannizing of the strong over the weak. Brisk walks through the grounds, or for those who cannot join in these, exercises on porches or verandas are an indispensable part of daily routine, as is a constant life in the open that of the milder seasons of the year. Even the most apathetic idiots find in this latter a benefit, and apparently a certain degree of comfort, while their care, amusement, and transportation to garden and grove, gives an interest and an excitement to those brighter ones who can "lend a hand."

But not only have we to provide for training in those movements essential to development of feeble bodies, but our plan would guard against those

which may prove hurtful. It is an accepted theory in physiological therapeutics that partial exercise, that is, persistent exercise of one region of the body to the exclusion of another, is a fruitful cause of disease, and often fatal.

Not only because nutrient action is stimulated in one area alone, but concentric and eccentric movements cause the general current of the circulation to set towards that area to an abnormal extent, producing hypertrophy, and if persisted in, to heighten nervous sensibility to the point of irritation. Moreover, the overfed, distended capillaries become too weak to push forward their contents, the blood stagnant and consequently deteriorated, looses its nutrient qualities, so that other areas fail to receive sufficient nutrition; whereas if these areas were occupied with physical exercises in such proportion as to equalize circulation before the point of tension or fatigue be reached, it is evident that the proper conditions for that higher degree of nutrition necessary for healthful functional activities would have been attained.

Now, this whole educational scheme for the training of mental defectives, is based upon the theory of malnutrition being both cause and effect, and therefore, it is evident we are dealing with a continuous condition in variously modified forms which experience has reduced to the foregoing classification; grouped according to diagnoses of the quality and tone of blood, bone, skin, muscle, nerve, tissue, and brain cells, together with the condition of the will, imagination, and the emotions as evidenced in motor and sensory power.

Recognizing that "movement is the most direct and proper means for provoking naturally, or in harmony with physiological laws, vital or biological motions, by virtue of which last the human machine in all its multiform organs and functions, is developed, maintained, and repaired;" we have tried, and with fair success, to adapt means to pathological conditions in such manner as to supplement needs, to promote a healthy operation of the various functions without over stimulation, and thus to relieve starved conditions without over feeding; the end in view being to gain for the individual that force and equilibrium which enables him, in a certain sense, to stand upright among his fellows—in a word, the attainment of selfhood, in some degree however limited.

Means must vary, and be adapted to the individual needs, for all may not receive alike, many not at all, nor may all attain to the same degree. Here, as we often say of ourselves, it is well to know one's limitations. Hence the safety in numbers which has given opportunity for the various groupings of mental defectives according not to age, but status of infancy, childhood, or youth, so that in physical exercises, as in correlated sports and occupations, each may go to this own place, and be there sustained, as long as he is under skilled supervision. One who has reached his limit does not go forward, but he is kept from the inevitable deterioration that awaits him in the world. There, forever misunderstood, either too much or too little is expected of him, and the psychic nature is in a certain way exposed to much the same danger of that hypertrophy and atrophy that we have been able to avert in the physical, only by close and persistent supervision.

Over excitation, producing a high degree of nervous irritability is not infrequently evidenced by an outbreak into insanity or, where the moral nature is altogether lacking, into absolute fiendishness, or else, missing the support and the constant stimulus to the exercise of feeble powers, dazed by unequal competition, the unfortunate drops out of the race into the wholly dependent, or worse still into the delinquent class.

Fortunate for society if dissolution follows quickly upon deterioration before transmission has perpetuated degeneracy, although not alone from this source comes the marked and rapid increase in the numbers of defectives. Heredity is law, and that continued and persistent mental activity without corresponding physical exercise, as seen first in our high pressure schools, and then in the strenuous business and society life of the day, is the crime of modern civilization, its legacy to the future an inevitable increase of the various neuroses, insanity, and imbecility.

Worse than useless is the effort to combat it with only those calisthenic drills, which emphasize tension in striving after mere muscular exercise without correlated movements to properly stimulate the whole being; or with sports which partake of the brutality of gladiatorial contests. Far better that we emulate the nobler lessons of ancient Greece, where both men and women entered into physical training in the spirit of a true patriotism with the one aim of elevating and of perpetuating a noble race.

THE RATIONAL TREATMENT OF DIABETES MELLITUS.

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Diabetes mellitus is a disease of faulty metabolism, characterized by a deficient power of oxidation resulting in the incomplete combustion of the carbohydrates and fats of the food and of the tissues.

This is a somewhat unusual definition, and therefore a word of explanation in regard to it is necessary. The most commonly recognized characteristic of diabetes mellitus is a prolonged excretion of glucose in the urine, the glucose is expelled through the kidneys because it is present in excessive amounts in the circulating blood. Sugar is present in excessive amounts in the blood because the organism is unable to oxidize it as it does under normal conditions. Under normal conditions glucose is oxidized in the main to carbonic acid and water and is excreted as such. The intermediate products, such as sarcolactic acid, glycuronic acid, etc., do not concern us at present. The point which I desire to emphasize particularly is that in this disease there is a failure of the normal process of oxidation.

This imperfect oxidation is not, however, limited to its effects on carbohydrates, for in every advanced case of diabetes the power of the organism

to oxidize fats is correspondingly weakened. In these cases, instead of carbonic acid and water, the normal end products of fat metabolism, we find acetone and diacetic and oxybutyric acids. All these bodies can be readily demonstrated in the urine of very severe cases of diabetes. The graphic formulæ of these three so called "acetone bodies" indicate their close relationship:

Beta oxybutyric acid.	Acetoacetic acid (Diacetic acid).	Acetone.
CH_2	CH_3	CH_3
|	|	|
CHOH	CO	CO
|	|	|
CH_2	CH_2	CH_3
|	|	
COOH	COOH	

The following formulæ show how easily we can pass from one to another by a simple process of oxidation:

$$CH_3 - CHOH - CH_2 - COOH + O = CH_3 - CO - CH_2 - COOH + H_2O\ CH_3 - CO - CH_2 - COOH = CH_3 - CO - CH_3 + CO_2.$$

Let us look for a moment at the urinary findings in the cases of diabetes as they present themselves to us. In a mild case of diabetes we find a small amount of sugar, but no acetone bodies showing that the organism is unable to properly oxidize its carbohydrates, but oxidizes its fats normally. In a little more severe case we find sugar and acetone showing that the power to oxidize fats is beginning to fail. In the next grade of severity we find sugar, acetone, and diacetic acid, and in the very bad cases sugar, acetone and diacetic and oxybutyric acids, indicating the progressive imperfection of the oxidation of fats.

I have gone somewhat into detail as regards this matter because it seems to me of the utmost importance that each case of diabetes should be considered by itself, and that the power of oxidation as regards both carbohydrates and fats should be individually estimated in each case.

Some one has said that the care of a diabetic is no work for a lazy man, and I certainly indorse this statement. The physician who observes his patient by occasionally estimating his excretion of sugar by means of the number of drops of urine which will reduce a certain amount of copper solution, and on the strength of this evidence proceeds to cut off starches and sugars indiscriminatingly, and to prescribe codeine, saccharin, and gluten bread will as often injure his patient as help him. The diabetic is as much in need of a thorough physical examination as the sufferer from any other disease; this may at once indicate some definite localized lesion as the underlying cause of his trouble, such as syphilitic or other disease of the pancreas, gallstones, an organic nerve lesion, or it may allow us to discover at an early stage one of the many complications to which he is liable, such as pulmonary tuberculosis, nephritis, etc. A weekly weight record is essential.

In order to diagnosticate and follow our patient's condition, frequent urinary examinations must be made. Each of these examinations must be made on the mixed urine, passed in twenty-four hours, which has been carefully measured. The sugar for twenty-four hours must be quantitatively estimated, not in percentages, but in total amount. (Nothing at times is more misleading than the percentage determination of a sample passed on rising in the morning.) Examinations for the detection of acetone and diacetic and oxybutyric acids are simple and should always be made. Quantitative estimations of urea furnish valuable data, as does also frequently the microscopical examination of the sediment.

One word about qualitative tests for glucose. There is a fallacy, quite commonly held, that urines with a specific gravity under 1.020 cannot contain sugar; the other day I ran over my records and counted fifty instances in which the specific gravity was from 1.006 to 1.018, in each of these sugar had been demonstrated, there were many more which I did not think it worth while to enumerate. I have come to rely upon Fehling's solution for the detection of glucose; if after boiling equal volumes of Fehling's solution and urine there is no reduction of the copper, there is no pathological amount of glucose present. If, however, a reduction occurs, it does not necessarily mean that glucose is present (this may be due to lævulose, pentose, glycuronic acid, excessive urates, chloroform, etc.), and therefore other proofs, such as the phenylhydrazine test, fermentation, polarization, etc., must be applied.

The underlying cause of the failing power of oxidation shown by the diabetic is as yet one of the unsolved problems. It seems most probable that it is due to the lack of an organized ferment which is normally produced, but whether this is in turn due to a pathological condition of some particular organ, such as the pancreas, liver, or muscles, or is the result of a defect of the metabolic activity of all tissues, is as yet unsettled.

However hazy may be our conception of the underlying cause, a fact which is firmly established clinically, is that by proper therapeutical means we can improve the powers of oxidation of the individual diabetic. This is the goal which should be continually our object in the treatment of the diabetic.

For any given case of diabetes we must first of all find out quantitatively his powers of oxidation. This we call his "tolerance" for any particular kind of food. For example, if we find that a given patient can eat 160 grammes of wheat bread with no excretion of sugar, but that 180 grammes of bread result in a glycosuria, we know that his "tolerance" (that is, the amount which he can completely utilize) is between 160 and 180 grammes of wheat bread, and we can represent this by the following formulæ: Tolerance of Patient A = 160 to 180 grammes of wheat bread.

When in a given case I have made the diagnosis of diabetes, it is my custom to give him written instructions for his dietary for each meal for a week, each day cutting off a little more carbohydrate food until on the seventh day his diet is composed of a definite quantity of fats and proteids only. The diet for this day is as follows, and is termed the "standard diet":

Breakfast: 150 c.c. of coffee with two teaspoonfuls of thick, sweet cream, two poached eggs, four slices of bacon, and butter.

Dinner (mid-day): 150 c.c. of clear bouillon; broiled fish with mayonnaise dressing; roast beef, 200 grammes; spinach or asparagus, salad of lettuce and tomatoes with French dressing, cream cheese, 20 grammes; butter; one small cup of black coffee.

Supper: Beefsteak, 200 grammes; eggs, scram-

bled, without flour; cup of tea; string beans, lettuce salad with French or mayonnaise dressing.

For the next two days the patient continues on the standard diet to which is added an "accessory diet" of 100 grammes of wheat bread equally divided between his morning and midday meals. The twenty-four hours' urine is collected and examined. If glucose is present he is allowed the standard diet plus a diminished accessory diet, e. g., 80 grammes of wheat bread. If the glucose is absent he is given the standard diet plus an increased accessory diet, e. g., 120 grammes of wheat bread. Proceeding in this manner we can determine the patient's tolerance for carbohydrates, and have a definite quantitative estimation of his powers of oxidation. By determining his tolerance at subsequent intervals we can compare the results, and thus have a real estimate of the value of our therapeutical measures.

While a study of the individual case is all important, it will be convenient for our purpose to classify our discussion of these cases under the heads of mild, intermediate and severe, bearing in mind that each grade may shade into the others, and that under each group we rarely find two cases possessing exactly the same picture.

I. Under the *mild* cases we include all those who show a partial inability to oxidize their carbohydrates, but on a diet restricted in carbohydrates have no glycosuria. These are able to completely oxidize their fats, and their urine shows no diacetic or oxybutyric acids.

II. The *intermediate* cases include those who can utilize none, or only a very small amount of carbohydrate food, and, in addition, show a diminishing power to oxidize their fats. These usually have a carbohydrate tolerance not exceeding 50 grammes of wheat bread, and show at frequent intervals a considerable excretion of acetone and diacetic acid.

III. The *severe* cases include those who have completely lost their power to oxidize carbohydrates, and on a strict fat proteid diet continue to excrete sugar in the urine. In these the power to utilize fats is markedly affected, and is shown by a continuous excretion of acetone and diacetic acid and usually oxybutyric acid.

Let us next consider the management of the cases belonging to each of these groups.

I. *Those excreting no glucose and no organic acids while on a diet from which carbohydrates are entirely excluded.*—Having established the tolerance in the manner described, the patient is put on a fat-proteid diet, to which is added an amount of carbohydrates represented by 50 per cent. of his tolerance. At the end of six weeks of such a diet we usually find that his tolerance for carbohydrates is increased, this in turn permits us to allow him a somewhat more liberal diet.

We frequently find that patients can utilize one form of starch or sugar much better than another form. For example, a patient whose tolerance is represented by 160 grammes of wheat bread may be able to utilize with impunity potatoe or oatmeal representing an amount of starch considerably greater than that which is present in 150 grammes of wheat bread. This allows us to make his diet more varied and liberal, but entails a corresponding amount of supervision and study of the individual case. Perhaps you have noticed that I have not said much in regard to gluten bread; this is because I rarely advise its use. Nearly all gluten breads contain forty-five per cent. of carbohydrates, while most wheat breads contain less than sixty per cent. of carbohydrates. I find that nearly every patient who is allowed to use carbohydrates food prefers a small amount of wheat bread to double the amount of gluten bread, therefore, by allowing a somewhat smaller amount of wheat or rye bread we are accomplishing the same thing as regards the restriction of carbohydrates, and giving our patient a food that is far more appetizing and palatable.

II. *Those whose failing power of oxidizing carbohydrates and fats is made evident by a continued excretion of glucose, acetone, and diacetic acid when carbohydrates are excluded from the diet.* It is at present an accepted fact that the utilization of carbohydrates has a great deal to do with the oxidation of fats and in preventing the formation of the organic acids in the body. If a healthy man be put on a diet consisting of fats and proteids exclusively, he will at first excrete some acetone in his urine; this will disappear in time as he becomes accustomed to this diet. Or, if we give such a man some easily absorbable carbohydrate, such as cane sugar, the acetonuria will at once disappear. These facts teach us several things. In the first place, withdrawal of carbohydrates may produce the formation of acetone bodies even in a healthy man, therefore, in the diabetic this is unimportant if transitory, but if persistent it is further evidence of his advanced condition. Again, it indicates to us ways in which we can hinder acetone body production; viz., by accustoming our patient to the new diet and by increasing his carbohydrate tolerance.

Accordingly we put these patients on a diet practically free from carbohydrates for a short period, say, a week, and then give them a day of mixed diet containing easily assimilated carbohydrates; this we repeat again and again, alternating the periods of restricted and mixed diet according to our symptoms, which must be carefully watched at frequent intervals. One of our most important guides in these cases is the extent and persistence of the acetone body formation. If these are increasing rapidly, and becoming more constant, we must recur to a mixed diet at more frequent intervals.

Another important guide is the change in weight. The patients of this class frequently lose weight rapidly on a strict fat-proteid diet. If, as is often the case, the patient is over weight, the restricted diet does him the double service of reducing his weight and improving his tolerance for carbohydrates; but even this may be carried to excess, and in some is entirely undesirable from the start. In these again one should have recourse to more frequent returns to the mixed diet, and the nutrition should be supplemented by considerable quantities of properly selected fats.

After a time under this régime we find that the tolerance for carbohydrates is definitely increased, and that at all times his diet may contain fifty to seventy-five per cent. of the amount of carbohydrates which represent his tolerance; this in turn serves to aid in the oxidation of fats and thus prevents the formation of acetone bodies; such a result allows us to transfer our patient to the cases of the mild class.

III. *Those who cannot utilize either carbohydrates or fats to any great extent, this being demonstrated by an obstinate excretion of sugar and organic acids.*—These are cases with a very grave prognosis and demand our utmost skill to hold in check the formation of organic acids and the threatening acid intoxication terminating in coma. As in our other cases an effort must be made to improve carbohydrate tolerance by the restriction of the starches and sugars of the food, but this withdrawal must be conducted gradually and with extreme caution, keeping a watchful eye on the progress of the acetone body formation and the change in weight. In these cases we must also be extremely cautious in the use of fats, at times restricting their quantity and selecting only those foods which are relatively poor in the lower fatty acids, since these fats have been demonstrated to markedly increase the formation of organic acids. The fats of vegetables and meat contain comparatively little of the lower fatty acids; our preference should therefore be given to these. Butter which has been thoroughly washed with water which dissolves out the lower fatty acids may be used with caution.

In these cases the restriction of carbohydrates cannot be pushed to the extent that is found advantageous in the less severe cases. A day or two of fat-proteid diet must be alternated with a diet containing a moderate amount of carbohydrates. The kind of carbohydrates to be used in these cases needs skillful selection, which can only be determined by observation in the particular individual. Thus, one patient will be found to utilize best the starch of potatoes (as first suggested by Mosso), another will do well on a milk diet, while for a third von Noorden's oat diet will best answer his requirements. Exactly why one patient should utilize one of these forms of carbohydrates better than another is at present beyond a satisfactory explanation, but clinically, it is a fact. Another fact, interesting and of importance clinically, is that if such a patient's starchy food be restricted to one form of carbohydrates his powers of tolerance increases more rapidly than when he is allowed several carbohydrates of different kinds.

In all diabetics, particularly on a diet rich in proteids, the nitrogenous metabolism is very great; this is especially evident in the severe cases. To meet this condition it has been found advantageous to reduce the meat of their food, substituting on these days eggs and the proteids and fats of vegetable origin.

To recapitulate, the diet in these severe cases should consist of alternating periods of the following:

1. Fat-proteid, the fats selected being those comparatively poor in the lower fatty acids.
2. Mixed diet, the carbohydrates being restricted in amount and limited to one kind, the kind being dependent on the individual tolerance.
3. Proteids and fats of eggs and vegetables.

The balancing of the various periods must be adjusted to the individual needs, and no specific directions can be laid down in regards to the duration of each. On the fat-proteid diet the acetone bodies are apt to be produced in considerable quantities. This must be carefully watched and not allowed to get beyond our control. A considerable loss of weight is a warning that we must add carbohydrates to the diet. When the excessive production of organic acids becomes apparent through a strong ferric chloride reaction, lævorotation after fermentation, and an excessive excretion of ammonia, the administration of alkalis is indicated. Sodium bicarbonate is one of the most serviceable. The amount which we should give depends upon the amount of organic acids which are being formed and which are therefore to be neutralized. Magnus Levy has estimated that it requires 80 to 120 grammes of sodium bicarbonate to neutralize 150 grammes of oxybutyric acid. It is rare, however, that such a large amount of oxybutyric acid is found in twenty-four hours. Evidently the most satisfactory way to decide upon our dosage would be to estimate the amount of organic acids being excreted, and so to compute the amount of alkali necessary to neutralize them. This is rather laborious for the practitioner and expensive for the patient, and a fair guide may be obtained by estimating the amount of the ammonia output. In the periods of carbohydrate restriction it is especially necessary to push the administration of alkalies.

The treatment of diabetic coma is one of prophylaxis. Whenever we discover that one of our patients is excreting considerable quantities of oxybutyric acid it is a warning that coma, however remote, may threaten at any moment. A diabetic may excrete oxybutyric acid for a long time before the fatal issue. Weintrands reports a case in which the excretion of oxybutyric acid was discovered four years before his death. I have at present one case under observation which excreted considerable oxybutyric acid nearly two years ago, and another who has shown a similar condition for over a year. Such cases must be handled very carefully, according to the outline suggested in describing the severe forms of the disease. The alkaline treatment must be pushed, and carbohydrates must be added to the diet. All the excretory apparatus must be kept active. Warm baths, active cathartics, and diuretic measures should be employed. In actual coma, irrigation of the colon, alkaline infusions, and a solution of cane sugar introduced by stomach tube afford us the best means of opposing the severe intoxication.

Another important element in selecting the diet of a diabetic is a consideration of the amount of energy which it will produce. The standard diet for a man of average build and weight should produce something over three thousand calories. If for a moment we consider diabetics whose power of oxidizing carbohydrates differs extremely it will be evident that the loss of energy obtained from the same food varies in a marked degree. For example, take two of my cases:

H. R.		
Carbohydrates of food	200 grammes	= 820 calories.
Carbohydrates lost in urine	30 grammes	= 123 calories.
Carbohydrates utilized by organism	170 grammes	= 697 calories.
T. F.		
Carbohydrates of food	200 grammes	= 820 calories.
Carbohydrates lost in urine	175 grammes	= 717 calories.
Carbohydrates utilized by organism	25 grammes	= 103 calories.

It is clear that out of 200 grammes of carbohydrate food T. F. gets only 103 heat units against 697 which H. R. obtains. Suppose now that each of these patients is put on a diet as follows:

	Normal. Calories.	H. R. Calories.	T. F. Calories.
150 grammes proteids yield	= 615	615	615
100 grammes fat yield	= 930	930	720
200 grammes carbohydrates yield	= 820	697	103
Every available	= 2,365	2,242	1,438

It is obvious from these figures that the heat units obtained from the same food would be very different in these two instances, and that T. F. would suffer very materially unless the loss from faulty carbohydrate metabolism was compensated by an adequate amount of other kinds of food. For this purpose the proteids may be utilized, but only in part. For instance, one patient whom I saw was getting 1,000 grammes of beef and 10 eggs with the purpose of supplying the food needed in lieu of carbohydrates. Even with this wasteful and expensive diet a glance at the energy equivalents will show how this patient was suffering for lack of oxidizable food:

	Calories.
1,000 grammes beef	= 1,300
10 eggs	= 700
Total food	= 2,000

leaving a deficit of about 1,000 calories a day. It is needless to remark that on this diet the nitrogenous metabolism was excessive, and the patient was losing rapidly.

Fortunately we have at our disposal another form of food, which, while it does not equal the carbohydrates in the production of heat, is in this respect far in advance of the proteids. I refer to the fats, and I cannot better emphasize their value in maintaining a proper balance of energy than by citing the caloric value of a few of the more common foods of this class:

	Calories.
100 grammes of butter yield	830
100 grammes of olive oil yield	930
100 grammes of bacon yield	748
100 grammes of cream yield	538
100 grammes of cream cheese yield	451

In this connection let us recall that in alcohol we have a food of great assistance in supplying fuel suitable for oxidation. For in moderate quantities well diluted it is undoubtedly a food, and thus taken furnishes to the body seven calories for each gramme consumed. Thus, fifty grammes of alcohol would furnish 350 calories, no insignificant factor in maintaining the daily balance of energy.

The caloric values of nearly all food stuffs have been scientifically estimated; much interesting data on this subject may be obtained from the compilation by Atwater and Bryant issued by the United States Department of Agriculture.

Drugs properly selected may be of considerable aid, but I always regard them as of secondary importance, and much less helpful than the proper regulation of the diet. I never use drugs until I have satisfied myself that diet is not accomplishing the desired result. At one time we hoped that by the administration of diastatic ferments, pancreatic extracts, etc., we might so change the starches of the food that the diabetic might be able to utilize his carbohydrates to better advantage; unfortunately thus far this class of drugs has proved of little service. In cases showing syphilis an ætiological factor, mercury and potassium iodide may prove of service, and certainly deserve a trial. In cases in which the glycosuria cannot be controlled by the diet, certain drugs may be found of advantage in removing the last traces of sugar, and in improving the tolerance for carbohydrates; these are jambul, opium, and its alkaloids, and the various preparations of salicylic acid; these are not of value in every case, and their value diminishes if given for too long a period. They should be administered for short periods and discarded entirely unless their value is demonstrable in the individual case. Codeine may be found of service in diminishing the thirst, in reducing the polyuria, and for some forms of nervous irritability. Arsenic and strychnine have certain value in the cases where tonics are indicated. Alkalis have been already referred to. They are of great service in the cases in which large quantities of organic acids are being produced, as they neutralize the organic acids, and thus prevent the excessive drain upon the fixed bases of the body. The most useful forms are the sodium bicarbonate, carbonate, and acetate, and the alkaline waters. They should be given in large doses.

Exercise is a valuable adjuvant in many cases. It should be prescribed with discrimination. It is particularly useful in the cases of the milder types associated with obesity; under proper regulation it aids in reducing the weight, in giving tone to the muscular apparatus, and in improving carbohydrate tolerance. On the other hand, in severe cases, with great loss of weight and emaciation, as seen most frequently in patients under twenty years of age, exercise should be restricted, and confinement to bed for short periods made necessary.

Baths and *massage* serve a useful purpose in keeping the skin active and in improving muscular tone. Robust patients may employ them freely, but caution in their use is demanded in cases of weakened vitality.

The diabetic should be warmly clothed, and should shun extremes of heat and cold. Family anxieties and business worries are particularly bad, and their effects can frequently be demonstrated by a lowering of the individual tolerance. Diversion and amusements which are not exciting are often a distinct help. Operations are to be avoided whenever possible, both on account of diminished reparative power and on account of the direct influence which a general anæsthetic has in inducing the onset of coma. One patient whom I recall lost the lower third of his foot as a result of the attentions of a chiropodist who was ignorant of the general condition. In another, a badly fitting shoe caused a blister, which resulted in a deep sloughing ulcer, involving the tendons of the great toe. Such occurrences impress upon us the need of warning the diabetic against traumata, even of the most insignificant character.

In closing, let me again refer to that all important matter of the diet. For each individual the physician must estimate the tolerance for carbohydrates and fats; he must carefully write out the foods which the patient is to take, considering in this the patient's ability to burn particular kinds of food and his caloric needs. This is laborious and requires much time and study, and the question may arise: "Is it after all worth the while?" My answer is that it is certainly worth the trouble and time, for it is only by these measures that we can intelligently follow our patients and improve their condition. Shall we prescribe to every diabetic who

comes to us, saccharin, codeine, and gluten bread with a superficial knowledge of the individual's conditions and actually do injury in fifty per cent. of our cases, with this satisfying placebo? Or shall we study each case carefully, and having satisfied ourselves as to the individual needs, proceed to treat them on a rational and scientific basis?

The result of the careful management of cases of diabetes is one of the most interesting and satisfactory developments of modern therapeutics. Under appropriate treatment practically every patient can be helped. A very large percentage can be brought to the point where they can use with impunity a mixed diet very slightly restricted, of great variety, and fairly agreeable. Their general condition may be so improved that life is changed from a burden to one of possibilities of real physical enjoyment. Even when coma threatens, this and its fatal termination may be averted for long periods.

130 WEST FIFTY-NINTH STREET.

THE DISEASED FAUCIAL TONSIL AS A CAUSAL FACTOR IN RESPIRATORY AND GASTRIC DISEASES.*

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We wish to limit our study of the diseased tonsil in the adult to that age when tonsils normally should be absorbed. We therefore pass by the familiar condition known as hypertrophy. We will look for the partially atrophied tonsil submerged, buried out of ordinary inspection sight. Nor do we desire to enter upon the histological field, except in a general way. We will limit our observations to what the naked eye can see.

My object in bringing before the society this kind of clinical study has, I think, a very practical basis; for the pathological picture which I will endeavor to present is, I find, seldom looked into and is made altogether too little account of in its causal relation to many respiratory and other diseases. This is not to be wondered at. Indeed, it is only within recent years that the laryngologist has come to see the full significance of this type of diseased tonsil.

As already noted, on superficial inspection the tonsils are often not at all in evidence. One sees no picture of the enlarged tonsils.

Sometimes (and indeed this is frequent) one notices the faucial pillars and the plica triangularis much thickened, and if the patient happens to retch, a more or less firm mass between the faucial pillars comes to view. Often, however, no such protrusion is seen, even in the act of gagging. But if the entire fauces are more carefully examined under good light there will be seen an area, described by an arc, or semicircle, the base or crura of which, beginning well down in front of and including the anterior pillars, meet over the uvula. This area is constantly many shades deeper red than the surrounding parts. If you now also examine the base of the tongue you will find, in many cases, the lymphoid tissue and circumvallate papillæ enlarged and more or less varicosity over the base of the tongue; so instead of having a semicircular arc we have a complete pathological circle of at least chronic congestion in which the partially atrophied faucial and lingual tonsils still show a varied degree of infiltration of their lymphoid and connective tissue elements. This picture is always diagnostically significant of the general pathological condition which we are to study.

I have already said that something of the true tonsillar condition may be seen when the patient gags. In most cases, however, one needs to separate completely the faucial pillars with some kind of pillar retractor, and examine the tonsillar tissue with a probe pointed hook while the fauces are in a state of rest. In most cases to allow a thorough use of the separator and probe, it is necessary to anæsthetize the faucial pillars. For the separation of the faucial pillars various kinds of instruments, I presume, have been used. I have not seen examinations of the tonsils made in this critical way either in the clinics of Europe or America as recently as eight or ten years ago, perhaps for the reason that then tonsils were considered either hypertrophied, in which case they were guillotined; or atrophied, in which case they were only topically treated. It was not thought that their disease extended much beyond their own precinct. I presume, though, that now all laryngologists make minute examinations of this tonsillar condition and use single hooks, forceps, etc., for separating the pillars. But all those who have used hooks and forceps must find them very inadequate. I have never seen any device with which one could expose the entire interpillar space with the forceps. The pillars, too, are apt to be contused and, as with the single hook, they cause excessive gagging and result only in a partial exposure of the hidden parts. Some years ago I devised a double probe pointed hook which was a great improvement over the single hook, but did not give a view of all the parts and still caused much gagging. I then conceived the idea of a double retractor with thin wire fenestra fitting the tonsillar pillars on the principle of Gleason's nasal speculum, but having a reverse scissor handle action of the blades. With this the entire tonsillar field could be exposed, but one could see in the action of the blades that the posterior pillar yielded but slightly. It was evident that only the anterior pillar needed retraction. This double action, too, caused as much discomfort as the former instruments; then I perfected one blade of the forceps. In most patients it causes no more gagging than is desirable; the pillar seems to lie comfortably in the wire fenestra or trough, and with the proper size, the entire interpillar area can be critically examined.

Anatomicopathological Condition.—By whatever means the parts are properly brought to view, the findings are usually as follows:

The superficial signs have already been noted. You now see that nearly all the frame work or connective tissue of the tonsil, as it existed in health, is left. (In many cases the real quantity of this tissue is increased.) The tonsil is really in a state of collapse by compression. Just as a moist sponge subjected to pressure and allowed to dry has still its honeycombed cells, so in the

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compressed tonsil, the crypts remain. Some of these become receptacles for particles of food, which, decomposing, become either irritating themselves or produce irritating secretions, inflammation, and, sooner or later, form a nidus for disease germs. In most cases, however, the soft tissues are far from being entirely absorbed; some of the follicular linings of the crypts and lymphoid tissue are still intact. The diseased condition of the tonsil itself accounts for this nonabsorption. Indeed, long after the collapse of the tonsil even there goes on a feeble proliferation of soft as well as connective tissue which is again followed by compression, thus if not preventing hypertrophy, then at least enlargement. This shrinking process then is not so extreme in most cases but that the crypts still secrete an exudate, not indeed of healthy lymph, but what are familiarly known as caseous exudates. These are not deposits which have entered extraneously.

Now the further result of the devolution of this form of compression force, exerted by the thickened faucial pillars and faucial irritants, tend to increase the connective tissue around the orifices of the crypts. Thus, the diagnostic probe usually finds a constricted opening and a sulcus behind. The exudates are then practically imprisoned until, by the force of their accumulations, they are forced out through the narrow orifice or, perchance, as often happens, the orifice becomes sealed, they suppurate out. This imprisonment of pathological exudates and their suppurative relief is especially known to take place in the supratonsillar fossæ—an area the original anatomical structure of which greatly favors the retention of morbific material. And in the anatomicopathological condition, now under consideration, the facility for the formation of inflammatory products is greatly augmented; for it is in this region where the frequent adhesions between the faucial pillars and the tonsil are most apt to form. These adhesions are usually seen in the upper third of the faucial pillars on a level with the attachment of the plica triangularis (this triangular fold is usually hypertrophied); together they form an outer membranous wall to the supratonsillar fossa.

On superficial examination this fossa seems to be a large crypt, but is normally a blind pouch, now made doubly so by this pathological outer wall. As already noted, this pocket like pouch does not undergo the shrinking process to the same extent as the tonsillar tissue below (much less faucial pressure is exerted upon it), but retains much of its soft, lymphoid, glandular structure, and thus, even more that the tonsillar pockets, this pouch constitutes a retention receptacle not only of its own secretions, but its more or less degenerate lymphoid tissue affords a favorable breeding place of infectious germs and for their absorption.

This pathological picture does by no means show all the conditions of this form of the diseased tonsil. The picture is, at most, only a general one. The particular variations one sees are almost as many as the different patients one sees —varied in point of adhesions, in the quantity of the remnant of soft and hard tissues, and in the number and position of sulci.

There is one condition, minor only in point of frequency, which is especially worthy of study, viz., where there are only one or two pockets set in a perfectly flat interpillar space, there is just sufficient of the former tonsillar connective tissue left to form the walls of the pockets; no soft tissue at all. These pockets cannot be detected except by the closest search for them with a probe. The openings to them are but pinhole in size. One sign or associated condition is the very close proximity of the pillars. The interpillar space is thus always small and shallow, scant room for more than two pockets. If there are two pockets, one is always found close behind the anterior pillar; indeed, when the probe is in the pocket and traction is made forward, the probe seems to be in the anterior pillar. This pocket is always deep, frequently over half an inch. There is usually little to attract attention either of patient or of physician. There are no caseous balls in these cases. The patient may, and many do, complain of foul breath; but there is small chance for detecting this during the examination, for the reason that at least three times daily the masticatory muscles, in the centre of which, as it were, these pockets are located, squeeze out the excess of their contents.

The Contents of the Sulci.—If the probe finds its way into the minute orifice either pus will flow out alongside of the probe, or the probe will be covered with foul secretion. We have here a genuine chronic abscess of a nature sufficiently retentive to produce a secretion of intensely foul odor, and situated in perhaps the worst place in the body for dispersion of morbid materials. The pus squeezed out by the masticatory process passes more or less constantly into the stomach. There is usually no mental reflex in this act, perhaps, because the ingesta form a sufficient diluent to neutralize the odor.

After the presentation of this general pathological picture it would hardly seem necessary to point out the relation this diseased tonsillar condition sustains in the causation of respiratory and gastric diseases. It is, no doubt, a matter of common knowledge; yet it seems this knowledge is a thing somewhat apart from wisdom; for we find that this knowledge is not now made as practical as it should be. Perhaps a review will help make it so.

First, then, in this form of chronic tonsilitis, we have even in the mildest type of it a low grade of inflammation. There is absolutely no barrier to the spread of this inflammation to the faucial pillars, the soft palate, the base of the tongue, and downward to the larynx and upward via the posterior faucial pillar to the nasopharynx and middle ear; because in all these regions the superficial mucous membrane is, for the most part, identical in structure.

As a matter of fact, we see this almost daily during the periodical acute inflammation to which these tonsils are subject. Only at such times is there any noticeable pain. During the intervals (and these may be months and years) the patient may be seldom cognizant of any pain in the ton-

sils other than a slight soreness, primary to the unconscious expulsion of caseous masses. There is rarely any complaint. The patient complains of troubles elsewhere. Indeed, we may declare with truth that the simple chronic tonsillitis, even without caseous secretions, and therefore without fruitful soil for infectious pathogenic germs, is highly provocative of catarrhal processes in other parts of the respiratory tract, and this solely through the perversion of the normal secretions.

But while this simple process is no doubt the rule in most cases, at some period of the devolution of the tonsil the more advanced state is the most common, viz., the greater perversion of the normal secretions, first among which are the familiar caseous substances, the uric acid, and ammonium sulphocyanide products. These accumulated secretions, besides being irritants to the pockets themselves, form an excellent culture medium for the germination of pathogenic microorganisms. Here there are warmth, moisture, and darkness which invite vast quantities to streptococci, pneumococci, tubercle bacilli, etc., awaiting a favorable diminution in the resistance of the tonsillar tissue to invade the inner body and deplete its vitality. Though this invasion is not so likely to occur in this more or less fibroid variety of tonsil as in the soft tonsil of the child, yet infection from these sources is not a rare occurrence, especially from the supratonsillar fossa, where a remnant of soft tissue is the rule. It is from the supratonsillar fossa that the toxines proceed in peritonsillar abscess, the seat of which is usually between the inferior wall of the fossa and the superior margin of the tonsil. At this point adhesions of the tonsil most frequently occur, forming a rather thick wall of loose connective tissue. Thus more precisely the abscess focus is more often in this intramural space well back toward the aponeurosis of the superior constrictor muscle.

I think it will be seen now, without further enlargement, how the perverted secretions and the nested morbific products in this diseased area cause the various inflammations along the respiratory tract. The perverted secretions, by virtue of being irritating, and the infectious material, by virtue of being toxic, spread to the neighboring tissues and organs. The former process advances superficially along the mucous membrane, and the latter invades the deeper tissues through the blood and lymph channels.

While the tendency of the chronic inflammatory process is downward, the upper half of the lymphatic ring, too, is frequently invaded. Even in the adult in these cases, there are remnants of adenoid tissue left in the nasopharynx and not infrequently in these diseased tonsils a corresponding condition is found in the pharyngeal tonsil.

Ear.—That middle ear disease is both a direct and an indirect resultant of this kind of diseased tonsil is, I think, beginning to be universally recognized by aurists. It results directly from the spread of the chronic process along the already diseased mucous membrane to the Eustachian tube; this pathway becoming more and more pathological by each recurring acute exacerbation of chronic tonsilitis. The result of this combined chronic and acute process is to cut off the air from the Eustachian tube, the obstruction being accumulated perverted secretions or hypertrophy of the adenoid tissue in the nasopharynx. Usually both these conditions are present. Indirectly, it results from the adhesions of the firm tonsillar mass to the posterior faucial pillar. You need but recall the structure and function of the mechanism concerned in the opening and closing of the Eustachian tube. All three of the principal muscles concerned in the proper ventilation of the tube and the middle ear have their inferior attachment in the soft palate, well down below its pharyngeal origin. That is, a larger number of their fibres radiate downward and outward, forming a part of the posterior faucial pillar. Thus when the pillar is tethered to the tonsil the soft palate is more or less fixed, a serious handicap to the muscles controlling the opening of the tuba ostii.

The hypertrophy and adenoid enlargement in the nose and nasopharynx interferes with the proper ventilation of the nasopharynx and, indirectly, the middle ear; the handicap of the dilator palatine muscles directly interfere with proper areation of the middle ear. Now the middle ear and its accessory cavities are by Nature a part of the respiratory tract; they are open air cavities; they demand for their normal life atmospheric food. Bezold's observations explain what happens in open air cavities when the air supply is cut off. "In all vascular cavities the volume of air diminishes whenever free communication with the atmosphere is interrupted, because the oxygen unites in chemical combination with the blood, and the amount of carbon dioxide is not sufficient to compensate for the loss of volume."

But the air need not be entirely excluded, nor is a vacuum essential to create a pathological base. There need but be a rarefaction of air in the nasopharynx and middle ear, and you have a foundation for almost every kind of ear disease. Quoting from one of my former papers: "Of all the respiratory air cavities, the tympanic air has the most delicate pressure balance. The least disturbance of the post nasal air equilibrium need but be continued to cause serious disturbance of the middle ear air equilibrium. This is the first causal condition of most forms of middle ear disease. The various pathological steps from this on then become the historical ones, the disturbance of the equilibrium of the tympanic air means soon a catarrhal tube; that means an obstructed tube, then a catarrhal vacuitous tympanum. This makes a most inviting avenue for infectious germs and the shut off, unventilated tympanum and antrum their ideal breeding place."

Stomach.—That the inflammatory process originally in the tonsils as such never spreads to the œsophagus and stomach is perhaps largely due to an interruption of the homogeneity of the mucous membrane. The ciliated columnar epithelium in the oral pharynx is replaced by the squamous variety. However, from our clinical observations alone, we learn that chronic gastric catarrh of the stomach is frequently associated with chronic

pharyngitis. The principal causal relation, so far as it emanates from the throat, is no doubt the swallowing of perverted and other irritating secretions. This has long been known to be at least concomitant with gastric and intestinal disorders, but this knowledge has not resulted in the common sense wisdom which points to other secretions even more toxic causing the same condition.

We have positive evidence that especially the foul caseous exudates formed and expelled from the diseased tonsils are constantly swallowed. It is surprising how large a quantity of this exudate is formed. I myself have scouped out a half drachm of this exudate each two weeks in a few cases. In some cases the autoemptying of the crypts is not so much an expulsion as a regular overflow; and much of this overflow, I am convinced, goes into the stomach during eating. That this transpires in the condition of abscess pockets which have been described, there cannot be any doubt. If the quantity is small, as it no doubt is at times, the normal gastric juices act as phagocytes, as it were, on the toxic excretions, but hardly so when the quantity is large, or when there is already gastric debility.

So then it is just as rational to suppose that chronic gastric troubles have in the first instance been caused by the exudates of chronic tonsilitis and pharyngitis, as that pharyngitis is caused by the eructations of products of indigestion.

We may, at least, have Beverley Robinson's pathological process reversed, viz., that dyspepsia increases an already existing pharyngeal catarrh, because the eructations of gaseous irritants and the acid matter which contains large quantities of butyric acid and similar substances tend to aggravate the condition. So we may say, an already existing dyspepsia may be aggravated by the swallowing of these foul infectious faucial products.

Lungs.—As in the case of the œsophagus, so in the larynx and bronchi the homogeneity of the suprafaucial mucous membrane is interrupted at the entrance of the larynx, the oral pavement epithelium is supplanted by the ciliated columnar, and this forms a barrier, more or less insurmountable by inflammatory processes from above. However, we know how readily this barrier is leaped over by certain kinds of acute catarrhal processes, and we know how weak this barrier is to the downward progress of chronic catarrh from the nose and throat. It is surprising how little there is in our literature on this subject. It is the rarest thing to see a reference to it in any treatise on bronchitis, though the process passes daily under the sight of every laryngologist.

In the clinical study of ozæna we have perhaps the best illustration of the descending catarrhal process where the first causal link in the pathological chain is in the accessory nasal cavities and the last link in the larynx or bronchi. The atrophic process with crusts and fœtor is seen in the larynx and trachea, and often traced up to a suppurating maxillary antrum.

But ozæna is a special disease. It has a causal base other than catarrh of the superficial tissues; yet we see the same descending catarrhal process in the case of any catarrhal or suppurative reservoir above, whether it be the open air cavities of the head or the cavities in the tonsils from which proceed catarrhal secretions, pus, and foul infectious exudates.

Thus, when the chronic catarrhal process, proceeding from reservoirs of foul material and pus in the tonsils, produces chronic pharyngitis (which is usually the first state), progress to a degree in which the mucosa and glandular tissue is hypertrophied or atrophied and loses by that same degree its resistance to the internal and external irritants, constantly dumped upon it—the chronic process in such a pharynx meets very little resistance in its downward march to the lungs. It is safe to say that when such pathological conditions in the upper tract, as have been pictured, exist, it is only persons with very robust lungs and constitutions who escape entirely such invasion.

My least contention in the case of the diseased tonsil as a causal factor in the respiratory disease is that it is always a very important segment in the vicious pathological circle we have tried to picture; but perhaps the best proof of this assertion is the benefits that accrue from the breaking up of this circle by the removal of this causal segment.

Remedial Measures.—In applying remedial measures I use the word "removal" of the diseased tonsils. Any less radical treatment has proved entirely inadequate. Fortunately, we need not have any consideration for the salvation of any part of this degenerate mass. If the tonsil has had any office it has now forfeited it. I should, therefore, on every account proceed to its entire removal; indeed I should recommend, aside from safety, to make thoroughness in the procedure the first consideration. To meet this indication, the technique is everything. The tonsilitomes, including the forked ones, are not only inefficient, but possess an element of danger.

Anæsthesia.—Of the first moment in the technique is the anæsthesia; without it very few patients will admit of thorough work. Fortunately, anæsthesia can be local; with the patient on the back under general anæsthesia it is much more rifficult to do the precise work. The method of anæsthesia I have developed during the last two years by a series of careful tests is so entirely satisfactory that I think I am justified in making it common knowledge. It is simple enough now. A ten per cent. solution of cocaine is diluted one half with adrenalin chloride 1 to 1,000 (cocaine five per cent. and adrenalin 1 to 2,000). The solution that is used makes it possible to use the cocaine strong enough to produce perfect anæsthesia. Careful asepsis in this technique perhaps accounts for the absence of reaction inflammation. I have used this solution as now proportioned in over fifty cases. It produced perfect and almost instant anæsthesia; it is a very effective hæmostat. This proportion of adrenalin introduced at the same time when the cocaine seems to create an instantaneous barrier to the entrance of cocaine into the general circulation.

The solution in an aseptic state introduced with a sterilized syringe is freely injected into

the tonsillar mass (which has been previously cleansed), and along every line where cleavage is to be made. This includes all adhesive tissues, and in all cases the point of the needle should pass outward into, but not through, the aponeurosis of the superior constrictor muscle. In order to reach all points, needles of various angles and curves are required. Here comes in the utility of the pillar retractors; without these it is impossible, in some cases, to make the needle anæsthesia perfect. It is well to paint the anterior pillar with a twenty per cent. cocaine solution before applying the retractor, and in sensitive patients the same solution is applied to the deepest recesses of the tonsillar tissue; that is, into the pockets. This makes the use of the needle almost painless.

Laryngologists now have numerous devices with which every vestige of the tonsillar tissue can be removed. Aside from efficiency, the choice of instruments, it seems to me, should always be determined by the element of safety. It is known that this kind of rather hard fibroid tonsil is more apt to bleed than the softer variety. However, it is only in the case of anomalies in the distribution of the bloodvessels and when the operator removes other than the tonsillar tissue or only a part that free hæmorrhage is apt to occur. That these anomalies do exist in about five per cent. of cases makes it needful for all possible caution. In the use of the old guillotine, as they were wont to be used in their superficial way, there is the mimimum of danger of wounding displaced vessels, but these cannot be used in this kind of tonsil. Next in point of safety comes the hot snare. This is both effective and safe; but on account of the severity of the reaction (you leave a burn plus a wound), its use is only justifiable in cases of pronounced bleeders.

The cold snare is next in order of safety. This can often be used if the tonsillar mass is sufficiently large and all the adhesions first well loosened. One meets cases in which the tonsillar tissue and pillar tissue are so agglutinated that the one cannot be distinguished from the other. Treatment in these, however, is most urgent. The operator must here make a severance line so as to create pillars. The cold snare has here a very limited use. The tonsillar capsule must be literally dissected out, but even here, when a certain amount of tissue has been loosened, the cold snare can be used with efficiency and greater safety than cutting instruments. But on the principle that the degree of safety is proportioned to the amount of tissue removed at one time, the cold snare is not as safe as an instrument with which the operator can more accurately gauge the amount of tissue to be removed.

This brings us to the presentation of the instruments which, in most cases, of the flat tonsils alone serve to do perfect work and at the same time possess the greatest feature of safety. They are the punch forceps now made in various styles. Of the rather large museum of these I have, I now use only five which I show, naming them in the order of their utility, beginning with those I have found least useful in this kind of tonsil: (5) Farlow's; (4) Myles's old or sharp hawk beak; (3) Hartman's largest size conchotome; (2) Myles's new alligator set (one straight, one curved right, and one curved left); (1) Freeman's sharp narrow hawk beak. This, of course, is not a fixed classification. The set of three Myles pattern has by far the widest application and in all points the safest; the set of Freeman's is placed first only because, as will be seen later, the cases for which they are adapted cannot be so well treated by any other surgical means. The evolution of punch forceps will no doubt go on, but I believe the Myles and Freeman sort will always be the genera—the head of the species.

The Myles alligator, right and left, enables the operator in most cases to shave out all the tonsillar tissue from the tonsillar capsule, including those far forward behind the anterior pillar and up in the supratonsillar fossa. But the Myles's old style is still useful in cleaning out recesses occasionally found in the tonsillar capsule. However, I no longer use the oldest style of these, but one with the sharp and dangerous beak cut down as far as the preservation of scissor action principle will allow. This makes a comparative safe and efficient trimming punch in those recesses which cannot be entered by the alligator forceps.

The treatment of the "abscess pockets" which I have described is of such far reaching importance that we may make especial note of the part which the Freeman tonsil punches serve in the treatment. You will recall the exact pathology of these suppurating sulci, their pinhole orifices, situated back of and close to the anterior pillar; the anterior pillar, indeed, forming the anterior wall of the sulcus and the aponeurosis of the superior constrictor muscle forming the outer wall, and the utility of these instruments will be seen. A punch forceps is needed, one blade of which will enter the sulcus and bite out the whole of the inner wall (toward the throat). The mere slitting open of this wall is entirely inadequate, for almost immediate healing together of such cut edges ensues, and the abscess persists; indeed, a little more than this wall should be removed, and in some cases the remaining part of the abscess wall should be thoroughly curetted and in all cases swabbed out with carbolic acid or tincture of iodine.

It may appear now that I do not after all favor the removal of the capsule of the tonsil. I wish to say that there should be the utmost endeavor made to remove it in all cases in which it is diseased. It is, however, not necessary in all the cases of the class now under study. Curettment and cauterization as noted are in most cases quite adequate. Stronger caustics should not be used on account of the cicatricial tension tissue they produce.

The Freeman forceps will, in most cases, punch out the entire wall. I think it might, however, be so modified that it would do it in all cases and remove more than the outer wall. I am, therefore, having the fenestrum enlarged at the expense of its ring, which is thicker than need be, and thus enlarge and make slightly more blunt the pointed or sulcus blade. If this latter is enlarged, of course, the orifice of the sulcus will

have to be made larger in some cases; this I do with a double edged triangular knife in a single cut made transversely, so that with the enlarged sulcus punch blade much more than the inner wall can be removed, enough to insure against any future coaptation healing, the object of this whole technique aside from thoroughness being to do the work by a minimum number of cuts, viz., two to each sulcus. Anæsthesia and ischæmia can usually be made effective in these conditions by packing the sulcus with the anæsthetic medicaments.

But without the use of these pillar retractors, even with this fine equipment of forceps, it will be found, in some cases, difficult to reach all parts. With these retractors, however, all parts are not only easily reached, but every operative movement is done under good sight.

If there are adhesions I sever these the same as in the use of the cold snare, exercising the utmost care not to wound the pillars. Then exposing the mass with the pillar retractors, piece by piece, the tonsillar tissue is shaved clean away from the pillars and from the entire aponeurotic capsule. With the use of the anæsthetic and hæmostatic formula, there is almost no bleeding during the operation and very little pain.

After Effects or Reaction Effects. Hæmorrhage.—If the faucial pillars have not been unduly wounded, and only tonsillar tissue has been thoroughly removed, I believe we need have no fear of secondary hæmorrhage. In my list of cases with this method I have had one hæmorrhage. It took place in a patient of sixty on the fourth day after carrying his eight year old boy upstairs. In this case, however, the cold snare only was used, and the entire tonsillar mass was clean shaved out—decapsulated. The hæmorrhage ceased spontaneously after some hours. To avoid hæmorrhage one thing at least ought not to be attempted: (1) Use no cutting instruments; neither scissors, knives, nor tonsillotomes (in adults) in combination with volsella traction. Nearly all primary hæmorrhages, I believe, are caused in that way.

Pain.—If the faucial pillars have not been unduly wounded (careful loosening of adhesions is not wounding) the pain is slight, and if a local anæsthetic is inflated upon the tonsillar wound free from clots, the patient does not usually lose a night's sleep.

Inflammation.—If the precautions which insure against hæmorrhage and pain have been complied with, and the technique has been absolutely aseptic, there usually will be no inflammation. There are, of course, conditions of the blood and tissues, principally the uric acid diathesis, which predispose to inflammation of the wound. There are other contingencies such as mastication of solid food which can mostly be controlled.

Its Wider Adaptation.—It is surprising how frequently this kind of diseased tonsil is found in pulmonary tuberculous subjects. We may not dilate now upon the significance of this, only to emphasize the great importance of the removal of a morbid condition which, to say the least, is a very serious handicap in the battle for recovery and may be a real feeder of the tuberculous process. Fortunately the operative procedure outline can safely be applied when needed in these cases. The minimum of shock and slight inflammatory reaction, and the cauterization of the wound with lactic or carbolic acid make it safe, except in advanced cases, and when there is considerable activity of the tuberculous process.

Conclusion.—If I should review any part of this study with the object of giving special emphasis it would, perhaps, be (1) that of the appreciation of the great variation in the morbid anatomy of this kind of tonsil, (2) the great perniciousness of the consequent morbid physiology, and (3) the urgent necessity of breaking up the vast pathological circle by removal of every vestige of diseased tonsillar tissue.

106 East Street, Vrain Court.

A CASE OF ECTOPIC GESTATION WITH BILATERAL SUPPURATIVE SALPINGITIS AND ADENOMYOMA OF THE UTERUS.*

By Stephen E. Tracy, M. D.,
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I desire to call attention to a case which was of interest because of the obscurity of the clinical diagnosis and the rarity of its pathological findings, that of ectopic gestation with bilateral suppurative salpingitis and adenomyoma of the uterus.

The patient first came under my observation on October 2, 1904, at which time she was weak and anæmic, had a pulse rate of 124, and a temperature of 101.6° F.

The personal history of the case was as follows: American, married, aged forty-four years, weight 125 pounds, had had five children and four miscarriages. Her menstruation had always been regular, lasted four or five days, and was accompanied by considerable pain. The last menstrual period prior to this illness was delayed about two weeks. Five weeks before coming under my care, when walking along the street, she was seized with intense, agonizing pain in the left side of the pelvis and was in a state of collapse when she reached home. A few hours after the onset of the pain she began to bleed and expelled from the uterus material which led her to believe that she had had a miscarriage. From this time until I saw her she continued to have pain in the left side, a dark bloody discharge, and an increasing febrile and weakened condition.

Upon examination there was found considerable tenderness across the lower abdomen, most marked on the left side, where a mass extended about two inches above the pubic bone. A vaginal examination showed a laceration of the perinæum and cervix, a uterus slightly enlarged and pushed to the right, and a large, bulging semisolid mass behind and to the left of the uterus. A tentative diagnosis of suppurating ectopic gestation was made, an abdominal section recommended, and on October 5, 1904, the patient was admitted to the Kensington Hospital for Women.

The patient had a bad bronchitis, and as her general condition was not good it was decided to wait a few days before subjecting her to an abdominal operation. Under rest in bed and tonic treatment, with ice bags to the abdomen and hot vaginal douches, she improved rapidly for ten days, when she developed a severe phlebitis of the right leg. As the pelvic condition was quiescent it was decided to defer operation until all evidence of

* Read before the Philadelphia Obstetrical Society, May 3, 1906.

the phlebitis had subsided, unless the intraabdominal lesion made an operation imperative.

On November 26, 1904, over seven weeks after admission and over twelve weeks after the beginning of the illness, under ether anæsthesia, the abdomen was opened and the large encapsulated mass of organized blood clot behind and to the left of the uterus was enucleated. It was then found that the right appendage was bound up in an inflammatory mass, and as there was what seemed to be a fibroid tumor in the posterior wall of the uterus I did a supravaginal hysterectomy. The vermiform appendix, which was thickened and adherent to the right Falloppian tube, was removed. The abdomen was closed without drainage, the patient had an uneventful convalescence, and was discharged December 22, 1904.

When I received the pathological report I was surprised to learn that there was a suppurative condition of both appendages and that the pregnancy had taken place in the right tube, while the hæmatocele was chiefly on the left side of the pelvis. The specimen was examined by Dr. Brooke M. Anspach, pathologist to the hospital, who kindly furnished the following report:

The specimen consists of the uterus and the annexa, removed by supravaginal hysterectomy. The surface of the specimen is covered with dense adhesions. The uterus is enlarged; the entire length from the point of amputation to the fundus being six cm., the distance from the insertion of one tube to the other at the fundus is seven cm. Below this the fundus is even wider and has a transverse diameter of fully eight cm. The enlargement is irregular and affects principally the left side. The greatest anteroposterior diameter on the right side being four and one half cm., on the left side five cm. The endometrial cavity is four and one half cm. in length; the mucosa appears to be normal. In the posterior wall of the fundus, where the greatest enlargement of the uterus is seen, there is a cyst which is irregularly spherical in outline and has an average diameter of two and one half cm. This cyst contains a reddish yellow blood clot; it does not communicate with the interior of the uterus, and is separated from the tube by a considerable interval; it is directly opposite the uteroovarian ligament, and is distinctly surrounded everywhere by uterine muscle, the strands of which are concentrically arranged. At the inner pole of the cyst, embedded in the muscle, an area about the size of a pea is observed, which has a color distinctly lighter than the surrounding muscle and appears smooth on section. At several other points in the cyst wall such areas are observed.

Right Side.—The tube and ovary are bound together by dense adhesions. The tube is nine cm. in length; it shows many surface adhesions and has a diameter which varies from one half cm. at the inner end to one and one half cm. at the middle and at the outer third. The ampulla and the infundibulum are distended with blood clot; the tube walls here are considerably thinned. The abdominal ostium of the tube is opened, and before the specimen was removed, apparently communicated with the interior of a pelvic hæmatocele, the organizing peripheral layers of which are found plastered over the entire posterior surface of the uterus and of the annexa, especially on the left side. The right ovary shows surface adhesions; it measures four by three by one and one half cm. and it contains a large Graafian follicle cyst.

Left Side.—The tube is nine cm. in length and varies in diameter from one half cm. at the inner end to one and one half cm. at the outer extremity. The outer half of the tube is distended with pus. The abdominal ostium is open, but it was evidently closed by adhesions before the tube was removed. The entire posterior surface of the ovary is covered with the organizing wall of the pelvic hæmatocele referred to above.

Histological Examination.—A section of the right tube at its fimbriated extremity shows surface adhesions, considerable œdema of the muscular coat, and a very marked distortion of the mucosa. Some of the plications of the mucosa are very much swollen and are densely infiltrated with polymorphonuclear leucocytes. The surface epithelium of these plicæ in many places is degenerated. The lumen of the tube is occupied by a blood clot in which there are embedded detached portions of the mucosa. No chorionic villi nor chorionic epithelium can be positively identified in the section. There are several bodies which appear as if they might be degenerated villi, but there is no conclusive evidence. A section from the ampulla of the tube shows practically the same picture as that just described, in addition, however, there are areas which indicate a chronic inflammatory process and contain connective tissue cells of an epithelioid type. A section from the right ovary shows a Graafian follicle cyst.

A section from the left tube shows surface adhesions; the muscular coat is œdematous and infiltrated with small round cells. There is some small round and some polymorphonuclear leucocytic infiltration of the mucosa; for the most part the plicæ preserve the integrity of their outline and of their surface epithelium. The lumen of the tube contains blood; this may have resulted from the traumatism incident to the removal of the tube. A section of the left ovary shows surface adhesions and a portion of the organizing hæmatocele.

In a section from the wall of the cyst in the uterine wall the surrounding musculature appears perfectly normal. The white homogeneous areas in the wall of the cyst (already mentioned in the gross description) are made up of small round, and spindle cells, having round or oval nuclei, which show some slight difference in their size and in their staining properties. Some well formed bloodvessels are seen, and again there are other blood spaces which are directly bordered by the small round or the spindle cells. This tissue is not at all points sharply defined from the surrounding musculature, and the muscle cells in a few places seem to be gradually transformed into it. Separated from the main collection of small round and spindle cells by muscular fibres, there are other small nests, some of which contain giant cells. The contents of the cyst consists of coagulated blood; the inner lining of the cyst is made up of a collection of irregular connective tissue cells; there are small round, spindle, and giant cells. These make up a distinct border between the cyst contents and the surrounding muscle. A section from the cornu of the uterus on the left side shows the ordinary fibromuscular tissue of the myometrium. The mucosa of the interstitial part of the tube is normal. There are several accessory canals, all of which are lined by low columnar epithelium. The endometrium is the seat of a mild, glandular endometritis.

Pathological Diagnosis.—Right suppurating salpingitis; hæmatosalpinx; tubal gestation (?); tubal abortion (?); right Graafian follicle cyst; left suppurating salpingitis; pelvic hæmatocele undergoing organization; left cystic adenomyoma of the uterine wall. At first the diagnosis of adenomyoma was made of the cystic tumor in the left uterine horn. The failure, however, to find any epithelium in this immediate area, the presence of giant cells, the dissimilarity between the connective tissue present and the usual cytogenic cells of adenomyoma led to the conclusion that perhaps it was a case of sarcoma.

Dr. Cullen examined the sections and pronounced the tumor an adenomyoma. He has drawn attention in his monograph, *Adenomyome des Uterus*, Berlin, 1903, to the fact that giant cells are sometimes found in adenomyoma.

In January of this year the family physician reported that the patient's general condition was excellent, that

she had gained seventy-five pounds, and that she was able to perform all her household duties.

In looking over the literature I found no case in which there was a suppurative condition of both appendages associated with tubal gestation, and but few cases of pyosalpinx with a tubal gestation on the opposite side.

Dr. Wilmer Krusen, in a personal communication, informed me that he had had one case in which there was an ectopic gestation in the left tube associated with a pyosalpinx on the right side with the vermiform appendix adherent to the inflammatory mass. In a study of thirty cases Brickner had one patient who was operated upon for a pyosalpinx one year prior to the tubal gestation. Brandler in an article *The Ætiology of Ectopic Gestation* states that Moskowicz found that gonococci and staphylococci were present in the pyosalpinx of the nongraviol tube. Inghram reports a case where there was a tubal gestation on the left side, the outer end of the right tube was closed by adhesive inflammation, and the tube slightly distended with pus. Nearly the whole mucous lining of the tube was destroyed by the inflammatory process. Murphy reports a case where there was a large myomatous uterus, a pyosalpinx on the left side, and a ruptured tubal gestation on the right side associated with acute appendicitis. Williams describes a case in which he found a macerated fœtus, of five months, covered with the amniotic sac, lying in the peritoneal cavity and adherent to the intestines. The placenta was found in the lumen, and the umbilical cord passed through an opening in the right Falloppian tube. A part of the tube near the placental attachment was sacculated and contained several ounces of pus. Cullen reports a case in which he made a vaginal incision and drained a tuboovarian abscess on the right side. On the left side numerous adhesions were broken up. Two years later he again operated upon the patient for a ruptured ectopic gestation sac on the left side. On the right side there was an abscess fully ten cm. in diameter.

In a report of ninety-three cases of ectopic gestation before the Pennsylvania Medical Society, September 27, 1905, Noble states that, "In not one case was a pyosalpinx of the opposite tube associated with ectopic gestation."

Considering the few cases of ectopic gestation associated with a suppurative condition of the opposite tube, which have been reported, I believe we must conclude that the condition is comparatively rare.

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INSTILLATION OF CARBOLIC ACID INTO THE EYE FROM A MEDICINE DROPPER THROUGH MISTAKE.

By James C. Carter, M. D.,
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On April 11, 1906, in the forenoon Miss Louise W., of Denison, Texas, called at my office, stating to me that something had come into her right eye the evening before while on her way to the opera house, and that it was paining her a great deal. Upon examination I found a very small cinder located upon the superior quadrant of the cornea on the temporal side, which, after using a few drops of a two per cent. solution of cocaine I removed very gently with a dull spud, after which I flushed the eye with warm boric solution, and advised her that it would get along all right without using any medicine in the eye. About 6 p. m. of the same day I met her on the street and she told me that her eye was paining her considerably, and upon inspection I found it very red and inflamed. I told her that I had better give her a prescription for something to use in the eye, consequently I gave her the following:

℞ Cocain. hydrochlorid., ...5 grains;
Acid. boric., ...10 grains;
Aq. dest., ...0.5 ounce.
M. S. Sig.: Instill four or five drops into the eye every three hours.

She used the medicine that night up to about 11 p. m. before retiring and the next morning until noon. At about 2 p. m. she went into the bath room to instill the medicine into the eye again, and instead of getting hold of the right bottle she picked up a one ounce bottle of pure carbolic acid, and filled the dropper about half full. She then pulled the lower lid downward, turned the eyeball upward, and squeezed the dropper, so that she must have at least put four or five drops into the eye. In an instant she screamed so that her mother and her aunt ran to her as quickly as possible, who then discovered her mistake. Her aunt informed me by telephone of the patient's accident, and asked what they must do. I answered her by saying: "Put alcohol in her eye as quickly as possible," whereupon she told me that they had none at the house. Then I told her that I would come to her just as soon as possible. I ran to the nearest drug store, which is about a half block from my office, bought two ounces of alcohol, and drove to the patient's residence, which was about ten blocks, just as hard as the horse could run; consequently I was in the house in less than five minutes from the time I was called up. I found such an œdematous condition of the lids that I could hardly open the eye wide enough to see the cornea, but finally did so, and found the lower half of the cornea perfectly white and the eyeball burned considerably. I used alcohol in the eye, and after this a two per cent. solution of cocaine, and finally an atropine solution (three grains to the ounce) with a view of avoiding iritis. In addition I kept both eyes bandaged up, but removed the dressing twice daily, and flushed the eye with hot boric solution and then a mild antiseptic wash. The inferior portion of the lid and ball were burned so badly that I had to use the film of an egg between the ball and lid to avoid adhesions. I also used a bland ointment after the third day, at each dressing. The pains had to be relieved with a narcotic. I kept both eyes bandaged until Monday, the 16th, then at 5 p. m. I dressed the eye, leaving the left one open, but keeping the right bandaged until the Sunday following, after which I removed the dressing entirely and left the eye open. The patient has now 20/20 vision in the eye and no adhesion between lid and ball, and the eye looks as perfect as it ever did before.

420 West Main Street.

THE KIDNEY OF PREGNANCY, WITH THE REPORT OF ONE CASE.*

By D. W. PRENTISS, M. D.,
Washington, D. C.

A vast amount has been written about the subject of diseases complicating pregnancy. A large portion of this literature is upon nephritis and eclampsia. Certainly, there is no more interesting and important group of cases than this, none which requires more skill and patience in diagnosis and treatment, and none in which the early diagnosis is so urgently needed if we are to give our patients the benefit of scientific treatment. It is not my purpose to discuss all the forms of Bright's disease that have been found in pregnancy, either existing before this began or developing during its progress from various causes, but I wish to limit this paper to the changes in the kidneys so often present which are due to pregnancy itself.

Toxæmia of pregnancy is the term used to denote the results of the retention within the body of waste products of the mother and fœtus. It includes eclampsia as well as the subject under discussion. While eclampsia is sometimes the last chapter in the "pregnancy kidney" syndrome, there are many cases which show no involvement of the kidneys; it is therefore not included in this paper.

By "pregnancy kidney" is meant the condition of these organs seen in pregnant women, which is the result of the increased work thrown upon them, to pressure congestion, and to the irritation of the products of catabolism. These changes vary within wide limits, from an alteration so slight that no subjective symptoms and but few objective symptoms can be obtained, to the most profound changes in its structure and disturbance of function which may lead to coma, convulsions, and death.

Undoubtedly there are many factors working together to produce these changes. During pregnancy the kidneys are congested from the increased work thrown upon them, *i. e.*, there is a physiological congestion present. Later in pregnancy as the uterus enlarges, the vena cava and renal veins are pressed upon, thus causing passive congestion in the kidneys, most marked in primiparæ and twin pregnancy. Degeneration of the epithelium follows with consequent impairment of the eliminative powers, causing accumulation of toxic bodies in the system. Many products of catabolism of the fœtus and mother pass through the kidney epithelium, and in its condition of lessened resistance must act as irritants. Williams says "it is apparent, therefore, that abnormalities in the functionating of these organs, which under ordinary circumstances might be of little importance, may be attended by serious consequences during pregnancy."

For convenience it may be well to divide these cases into several groups according to the severity of the lesions, although we must remember that one group merges into another: 1. Physiological kidney of pregnancy, or mild passive congestion. 2. Severe passive congestion with cloudy swelling. 3. Advanced parenchymatous nephritis.

1. Physiological kidney of pregnancy shows a mild passive congestion, with but little change in either the structure of the epithelium cells or in their activity. Albumin in the urine is seldom present, and casts are not found. The nervous phenomena of the earlier months of pregnancy are probably due in part to the diminished elimination of the waste products of the body. Something over fifty per cent. of all pregnancies show no further change.

2. Severe passive congestion with cloudy swelling. Here the urine shows a trace of albumin and possibly a few hyaline casts; as the degeneration proceeds fatty changes take place in the epithelium and the urine shows an increase in the albumin and organized elements; granular epithelium cells, and hyaline and granular casts. This group of cases begins about the middle of pregnancy, and in the majority of cases shows no tendency to develop the more severe symptoms. The blood pressure in many cases will be found to be slightly increased.

3. Advanced parenchymatous nephritis differs in no respect from a similar condition from other causes. The urine contains a large amount of albumin, casts of various kinds, granular and fatty epithelium, and often blood. Blood pressure is always raised and becomes very high as uræmic symptoms threaten or develop. These cases occur in about six per cent. of pregnancies.

There is a difference of opinion as to whether or not the blood pressure is raised during normal pregnancy. T. C. Janeway says: "We find Quirrel and Raynaud claiming that hypertension exists throughout, increasing up to labor; Wiessner, that a rise occurs during the later months; while Vaquez and Millet, Goldwater, and Cook and Briggs never found readings above the normal limit until uterine contractions had actually begun." I have taken the pressure in several cases of pregnancy at different periods of gestation, and have not seen an increase except in two cases, both showed considerable amount of albumin in the urine and other evidence of renal insufficiency. It is well known now that increased arterial tension accompanies parenchymatous changes in the kidneys, its degree running parallel with them. It is safe to say that during pregnancy there is no rise in pressure in the normal cases. Where we find this condition present we must conclude that there is some change going on in the system which is outside of the normal activities.

In group one or what we call normal cases, there are only the usual corroborative signs of pregnancy, morning sickness, perverted appetite, etc.

In group two, besides the changes in the urine mentioned, definite symptoms of renal insufficiency appear. These are usually not severe, but are of great value in putting the physician on his guard. Slight headache, lassitude, œdema of face and extremities, diminished secretion of urine are among the most prominent. The cases in this group make their appearance near the middle of pregnancy. About eighty-five per cent.

* Read before the Clinical Society of the District of Columbia, January 8, 1906.

remain stationary until delivery when, the cause being removed, they rapidly recover. Fifteen per cent. grow worse and constitute group three. The prognosis here is grave, but recovery often takes place.

The cases in group three give more definite symptoms, severe headache, ocular disturbances, marked œdema, great diminution in the amount of urine and urea excreted, mental and nervous disturbances, such as insomnia, delirium, coma, twitchings of the muscles, or convulsions; in other words, uræmia. Some of these cases terminate in eclampsia.

The diagnosis in the early stages can only be made by examination of the urine. The urine of each case of pregnancy should be examined at the time of the coming of the case into the physician's hands, and at regular intervals thereafter. Patients should be told to notify the physician of the occurrence of œdema, headache, diminished urine, etc. An important aid in diagnosis is the sphygmomanometer. T. C. Janeway recommends the taking of the blood pressure each time the urine is examined during pregnancy. It is safe to say that if this were done in all cases the morbidity and mortality from uræmia and eclampsia would be greatly reduced.

All pregnant women should observe the rules of hygiene. As soon as albumin appears in the urine or the occurrence of persistent headache, or an increase in the blood pressure the patient should be restricted as to the amount of exercise; the diet should be simple, with little meat. The skin and bowels should be kept active. If under this treatment the condition remains stationary or grows worse, as shown by the urine, blood pressure, and subjective symptoms, a more rigid treatment is to be inaugurated. Absolute rest in bed is essential, skim milk diet, and free catharsis and sweating obtained. Should this treatment not improve the condition and the symptoms be grave, especially if the child is viable, premature labor should be induced.

In closing this paper I wish to emphasize the importance in watching every case of pregnancy for the signs of renal change. Regular examinations of the urine with, if possible, estimation of the arterial blood pressure at the same time. And, lastly, the importance of instructing the patients to report at once the occurrence of continued headache, œdema, or diminution in the amount of the urine secreted.

Report of a case of kidney of pregnancy. Mrs. McC., colored, thirty-one years old, primipara. The family history is negative for tuberculosis, rheumatism and gout. The previous history. When a child she had frequent headaches and was always constipated, and had typhoid fever when thirteen years old. She menstruated first at fifteen, was irregular, the flow was scant, and with little pain. Since miscarriage she had suffered from the effects of lacerated cervix and perinæum, and retroversion. Four years ago she suffered with an attack of vasomotor disturbance of the feet, legs, and hands, simulating erythromelalgia, but recovered entirely from this during the first months of pregnancy. Several times in the past three years her urine was examined and found to be normal.

She became pregnant in January, 1905. March 21st the urine showed a faint trace of albumin. From this time until the first of September she passed from under my observation. About September 7th headache, which had been present for some days, became severe, œdema of the feet, legs, thighs, and hands became more marked. These symptoms continued in spite of treatment to the time of delivery. September 13th her urine showed a large amount of albumin, numerous hyaline, granular, and eptherial casts, and some blood. During this period the blood pressure, which was one hundred and seventy-five millimetres (R. R. three inch band), remained the same in spite of treatment with nitroglycerin and veratrum viride. She could get no relief from the headache and the vomiting spells which were present. On September 17th, one month before she was expected to be confined, I brought on labor by dilating the cervix with my hand and applied forceps at the superior strait. Dr. J. D. Rogers assisted. The patient soon came from under the infleunce of the chloroform and said her head was nearly free from pain, which by the next morning had entirely disappeared. Within ten days the albumin disappeared from the urine. She made a good recovery. The blood pressure coming down to one hundred and forty mm. by the tenth day. The baby did not thrive at first, but is now doing well.

This case, I believe, began as passive congestion, followed by cloudy swelling, progressed until there was a marked granular degeneration of the epithelium, parenchymatous nephritis. Just what would have happened if I had allowed her to go to term, it is of course impossible to say, but from the progress made during the eighth month, it is safe to say she would have at least suffered much inconvenience, and run the danger of uræmia or eclampsia, while the risk to the child would have been even greater.

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LETTER FROM MUNICH.

The University and the New Medical Buildings.—Notable Teachers and Their Courses.—Alcohol Injections in Tic Douloureux.—Psychiatry in Munich.

(*Editorial Correspondence.*)

Munich, *August 27, 1906.*

The past semester, beginning on the 1st of May and closing on the 1st of August, has been one of great activity. The university has been filled to overflowing, more than 5,500 students having registered for the term, of which some 1,500 have been attending the medical courses. Munich is offering more and more to the student, and may well be entitled to a front rank as far as the facilities for medical work are concerned. During the past few years many new buildings have sprung up about the City Hospital, and Munich now has thoroughly modern and comfortable hospital laboratory and clinic buildings, all easy of access. The new surgical and psychiatric clinics are in complete order, and by the fall semester the anatomical and physiological laboratories will have been moved into new and commodious quarters, and the eye and ear clinic will be ready to accommodate patients in a new building. The Munich medical buildings are most attractive in design, and in their internal arrangements are very practical.

With the rejuvenescence of the buildings the

university has been fortunate in having, as well, a group of able teachers, and it is unquestionably true that in certain branches Munich offers for the graduate student more than almost any other European university. It has its limitations, particularly in material, since Munich is a city of but half a million, but for all practical purposes this is sufficient, save for certain specialists. In internal medicine the courses offered by Professor Friedrich Müller attract the majority of students, and well they might, for a more attractive and thorough teacher would be hard to find. They present a mixture of simplicity and thoroughness that shows the natural gift of the teacher. Müller's course in percussion and auscultation is a very instructive one. The radioscope and special sound recording instruments are widely employed as means of corroboration, and thus a very fundamental grasp of these methods of examination may be obtained. Müller offers in addition special lecture courses on diseases of the spinal cord, and his clinical laboratory is open to the advanced worker.

The method of treating tic douloureux by alcohol injections continues to be received with favor. Continued experience seems to show that the patient remains in good condition and that the recurrence of the neuralgia is not common. A considerable proportion of the patients have remained well for a period of eighteen months. Levy, of Paris, has come to the conclusion that the method is one of great value. His histological studies would tend to show that the alcohol produces a primary degeneration in the nerve fibres in some manner resembling that caused by the injection of osmic acid, yet the advantage seems to lie with alcohol.

The new surgical clinic is complete and is an extremely attractive place. It is a modern surgical hospital constructed on simple lines, yet offering the best advantages for both patients and students. Professor von Angerer has a special surgical laboratory or clinical institute in connection with his clinic in which surgical experimental work is carried on. Professor Klaussner's courses in surgical diagnosis in the Poliklinik are received with much favor by the students.

The impetus given by von Pettenkofer to the study of the practical problems of hygiene shows itself in the scientific activity of the hygienic laboratory under the able directorship of Professor Gruber. Bacteriological water analysis is very actively carried on, and special stress is laid by him on the topographical study of watershed areas. His lecture courses on bacteriology and hygiene, five hours a week, and his hygienic *Prakticum*, four hours a week, have been extremely practical.

It is to Munich above all other cities that the psychiatrist turns his steps. Here Kraepelin has had a new psychiatric clinic built after his own ideas, and it is without doubt the most complete building of its kind anywhere. In Kraepelin one finds the natural teacher as well as the indefatigable investigator. His clinics, to which he gives six hours a week, are masterpieces for clear and intelligent teaching of a most difficult branch of medicine. He possesses a most happy faculty of persuasion combined with a lively humor that makes the investigation of a patient in the lecture hall, as well as by the bedside, a continual source of satisfaction. The impression made by the entire equipment of his clinic is pleasing. The rooms for the patients are light and well adorned with attractive pictures. Everything is scrupulously neat, and the absence of all restraint, the comfortable beds, and the signs of continuous investigation make one feel that at last the ideal hospital for those sick in mind has been evolved. The Munich clinic has 750 square metres of space devoted to scientific laboratories, anatomical, chemical, and psychological. Berlin, the next largest, has but 212 square metres, while the remaining clinics of Germany show: Giessen 184, Würzburg 178, Kiel 144, Halle 100, Heidelberg 70, and Strassburg 62 square metres. These excellent laboratory facilities offer unsurpassed opportunities for research.

Under the directorship of Dr. A. Alzheimer, a splendidly equipped microscopical laboratory is open to advanced students of brain pathology. Work is in progress in this laboratory on degeneration products of the nervous system, rabies, and the origin of the Negri bodies, the significance of *Körnchenzellen*, dementia præcox, and many other subjects, Professor Gaupp, just called to take the professorial chair at Tübingen, is director of the psychological laboratory. Active clinical work in the wards is a regular part of the routine, and cinematographic, photographic, stenographic, and phonographic records are taken of interesting speech or motor disturbances. The material in the clinic offers a continuous series of new phases. The 120 beds are continually occupied by new patients, the more common forms of mental diseases being transferred to the newly constructed asylum near Munich. It is due to Kraepelin's foresight that a plan of exchange of assistants between university clinic and asylum is in operation. Such exchanges of from three to six months have shown their value in the stimulation of interest in the asylums and the appreciation of the asylum situation by the workers in the clinic. New York State is fortunate in having a similar form of exchange between its pathological institute and its asylums. Kraepelin has further developed an idea that might well be made an integral portion of the asylum system in the United States. Every three months an assistant is relieved from regular ward duty. This gives him the necessary leisure to study on a particular problem, and the plan has given excellent results. SMITH ELY JELLIFFE.

LETTER FROM TORONTO.

The Remarkable Attendance at the Recent Meeting of the British Medical Association.—The Cordiality between the Physicians of the United States and those of Canada.—Honorary Degrees.—The Entertainments.—The Souvenir Book.—Excursions.

TORONTO, *September 8, 1906.*

The seventy-fourth annual meeting of the British Medical Association, which was held in Toronto from the 21st to the 25th of August, was one of the most successful meetings in the history of that organization. In point of numbers

it far outdid the meeting in Montreal in 1895. The estimate of the attendance puts the number down at 1,986, the most remarkable feature, from the standpoint of the Canadian, who after all was the most interested in the meeting, being the unusual attendance from our own country. There were present 1,078 Canadian practitioners, which is remarkable when it is remembered that there are only about 4,500 English speaking and 1,500 French speaking physicians in all Canada, and still more remarkable from the fact that the gatherings at our own national medical organization, the Canadian Medical Association, never reached 350. The prestige of the British Medical Association, the fact that great and eminent men were to be present from the home country and the United States, and the unusual transportation rates must largely account for this attendance. It is said that 650 attended from the United States, supporting the fact that there is a warm attachment between the physicians of Canada and those of the American Union. Probably it would be much better if there were closer intimacy among Canadian and United States physicians, as, while Americans have been freely invited to meetings of Canadian medical societies, we do not think our men have participated in the meetings of United States societies to the same extent that Americans have in ours.

The opening ceremonies on the afternoon of the 21st of August were a brilliant function. Then Dr. Franklin delivered his valedictory and Dr. Reeve gave the annual presidential address. Others who addressed this meeting were the lieutenant governor of Ontario, the mayor of Toronto, President Alexander McPhedran, of the Canadian Medical Association, President Bingham, of the Ontario Medical Association, and Irving H. Cameron, LL. D., F. R. C. S. During the progress of the meeting the following gentlemen received at a special university convocation the degree of LL. D.: Sir Victor Horsley, Sir Thomas Barlow, Sir William Broadbent, Sir James Barr, Dr. W. J. Mayo, Dr. Clifford Allbutt, Dr. Louis Lapicque, Dr. L. Aschoff, Dr. A. H. F. Barbour, Dr. Henry Langley Brown, Mr. George Cooper Franklin, Dr. W. D. Halliburton, Dr. Donald McAlister, and Sir William Julius Mickle.

The thirteen different sections met promptly at 9 a. m. each morning of the four days of the meeting, and all were well attended. The papers were generally of a high class, and the discussions keen, at times even animated. The general addresses brought together large crowds, taxing the seating capacity of the magnificent new Convocation Hall to its utmost limit. These were thoroughly appreciated. In the matter of entertainments for the members and visiting delegates, Toronto did probably as much as any other city of its size could do. The most notable of the garden parties was that given by Dr. Herbert A. Bruce in honor of his guests, Sir Victor and Lady Horsley. The annual dinner held in the large roller rink of the Victoria Club, was productive of good speeches. Among those who addressed the five hundred diners were Sir James Grant, Professor Goldwin Smith, Sir William Broadbent, Sir Victor Horsley, Mr. E. B. Osler, M. P., Mayor Coatsworth, Sir William Hingston, and the lieutenant governor.

The printing and publishing committee in connection with this meeting deserves a little notice for the handsome souvenir booklet on Canada.[1] Dr. Adam H. Wright, editor of the *Canadian Practitioner*, was chairman of this committee, and much credit for preparing it belongs to Dr. J. T. Fotheringham and Dr. Edmund E. King. The production is a credit to the Canadian printing art.

After the meeting excursions were the order of the day. While a great number went over to Niagara Falls privately and also with Sir Henry Pellatt's party to visit the power houses and electric plants, others went down to the Thousand Islands, and still others took themselves off to the cool and refreshing breezes of Muskoka. Over 100 delegates crossed the continent to see the great wheat fields of Manitoba and the Rocky Mountains. Later on McGill University will participate in the honor giving, as Sir Thomas Barlow, Sir William Broadbent, Sir Victor Horsley, and Dr. Clifford Allbutt have been selected for the degree of LL. D.

Therapeutical Notes.

The Tuberculosis of Parrots.—E. Delbano, of Hamburg (*Journal de médecine de Bordeaux*, June 3, 1906), having made some investigations with a view of elucidating the tuberculosis of parrots, has come to the conclusion that parrots in captivity contract tuberculosis from human tuberculous subjects. He also maintains that the bacilli of avian tuberculosis and of bovine tuberculosis and also of human tuberculosis are merely varieties of a single microbian species, the tubercle bacillus.

Postanæsthetic Acetonuria. — Lewis Beels (*Revue de thérapeutique*, No. 12), having studied a number of children before and after anæsthesia, found that acetonuria was frequently a result of the anæsthetic. In some cases this acetonuria is accompanied by symptoms of acid intoxication, and in cases where the kidneys are inadequate, they may terminate fatally. Although ether sometimes causes a very marked acetonuria, this is less injurious than that from chloroform, because the ether causes less damage to the cells of the liver and of the kidneys. It was discovered that the risks from the anæsthetic were not increased by a preexisting chronic acetonuria. As a practical point, he suggests that in order to prevent the ill effects of the tardy chloroform intoxication, it is advisable to give large doses of sodium bicarbonate for eight days previous to the operation.—Through *La Tribune médicale*, July 28, 1906.)

Application of Cold Water to Inflamed Hæmorrhoids.—Halbhuber (*Wiener medizinische Presse*, 1905) opposes the customary hot applications to inflamed piles, and recommends instead the treatment of cold water. The method is very simple. The water is directed in a stream from a faucet.

[1] Already mentioned in our editorial columns.—EDITORS.

or through a rubber tube, against the anal opening. The irrigations, lasting two or three minutes, and may be repeated every quarter of an hour, or several times a day. Two prolonged séances are necessary, one upon rising in the morning and one upon retiring at night. A piece of absorbent cotton is wet with cold water and applied as a compress after each irrigation. The irritation and pain are at once reliever, and the tumors diminish in size. Marked improvement results from four or five days' treatment.

The Danger to the Fœtus from the Use of Chloroform in Labor.—At a recent meeting of the Société d'obstétrique de Paris, M. Nicloux (*Le Bulletin médical*, June 2, 1906) determined, by a number of experiments, that chloroform passes readily from the mother to the fœtus. In fact, the liver of the fœtus contained more of chloroform than the liver of the mother. This is explained by the facility with which chloroform combines with the fats, and it is known that the fœtal liver contains an excess of lecithines. M. Budin, in the discussion on this communication, remarked that the chloroform must pass in very small quantity from the mother to the fœtus, because in the numerous occasions in which he had used it in obstetrics he had, almost without exception, observed no symptoms that would lead him to believe that the infant was affected by the chloroform. Nicloux reported that in several experiments upon milk goats he had found that chloroform passes rapidly into the milk, and that if the anæsthesia is continued the milk contains a larger proportion of chloroform than the blood. The infant, therefore, should not be put to the breast until several hours have elapsed since the anæsthesia, when recourse is had to ether or chloroform during parturition.

Poisoning from Application of Picric Acid to Burns.—E. J. Elliott (*La Tribune médicale*, July 28, 1906) reports the case of a young girl of fourteen years suffering with burns of the second and third degree, involving the limbs, the chest, and the face, who was treated with compresses moistened with solution of picric acid. The first action of the dressing was to sensibly ameliorate the condition of the patient, but on the seventh day after the accident the situation changed, the tongue became coated, the lips very dry, the face anxious, the pulse went up from 88 to 154, and the temperature rose from normal to 39° C. or ($102^1/_5$° F.). The conjunctiva became of a yellow tint, which gradually extended to the skin. At the same time a morbilliform rash broke out, particularly on the sides of the chest, the buttocks, and thighs, and inside of the knees. The urine was red and became greenish on the surface. The blood showed marked diminution of red cells, and an increase of eosinophiles. All the symptoms became less marked when boric acid dressings were substituted for the picric compresses. A number of such cases have now been reported, which prove that the application of picric acid dressings is not entirely free from danger. Picric acid, like several other derivatives of benzine and of phenol, appears to provoke a sort of methæmaglobinemia.

Effects of X Rays Upon Osteomalacia.—At a recent meeting of the hospital physicians of Rome, A. Ascarelli (*Gazzetta degli ospedali*, May 13, 1906) reported the successful treatment of a case of osteomalacia by the x rays. He was led to this application by two considerations, the well known atrophying action of the rays upon the genital glands (ovaries), and the observation that ovariectomy often cures osteomalacia. The patient was seriously ill and unable to leave her bed when the treatment began. After the expiration of two months, there was observed a notable reduction of the menstrual flow. Three months later the woman was so greatly improved that she could be considered as cured. She was able to go around freely, she did not now complain of any pain whatever, and she did not menstruate at all. This positive improvement or cure, and also the amenorrhœa, had continued for five months longer, when the case was reported. In discussing this report, M. Arcangeli pointed out that osteomalacia occurs occasionally in women, who have attained the menopause. It would, therefore, appear that the explanation of the effect of the x rays in this case was not to be found in the suppression of ovulation and menstruation, but rather in abolishing the internal secretion of the ovary. The x rays act in a similar manner to ovariotomy by causing a veritable atrophy of the ovaries.—*Le Bulletin médical*, May 23rd.

Treatment of the Toxæmia of Pregnancy.—Brodhead advises the following treatment: During the seizure chloroform and oxygen should be administered if possible. The patient should be prevented from biting her tongue, and from injuring herself by blows or falls. If the pulse is strong ten to twenty minims of fluid extract of veratrum viride should be given hypodermically, and five additional minims given every half hour until the pulse is 60. Norwood's tincture may be given in slightly larger doses. If there is collapse whiskey, morphine, and atropine may be used hypodermically. If the pulse is weak chloral and bromides may be given by rectum. If the patient is unconscious give one minim of croton oil in a drachm of olive oil, and if necessary a high enema of one ounce each of magnesium sulphate and castor oil. If she is conscious give two drachms of magnesium sulphate every fifteen minutes until an ounce has been given, then use the high enema if necessary. Then use a hot pack. Then irrigate the colon with several gallons of salt solution. Intravenous infusion should be only for severe cases. From twelve to sixteen ounces of blood may be withdrawn from robust patients. Nitroglycerin, caffeine, and strophanthus may be given if necessary. If labor has not commenced the cervix may be softened with hydrostatic bags. Dilatation may be completed by hand with delivery by forceps or version. If labor has begun use bags to soften and dilate, or dilate by hand and deliver with forceps or version. Dührssen's incisions or Cæsarean section may be used if the cervix refuses to dilate, and if the operator feels capable of performing the operation, otherwise medical treatment is preferable. In elimination lies the hope of salvation.—*American Journal of Medical Sciences.*

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LANDRY'S PARALYSIS AND PARALYTIC RABIES.

In 1859 Landry first definitely recognized and described a clinical syndrome which has since been known as acute ascending spinal paralysis, or Landry's disease. The characteristic feature of this condition is a rapidly advancing motor paralysis, beginning in the lower extremities, passing upward to the trunk and upper extremities, and finally involving the muscles governed by the medulla oblongata, and all this without being attended by wasting or by electrical changes in the muscles, without trophic lesions, and without fever. Moreover, the control of the bladder and rectum, as the rule, is not lost.

Although our textbooks agree in recognizing the actual existence of this condition, they are widely at variance when they come to discuss its pathology. No anatomical lesions pathognomonic of the disease constantly attend this group of symptoms. Some regard it as a peripheral neuritis, others view it as a degenerative change in nerve roots, and others have found myelitis and especially poliomyelitis. Some cases have developed after injury, and others are just as clearly traceable to a toxic cause. At least one bacteriologist has declared the disease to be infectious in its origin, and has isolated, in pure culture, a micrococcus (*Micrococcus thecalis*). Finally, some clinicians declare it to be a functional disorder only and without any recognizable basis. Osler says that, while waiting for additional light, we may regard the disease as an acute poisoning of the lower motor neurones.

P. Remlinger (*Bulletin médical*, June 2nd), in a recent communication to the Société de biologie, unreservedly declares that acute ascending paralysis has no unity, either anatomical, ætiological, or pathogenic. It can be caused, he says, by lesions of the spinal cord and equally by lesions of the peripheral nerves. At one time it breaks out suddenly without apparent cause; at another it appears in the course of convalescence from malarial disease, typhoid fever, influenza, or smallpox. It may be caused by the streptococcus, the pneumococcus, the proteus, the anthrax bacillus, and probably also by the toxines of these diverse bacteria. He therefore declares that it should no longer be regarded as a distinct form of disease, but as a group of symptoms, or a syndrome, likely to appear in very diverse conditions.

An important thing has been overlooked hitherto, namely, that the virus of rabies also may cause this syndrome to appear. Remlinger reminds us of the clinical fact that there is a form of paralytic rabies in which the paralysis begins with the lower extremities, then attacks the arms, and finally passes to the muscles supplied by the medulla oblongata. The convulsive seizures of the throat muscles in the deglutition of liquids occur only shortly before death, and may not be very marked. The resemblance of this clinical picture to that of acute ascending paralysis might readily cause the true nature of the case to be unsuspected. That this is not purely hypothetical is proved by a case observed by Remlinger and also by cases reported by others which he has found on record. The only method of diagnosis during life is to inquire if the patient has been bitten or licked by a mad animal or by one suspected of madness. After the death of the patient, he advises the inoculation of a rabbit with portions of the medulla oblongata and nerve tissue (made into an emulsion and injected under the dura mater) as the crucial test. He thinks that the routine adoption of this method in all cases of Landry's paralysis that come to autopsy is advisable, and believes that in a large number of rapidly fatal cases it will be demonstrated that the disease was in reality paralytic rabies. In other words, hydrophobia may and not infrequently does develop in a form closely simulating, if not identical with, acute ascending paralysis, without being accompanied by anything to excite a suspicion as to its true ætiology. This important statement will doubtless receive due attention in our systematic treatises hereafter.

THE WORK OF THE HENRY PHIPPS INSTITUTE.

The Second Annual Report of the Henry Phipps Institute for the Study and Prevention of Tuber-

culosis, covering the period from February 1, 1904, to February 1, 1905, constitutes a valuable contribution to the history of the work done by men engaged in the study of tuberculous disease (bacteriologists, pathologists, and therapeutists) at the present time. The first portion of the report is devoted to an admirable review of the clinical and sociological work done by the hospital, dispensary, and milk depôt of the institute. The well kept statistics of occupation, of social conditions and of the alcohol habits of the patients are highly interesting and instructive. The clinical data are reported with equal care and exactness, as are also the results of the treatment.

Next comes a tabulated report of fifty-five post mortem examinations during the first year and eighty-eight during the second year. Particularly interesting are the careful observations made on the clinical and post mortem conditions of the liver, the kidneys, the suprarenal glands, the brain, and the spinal cord. The neurological and mental aspects of the tuberculous patients are enumerated, and the conclusion arrived at is that the mental status of consumptives varies with each individual, often corresponding to mental and neurological conditions present previous to the tuberculous invasion.

The experiments in immunizing and in specific treatment in man by Maragliano's and Marmorek's methods are described. Then follows a careful review of recent investigations and observations upon the immunization of animals against tuberculous disease by Professor Leonard Pearson. His conclusions are quite sanguine, for he thinks that the absolute proof has been furnished that cattle may be rendered highly immune to tuberculous disease by a process that is not harmful to them.

Five cases of tuberculous disease in man were treated at the institute with Maragliano's serum. They were watched by three different observers who had divided the cases among themselves. Here are their respective conclusions: "The serum does not by itself produce a gain in weight." "The serum had apparently no influence on cough or expectoration or the presence of tubercle bacilli." "So far as it is possible to judge from so limited an observation, the use of Maragliano's serum is not indicated in cases of moderate or advanced degree." "The improvement in the temperature, pulse rate, and respiration dated from the admission of the patient. It is hardly likely that the few injections, accompanied as they were by so much physical discomfort, contributed in any way toward the improvement in this case." The last chapter of the interesting volume gives a description of the exhibit in connection with the St. Louis Exposition.

RESPECT FOR THE PALATE.

We have on more than one occasion protested against the tendency to deprive sick persons of savory food. Such a practice may perhaps be looked upon as to some extent a sin of omission, though not on that account to be set down as venial. When it comes to the unnecessary prescribing of medicinal preparations that cannot be swallowed without giving rise to disgust if not positive torment, the offense is decidedly one of commission. One of our contributors, Dr. Sheffield, whose article on Palatable Medication we publish in this issue, has done well to remind the profession once more of the duty of making medication as little repulsive as possible, and he is entitled to the gratitude of all of us for having pointed out various means by which that worthy object may easily be attained in many instances.

A hundred years ago many a pill was gilded—not altogether, we may suppose, for the purpose of sparing the patient's palate, that effect being considered only as an incidental advantage. Then came the coating of sugar, sometimes so adamantine that the pill traversed the alimentary canal with its shell intact. In such a case it was not sufficiently comforting to reflect that at least the pill had done no harm, for it had been intended to do good, but, like a bullet from an ill aimed gun, it had been wasted. Improvement kept on advancing, however, and of late years the manufacturing pharmacists have furnished us with coated pills that are above reproach. Still, a pill is a pill, a trying little hard thing that is apt to balk on its way down. Instead of gliding gracefully and imperceptibly over the sensitive entrance to the gullet, it seems bent on attracting attention, even to the point of suffering arrest. Sometimes it behaves like a cow's cud, though it never gives rise to anything approaching the cow's satisfaction as she ruminates, but leaves bad memories behind it. There is something in the way of taking a pill. If the patient will place it beneath the tip of his tongue, immediately behind the lower incisor teeth, and then take a big drink of water, he will generally swallow the exasperating little object without any trouble.

The taste of quinine is offensive to most persons, but there is a very simple way of masking it, made known to us several years ago by Dr. Abraham Jacobi. An ordinary dose is to be stirred into a tablespoonful of cold strong coffee. The mixture assumes the appearance of *café au lait* and is quite inoffensive to the palate. From

the gustatory point of view, milk is an excellent vehicle for chloral. We are sure that many of our readers could add something to the list of devices given by Dr. Sheffield, and we should be glad to receive suggestions for palliating the unpleasantness of medicines.

THE AFRICAN SLEEPING SICKNESS.

Whatever judgment humanity may pass on the acts of King Leopold in the region of the Congo, medical men must credit him with foresight in relation to that peculiar disease, sleeping sickness, which is so common in that part of the world. For the past three years the Liverpool School of Tropical Medicine has been supporting an expedition in the Congo country which has been engaged in studying the disease. This commission has made rather disquieting reports in relation to the spread of African lethargy, so that the president of the school, Sir Alfred Jones, requested an audience of the King of Belgium for the purpose of conference on the subject. As a result of the conference, according to the London *Times* for August 24th, his Majesty has offered a prize of 200,000 francs ($40,000) for the discovery of a remedy for the disease, and he has caused a credit of 300,000 francs ($60,000) to be placed in the Congo estimates for the expenses of prophylactic research.

The king agreed that the question was one of international importance and indicated his readiness to do everything in his power to relieve both the black and the white population from the possibility of infection. The committee of the Liverpool School of Tropical Medicine is to furnish, at an early date, a scheme for the prevention of the disease, which will receive the cooperation of the Belgian king if it is in any way feasible or practicable. Owing to the efforts of the men connected with the Liverpool school, the relation of the *Trypanosoma gambiense* to the African sleeping sickness has been established, and we are glad to be able to congratulate them on receiving substantial aid in their work from the Belgian monarch.

King Leopold has bestowed the Order of Leopold on Professor Ronald Ross, Professor Boyce, and Dr. J. L. Todd, the three investigators who have been instrumental in carrying the study of trypanosomiasis to its present condition.

The importance of the African sleeping sickness to the world at large may perhaps be better appreciated if it is realized that during the last few years several white inhabitants of the Congo region have returned to England suffering from trypanosome infection.

THE STING OF THE SCORPION.

Even the common scorpion of southern Europe, though it is not looked upon as very formidable, inflicts a sting which is extremely painful and often productive of severe and rather protracted constitutional symptoms. But the scorpion of the tropics seems to be more dangerous, and apparently its sting is sometimes fatal. Many works have been written on scorpion venom, but the subject meets with but little consideration in contemporary literature, possibly because instances of scorpion poisoning seldom come under medical observation.

Dr. H. Gros, a French physician serving in Algeria (*Archiv für Schiffs- und Tropen-Hygiene*, x, 16), has recently published rather a full account of a case observed by him, and his article seems to constitute a valuable addition to the current annals of tropical medicine. A healthy and robust agriculturist was stung on the foot, while he was lying in bed, by a blackish scorpion about as long as his middle finger, probably of the species known as *Scorpio afer*. He immediately felt in the foot a violent pain which he likened to the sensation of a ball "mounting to his heart." For a quarter of an hour he tried to step, but he fell down and was seized with severe vomiting, the ejected material being at first alimentary, then bilious and mucous, and finally sanguinolent. Saliva flowed abundantly from his mouth. He could not rise, and when his family came to his assistance they found him twitching convulsively "like a sheep with its throat cut." The sting had been inflicted at 5:30 in the morning, and during the entire day the man could eat nothing, though he had no difficulty in swallowing. He complained of dryness and stiffness of the throat, but was not very thirsty. His breathing was particularly painful and embarrassed. For the whole day and the following night he was extremely feeble and restless and could not sleep.

On the following morning the man was brought to Dr. Gros. His face was then pale, his eyes were fixed and haggard, and the upper part of his countenance was motionless, but he was constantly executing the movements of chewing and swallowing without opening his mouth. His gait was uncertain and he tumbled upon a chair rather than seated himself. His speech was slow and embarrassed, though he answered questions intelligently in spite of his stupid appearance. His tongue was thickened and coated and his breath was very fœtid, but there was no more vomiting. His chief complaint was of difficulty of breathing, and his respiratory movements, 48 to the minute, were per-

formed almost wholly with the auxiliary muscles, the diaphragm being paralyzed. Inspiration was twice as long as expiration. He had an incessant dry and painful cough, and his body was covered with sweat. His pulse was 140 and small and soft. There were very pronounced epigastric pulsations, but the heart showed nothing more abnormal than feebleness. The pupils were contracted and immovable, but he complained of no disturbance of vision. There were clonic movements of the upper limbs. Cutaneous sensibility was diminished, and the tendon reflexes were almost abolished. The number of leucocytes was decidedly diminished. Priapism, which has been noted in many instances, was not present, and there was no jaundice or any enlargement of the liver or spleen.

Though in the early part of his account Gros says that the sting was probably, from the description of the animal given to him, that of *Scorpio afer*, he subsequently intimates that it was that of *Scorpio tunetanus*, a species more dreaded in Algeria. He treated the patient with Calmette's antivenomous serum administered subcutaneously, and the man slowly improved. He thinks that from 10 to 20 cubic centimetres of the serum should always be injected if it is at hand; if it is not, Müller's treatment by means of hypodermic injections of strychnine sulphate is to be employed.

A CHANCRE OF DOUBTFUL SITUATION.

At a recent meeting of the Lyons Society of the Medical Sciences (*Lyon médical*, September 2nd) M. Moutot showed a patient with early constitutional syphilis the situation of whose initial lesion was looked upon as open to doubt. The occasion of this uncertainty was rather remarkable. When the man first came under Moutot's observation he had unmistakable parasitic sycosis on the chin, but he also had a generalized macular syphilide, together with manifest syphilitic induration of the submaxillary, subhyoid, epitrochlear, and inguinal lymphatic glands. He had previously been seen by a physician who had diagnosticated the lesion on the chin as a chancre. M. Moutot found also in the balanopræputial furrow an induration presenting the typical features of a healed chancre.

M. Moutot raised the question of whether or not the sycosis had been implanted on a lesion that had originally been a chancre. As some of the data in the case had no other foundation than the patient's story, and in view of the previous physician's diagnosis of the chin lesion as a chancre, it was only natural that the question should be raised. The man stated that the nodule on his chin had apppeared about a fortnight after his last coitus, no previous sexual intercourse having occurred for two years, and that it was not until a month later that he had noticed an ulceration of the penis; and he professed to be a very observant person. A further statment of his was that the macular eruption did not appear until six weeks after the inception of the nodule on the chin and only a few days after the occurrence of ulceration of the penis. The probability is, it seems to us, that the initial lesion was really situated on the penis, and that the patient, in spite of his profession of carefulness in observing himself, was mistaken in the matter of dates.

Obituary.

EVERARD D. FERGUSON, M. D.,

OF TROY, N. Y.

Dr. Ferguson died after a brief attack of an acute intestinal affection, on Saturday, September 8th, in the sixty-fourth year of his age. He was born in Moscow, Livingston County, N. Y., and received his literary education at Starkey Seminary, Yates County, Genesee College, and the University of Michigan, and was graduated in medicine at Bellevue Hospital Medical College in 1868. After practising medicine for several years at Essex, N. Y., he was appointed surgeon of Clinton Prison at Dannemora. He held this position for three years, and in 1878 took up his residence in Troy, where he remained until his death. Dr. Ferguson was a member of the New York State Medical Association, in the organizing of which he took an active interest and served as secretary of the association for several years. He was a member of the House of Delegates of the American Medical Association and at one time vice-president of the association, a member of the Medical Society of the County of Rensselaer, and a member of the Medical Association of Troy and Vicinity. This association tendered a testimonal banquet to Dr. Ferguson on April 18, 1906, and presented him with a silver loving cup as a token of esteem. In 1898 Dr. Ferguson's efforts resulted in the founding of the Samaritan Hospital, to which institution he has been attending surgeon since the hospital was founded. He was a powerful man in every organization to which he belonged and in the profession at large, and much respected by the community.

News Items.

NEW YORK CITY AND STATE

The Medical Library of the Late Dr. Weigel, of Rochester, is, by the will of the decedent, bequeathed to the Reynolds Library of that city.

The Medical Society of the County of Richmond.—The programme for a meeting held on Wednesday, September 12th, included a paper on Chronic Gonorrhœa, by Dr. E. L. Keyes, Jr., with discussion by Dr. Baldwin and Dr. Wyeth.

Bequests to Brooklyn Hospitals.—By the will of the late Lewis Luckenbach, of Brooklyn, the sum of $10,000 is bequeathed to the Methodist Episcopal (Seney) Hospital, for the endowment of two beds, to be known as the Lewis Luckenbach beds. The German Hospital Society receives $5,000, and in case the son of the decedent dies without surviving issue, $10,000 more is to be given to the Methodist Episcopal Hospital, and a similar amount to the Long Island College Hospital.

College of Physicians and Surgeons, Columbia University.—The opening exercises of the academic year 1906-7 will be held in the lower lecture room on Thursday, September 27, 1906 at 3 o'clock p.m. After a brief address of welcome by the president of the university, an address will be delivered by Dr. L. Emmett Holt, Carpentier professor of the diseases of children, upon Medical Ideals and Medical Tendencies. Seats will be reserved for the trustees of the university, for members of the faculty, and for other officers of instruction.

The Proposed New Hospital for Children at Buffalo.—The site for the new children's hospital, provision for which was made in the will of the late Dr. D. W. Harrington, has been acquired. Recently the trustees of the Buffalo General Hospital announced the purchase of the property abutting on the present hospital site and having 118 feet frontage on Goodrich Street, at a cost of $8,500. As it is not known yet what amount the General Hospital will get from the estate of Dr. Harrington, definite plans for the new building have not yet been adopted. It is probable that the bequest will amount to over $75,000.

The Medical Society of the County of Herkimer, N. Y., held its quarterly meeting at Little Falls, on Thursday evening, September 4th. The programme for the meeting was as follows: Address by the third vice-president, Dr. E. G. Kern, Herkimer, subject, The Artificial Feeding of Children; stereopticon demonstration illustrating Physical Characteristics of Clinical Thermometers; paper, Dr. H. D. Pease of the New York State Department of Health, subject, The Ætiology and Prevention of Typhoid Fever; paper, Dr. F. B. O'Leil, Ilion, subject, Diagnosis and Treatment of Typhoid Fever.

The Buffalo Academy of Medicine.—A meeting of the *Section in Medicine* will be held on Tuesday, September 18th, with the following programme: Demonstration of Professor Irving Fisher's apparatus for the mechanical estimation of dietaries, by Dr. A. L. Benedict; The Essential Action of Some Common Drugs, by Dr. Eli H. Long; Cysts of the Spinal Cord, by Dr. William C. Krauss. A meeting of the *Section in Obstetrics and Gynæcology* will be held on Tuesday, September 25th, with the following programme: Malpositions of the Uterus, by Dr. John V. Woodruff; The Principal Cause of Abnormal Head Presentations, by Dr. Thomas G. Allen.

The Association of Hospital Superintendents will hold its eighth annual conference at Buffalo on September 18th, 19th, 20th, and 21st. The programme prepared for the occasion includes an address of welcome by the mayor, Mr. J. N. Adam, which will be responded to by Dr. G. H. M. Rowe, of Boston. This will be followed by the president's address and a number of papers by prominent hospital workers. The officers of the association are as follows: President, George P. Ludlam, New York city; vice-presidents, Dr. Renwick R. Ross, Buffalo; Rev. George C. Hunting, Salt Lake City; Miss Mary L. Keith, Rochester; secretary, George Bailey, Jr., Philadelphia; treasurer, Reuben O'Brien, Paterson, N. J.

The Buffalo (N. Y.) Medical Clinic.—The regular monthly meeting was held on Thursday, September 6th, at the residence of Dr. Clark E. Ernest, the president, Dr. John Middleton, in the chair. Dr. H. C. Rooth exhibited a number of radiographs of various forms of fracture; Dr. E. L. Frost demonstrated under the microscope blood of the quotidian type of malaria; Dr. C. E. Ernest showed a heart in which the coronary artery had been obstructed by a new growth in the aorta. Despite this fact the heart muscle was in a remarkably good condition; Dr. H. H. De Groat related the histories of three cases of appendicitis. The paper of the evening was presented by Dr. George A. Sloan, on Early Massage in the Treatment of Fractures; discussed by Dr. Rooth, Dr. Ernest, Dr. Frost, and Dr. Thornton.

The Needs of Brooklyn Hospitals.—The Charities Commissioner has asked for appropriations amounting to more than $2,000,000 for improvements in the several public hospitals of Brooklyn and for the construction of an entirely new public hospital in that borough. According to the recommendations accompanying the request, the Kings County Hospital, in Clarkson Street, is in urgent need of improvements and repairs, which will cost at least $760,000, while the Bradford Street branch of the institution, in East New York, is in equally urgent need of $150,000, and the Coney Island Reception Hospital, also a branch of the Kings County institution, requires with similar urgency an appropriation of at least $100,000. These needs are based largely on the increased requirements of a rapidly growing population, but in the cases of the two branch institutions are due chiefly to the fact that these branches have been established without adequate buildings or accommodations. In addition, the commissioner says there is an immediate and urgent need in Brooklyn for an entirely new public hospital which will cost at least $1,000,000. The commissioner recommends an appropriation of $335,000 for the Cumberland Street Hospital, in addition to his other demands upon the public treasury for hospital improvements.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending September 8, 1906:

	September 8.		September 1.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	139	13	94	20
Smallpox	2	..	3	..
Varicella	9	..	12	..
Measles	54	3	41	3
Scarlet fever	46	3	44	6
Whooping cough	30	9	26	15
Diphtheria	125	16	149	8
Tuberculosis pulmonalis	329	168	374	148
Cerebrospinal meningitis	10	12	3	6
Totals	744	224	746	206

Society Meetings for the Coming Week:

MONDAY, *September 17th.*—Hartford, Conn., Medical Society; Chicago Medical Society.

TUESDAY, *September 18th.*—Buffalo Academy of Medicine (Section in Pathology); Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Society of the County of Kings, N. Y.; Baltimore Academy of Medicine.

WEDNESDAY, *September 19th.*—New York Society of Dermatology and Genitourinary Surgery (private); Woman's Medical Association (New York Academy of Medicine); Medicolegal Society, New York; Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Newark).

THURSDAY, *September 20th.*—Brooklyn Surgical Society; New Bedford, Mass., Society for Medical Improvement (private); Medical Society of City Hospital Alumni; Atlanta Society of Medicine.

FRIDAY, *September 21st.*—New York East Side Physicians' Association; Clinical Society of the New York Postgraduate Medical School and Hospital; Baltimore Clinical Society; Chicago Gynæcological Society; Manhattan Medical and Surgical Society (private).

SATURDAY, *September 22nd.*—Harvard Medical Society, New York (private).

PHILADELPHIA AND THE MIDDLE STATES.

University of Pennsylvania, Central Pennsylvania Alumni.—This division of the alumni of the university will hold its annual banquet at Sunbury on November 14.

New Superintendent of Blair County Hospital for the Insane.—Dr. Thomas F. Neil, of Philadelphia, has been ap-

pointed superintendent of this new hospital. The institution was lately completed at the cost of $250,000.

New Hospital of City Farm, Pittsburgh.—The new hospital department of the city hospital at Marshallsea was opened on September 7th, and will be devoted to the care of tuberculous patients.

Taxation of Cooper Hospital.—George J. Jessup, on behalf of the Cooper Hospital, has appealed to the Camden board of taxation to remove the tax from that building. He found that that city was the only one in New Jersey where hospitals were taxed.

Bequest.—By the will of the Reverend Alfred H. Kellog his estate will be divided between the Episcopal Hospital and the Bryn Mawr Hospital, upon the death of the last of the immediate beneficiaries. The first named institution will receive $6 200 and the latter $1,150.

Delaware Health Board Takes Action.—The board of health will probably stop the colored camp meeting which was to be held at Gum Swamp, near Dover, because the swamp is supposed to be infected with anthrax, a sufficient reason to keep all horses away.

Isolation Ward of the New Jefferson Hospital.—The isolation of patients at the New Jefferson Hospital will be made upon the roof of the building, where a small set of rooms has been arranged, including quarters for nurses, an operating room, and the like. Upon this roof there are no square corners, which would permit the hiding of infectious agents.

Scientific Society Meetings in Philadelphia for the Week Ending September 22, 1906.—Monday, September 17th, Northeast Branch, Philadelphia County Medical Society. Tuesday, September 18th, Dermatological Society; North Branch, Philadelphia County Medical Society. Wednesday, September 19th, Association of Clinical Assistants of Wills Hospital; Franklin Institute. Thursday, September 20th, Medical Society of the Woman's Hospital; Northwest Branch, Philadelphia County Medical Society. Friday, September 21st, American Philosophical Society; West Philadelphia Branch, Philadelphia County Medical Society.

BOSTON AND NEW ENGLAND

Personal.—Dr. Frank L. Morse has been appointed city physician of Somerville, Mass., to succeed the late Dr. A. B. Dearborn. Dr. Morse has been in charge of the bacteriological laboratory of the Somerville board of health since December, 1902, and will continue to hold that position.

An Isolation Hospital for North Adams, Mass.—At a meeting of the City Council, held on September 4th, on the recommendation of the mayor the order for the erection of an isolation hospital, submitted by the committee on finance, was brought before the council for immediate action, and was accepted by a vote of 18 to 1. The specifications call for a one story building containing two wards, two chambers, a kitchen, and bathroom, to be erected near the city farm, at a cost of $1,550.

The Rhode Island Medical Society.—The quarterly meeting of this society was held at Woonsocket, on Thursday, September 6th, under the presidency of Dr. Christopher F. Barker, of Newport. The following was the programme for the meeting: Report of Three Cases of Extrauterine Pregnancy, by Dr. John J. Baxter, of Woonsocket; Adenoids and the Tonsils in the Adult, by Dr. John P. Cooney, of Providence; Gastric Ulcer, by Dr. Charles W. Stewart, of Newport; The Care of the Consumptive, by Dr. Jay Perkins, of Providence; Mistakes in the Diagnosis of Pulmonary Tuberculosis, by Dr. Harry Lee Barnes, superintendent of the State Sanatorium at Wallum Pond.

The Mortality of Boston.—The number of deaths reported to the Board of Health for the week ending September 1st was 227, as against 212 the corresponding week last year, showing an increase of 15 deaths, and making the death rate for the week 19.66. The number of cases and deaths from infectious diseases was as follows: diphtheria, 28 cases, 1 death; scarlatina, 13 cases, no deaths; typhoid fever, 64 cases, 5 deaths; measles, 4 cases, 1 death; tuberculosis, 28 cases, 23 deaths; smallpox, no cases. The deaths from pneumonia were 12, whooping cough 2, heart disease 21, bronchitis 3, marasmus 3. There were thirteen deaths from violent causes. The number of children who died under one year of age was 67; under five years of age, 84; persons over sixty years of age, 32; deaths in public institutions, 100.

BALTIMORE AND THE SOUTH

The Richmond (Va.) Academy of Medicine and Surgery.—At a meeting of this academy held on Tuesday, September 11th, Dr. G. Paul La Roque read a paper on Symptoms and Diagnosis of Diseases of the Liver and Gallbladder.

The Louisville (Ky.) Academy of Medicine.—At the semiannual meeting of this academy held on September 6th, the election of officers resulted as follows: President, Dr. Donald R. Jacob; secretary, Dr. O. H. Kelsall; treasurer, Dr. Gavin C. Fulton, reelected.

The Claiborne County (Miss.) Medical Association was organized at Port Gibson on Monday, September 3rd, and the following officers were elected: President, Dr. W. D. Redus, of Port Gibson; vice-president, Dr. J. F. McCaleb; secretary and treasurer, Dr. George W. Acker. All of the physicians of the county were enrolled as members.

The Memphis and Shelby County (Tenn.) Medical Society.—The following programme was presented at a meeting of this society held on Tuesday evening, September 4th: A paper on Fibroid Tumors of the Uterus, by Dr. E. M. Holder, and one on The Early Diagnosis of Pulmonary Tuberculosis, by Dr. Richmond McKinney.

The Medical Society of Washington County, Maryland.—The following programme was arranged for a meeting of this society held at Hagerstown, on Thursday, September 13th: Report of a Case of Intussusception, by Dr. Mary A. Laughlin; Infantile Feeding, by Dr. D. A. Watkins; Pulmonary Embolism in the Puerperium, by Dr. S. M. Wagaman; Report of a Case, by Dr. I. M. Wertz.

The Atlanta College of Physicians and Surgeons.—Dr. William S. Elkin, of Atlanta, will succeed the late Dr. Hunter P. Cooper in the chair of obsterics and gynæcology. Dr. Elkin is dean of the faculty. Work is progressing most satisfactorily on the new $75,000 building of the college, and it will probably be ready for occupancy on or about October 1. Money donated the college by Andrew Carnegie will be used in fitting up the old Southern Medical College building, which will be known in the future as the Carnegie Pathological Institute.

The Mortality of Baltimore.—According to the report of the health department for the week ending September 1st, there were 145 deaths, as compared with 164 the corresponding week of last year, 184 in 1904, and 147 in 1903. The annual death rate in a thousand was: Whole, 13.05; white, 12.06; colored, 18.32. The principal causes of death were:

Typhoid fever	5	Diarrhœa under 2 years of age	21
Membranous croup	1	Bright's disease	8
Influenza	1	Congenital debility	11
Consumption	20	Old age	4
Cancer	8	Suicides	2
Apoplexy	1	Accidents, etc.	9
Organic heart diseases	12		
Pneumonia	6		

The following number of cases of infectious diseases were reported, as compared with the corresponding week of last year:

	1905.	1906.		1905.	1906.
Diphtheria	7	9	Measles	6	2
Pseudomembranous croup		1	Whooping cough	6	4
Scarlet fever	5	5	Chickenpox	1	1
Typhoid fever	142	90	Consumption	20	12

CHICAGO AND THE WEST

The Ohio State Medical Association.—At a meeting of the board of councilors, held at Sandusky, on September 5th, the date for the next (1907) annual meeting was fixed for the last Wednesday in August, at Cedar Point.

An Honor Conferred on Dr. Ferguson, of Chicago.—Dr. Alexander Hugh Ferguson was recently informed by the Portuguese consul at Chicago that King Carlos, of Portugal, had awarded him a commandership in the Order of Christ of Portugal. This is the highest decoration the king of that country can bestow on any person outside of royalty.

Warning Against an Impostor.—We have been requested to publish the following: Members of the profession are warned against the operations of one G. E. Simpson, who is fraudulently taking orders for *Surgery, Gynæcology, and Obstetrics*, published by the Surgical Publishing Company, of Chicago, and under the managing editorship of Dr. Franklin H. Martin. Many doctors have already been victimized by this man, to the extent of paying cash for orders for the journal, or giving him checks payable to his own order; and this notice is published in the interest of the profession and for the purpose of putting a stop to his

further operations. Secretaries of local medical societies are requested to warn the members of their societies against his operations.

Statement of Mortality in Chicago for the Week Ending September 1, 1906, compared with the preceding week and with the corresponding week of 1905. Death rates computed on United States Census Bureau's figures of mid-year population—2,049,185 for 1906, 1,990,750 for 1905:

	Sept. 1, 1906.	Aug. 25, 1906.	Sept. 2, 1905.
Total deaths, all causes	561	589	510
Annual death rate in 1,000	14.26	14.99	13.35
Sexes—			
Males	324	328	269
Females	237	261	241
Ages—			
Under 1 year of age	160	177	138
Between 1 and 5 years of age	51	59	50
Between 5 and 20 years of age	36	47	34
Between 20 and 60 years of age	288	225	207
Over 60 years of age	86	81	81
Important causes of death—			
Apoplexy	5	5	7
Bright's disease	41	31	39
Bronchitis	5	3	5
Consumption	53	58	63
Cancer	32	32	22
Convulsions	8	10	8
Diphtheria	4	5	9
Heart diseases	42	37	37
Intestinal diseases, acute	140	149	130
Nervous diseases	19	17	17
Pneumonia	27	34	22
Scarlet fever	2	4	0
Suicide	7	9	8
Sunstroke	16	14	0
Typhoid fever	11	6	11
Violence (other than suicide)	27	28	32
Whooping cough	3	6	8
All other causes	119	141	92

Statement of Mortality in Chicago for the Week Ending September 8, 1906, compared with the preceding week and with the corresponding week of 1905. Death rates computed on United States Census Bureau's figures of midyear populations—2,049,185 for 1906, 1,990,750 for 1905:

	Sept. 8, 1906.	Sept. 1, 1906.	Sept. 9, 1905.
Total deaths, all causes	515	561	500
Annual death rate in 1,000	13.10	14.26	13.09
Sexes—			
Males	295	324	291
Females	220	237	209
Ages			
Under 1 year of age	127	160	147
Between 1 and 5 years of age	61	51	57
Between 5 and 20 years of age	41	36	42
Between 20 and 60 years of age	203	228	187
Over 60 years of age	83	86	67
Important causes of death—			
Apoplexy	9	5	10
Bright's disease	37	41	38
Bronchitis	6	5	7
Consumption	49	53	44
Cancer	19	32	20
Convulsions	8	8	8
Diphtheria	10	4	8
Heart diseases	39	42	27
Intestinal diseases, acute	113	140	124
Measles	1	..	1
Nervous diseases	15	19	29
Pneumonia	29	27	28
Scarlet fever	7	2	..
Suicide	6	7	11
Sunstroke	1	16	..
Typhoid fever	10	11	5
Violence (other than suicide)	46	27	44
Whooping cough	7	3	7
All other causes	103	119	89

GENERAL.

The Vacancies in the Medical Corps of the Army.—The Medical Department of the Army is experiencing some difficulty in filling the vacancies in the grade of assistant surgeon, says the *Army and Navy Journal* for September 1st, there being at present twenty-one vacancies in that grade. The same number of vacancies also existed at the same time last year. At the recent examinations, which were held to fill these vacancies, forty-seven candidates presented themselves for the examination and twenty-seven took the full examination and came up to the physical requirements. The examination papers have arrived at the War Department and will be gone over by medical officers assigned to this duty. It is expected that it will be several weeks before the results of the examinations are known. The officials here do not believe that all the vacancies will be filled because of the scarcity of young men candidates who are graduates of medical colleges and who come up to the professional requirements.

The Medical Department of the Japanese Army.—*The Journal of the Association of Military Surgeons (Army and Navy Journal)* tells us that the enlisted force of the Japanese Army of the Medical Department consists of: (1) Gun-i-ko-ho-sei (surgeon on probation) (2) Itto Kangocho (first class hospital sergeant), (3) Nito and Santo Kangocho (second and third class hospital sergeant), (4) Kango-sho (hospital corporal), (5) Yaku-zai-shu (compounder), (6) Kango-sotsu (hospital orderly), (7) Mako (instrument repairer), (8) Kango-nin (civil male nurse), (9) Kangofu (female nurse), (10) Tanka Sotsu (stretcher bearer), (11) Hojo-Tanka-Sotsu (assistant stretcher bearer). These men are not recruited direct for the medical service, but from men serving with the colors who are in their second year of service and who pass into the reserve after suitable training. The bearer battalions, etc., are formed from these reserves in case of mobilization for war, but none of them do duty as hospital attendants, their places being taken in peace by "a class of men who are not of sufficient height, age, or physique for military service, but who are not trained as sick nurses; they are not enlisted soldiers, but are simply civil employees of the army." In the time of war they form a large proportion of the attendants in the line of communication hospitals, their places being taken in the base hospitals by the Red Cross nurses.

The Casualties in the Russo-Japanese War.—According to the *Army and Navy Journal* for August 25th, it appears from statistics just published by the Medical Department of the Japanese War Office that there were employed during the war in Manchuria 10.175 medical officers and subordinates, military and civilian, who had the charge of 457,035 sick and wounded, out of whom 74,545 died of wounds or disease. In addition to these numbers tended actually in the theater of war 97,850 were treated in Japan, so that altogether the personnel of the Japanese medical service treated 554 885 sick and wounded men, not including 77 805 Russian prisoners who had become casualties either from sickness or wounds. In Tokio there was held a service in honor of the memory of 60.624 soldiers and sailors who were killed in action or died of wounds, so that if to this number is added the total of 74,545 died of disease, one arrives at a grand total of 135,169 men killed in action or died of wounds or sickness. The Japanese Minister of War has already stated that the thirteen Japanese divisions lost some 58,500 men and officers in action, but puts the total loss of the army at 80,378 only, viz., 2,113 officers, 76 908 noncommissioned officers and men, and 1,357 noncombatants. The losses of the infantry were naturally very much the most heavy, amounting to 64,485, but the transport corps, or train, suffered very heavily in proportion to its strength and probable immunity from risk in actual action, having no fewer than 8,130 casualties—in part accountable, no doubt, by the hard work and inferior physique of the personnel of the military train.

Physicians' Fees for Examination for Life Insurance Companies in the Province of Quebec.—Dr. Albert Laurendeau, secretary of the Medico-Chirurgical Association of the District of Joliette, Province of Quebec, writes to us as follows: A few years ago mostly all the life insurance companies of North America paid to physicians $5 for each examination. Since the recent inquiries into the administration of the companies, which has shown waste and enormous unnecessary expenses, the companies have decided to economize, and have begun by cutting down the physician's fee to $3. There is a strong movement in the province of Quebec against this decision of the insurance companies. About a year ago the medical associations of the district of Joliette adopted unanimously the following resolution: "The physicians of this district will not make any examination for life insurance for less than $5, and for the Mutual Succor Society for not less than $2." And nine medical associations, which cover mostly all the province of Quebec, have adopted like resolutions. These medical associations are: Sherbrooke Medical Society, Wolfe Medical Society, Beauce Medical Society, Portneuf Medical Society, Terrebonne Medical Society, Shefford Medical Society, Chicoutimi Medical Society, Lac St. Jean Medical Society, the Three Rivers Medical Society. The Congress of French Speaking Physicians, held at Three Rivers, on the 26th, 27th, and 28th of June, 1906, considered that question and adopted resolutions to support the movement begun by the other associations. Even more, the board of governors of the College of Physicians and Surgeons of the province of Quebec, took up the question at their assembly of July 4, 1906, and postponed its consideration to September next.

Pith of Current Literature.

BOSTON MEDICAL AND SURGICAL JOURNAL.

September 6, 1906.

1. A Contribution to the Chemistry of the Bacterial Cell and a Study of the Effects of Some of the Split Products on Animals (*Continued*), By VICTOR C. VAUGHAN.
2. The Child and the Public School Curriculum, By THOMAS F. HARRINGTON.
3. Observation Hospitals or Wards for Early Cases of Mental Disturbance, By L. VERNON BRIGGS.
4. Appendicostomy and Cœcostomy for the Relief of Chronic Diarrhœa. Report of Nine Cases, By SAMUEL G. GANT.

3. Observation Hospitals or Wards for Early Cases of Mental Disturbance.—Briggs adds to his former article on an observation hospital for early cases of mental disturbances. Citing such men as Macpherson (Edinburgh), Peterson, Brush, Campbell, Brower, Meyers, Goldwater, Craig, Jones (London), Griesinger (Berlin), Lewis (London), and Clouston (Liverpool), Dr. Briggs is very emphatic in advising the establishing of such wards, and says that it is certainly safe to predict that within five years observation wards will be connected with every large general hospital in our cities, unless the cities provide psychopathic hospitals for the early cases. The trend of opinion is in this direction, and there is a strong undercurrent working which cannot be turned back.

4. Appendicostomy and Cœcostomy for the Relief of Chronic Diarrhœa: Report of Nine Cases.—Gant says that chronic diarrhœa is an affection encountered in all parts of the United States, more frequently, however, in the extreme south than in the north. The varieties of diarrhœa are numerous and its causes are varied. It is generally conceded that diarrhœa, in the vast majority of cases, is caused by pathological conditions situated at some point along the alimentary canal. The opinion seems to prevail that the condition inducing chronic diarrhœa is, in the majority of instances, located in the stomach or small intestines, sometimes in the colon, rarely in the sigmoid flexure or rectum. Perhaps it is true, in most instances, that the original cause of the frequent evacuations is situated in the stomach or small intestine; be this as it may, it is the writer's opinion that in a large percentage of cases chronic diarrhœa is directly traceable to disease in the colon, sigmoid rectum, or at the anus. Of these the most common cause of the diarrhœa is colitis, and the inflamed and ulcerated condition of the mucosa may be the result of a simple inflammation of the membrane, or it may be due to trauma, gonorrhœa, syphilis, tuberculosis, or amœbic dysentery, the latter proving quite common in this country since our recent war with Spain. The object of the author's paper is to give the personal experience of the writer in the treatment of nine cases of persistent ulcerative colitis and chronic diarrhœa by means of appendicostomy or cœcostomy. In eight of these cases the appendix was brought up, attached to the skin and opened in order to permit through and through irrigation. In the remaining case the cæcum was opened and a catheter introduced, after the method of Gibson for the same purpose. The experience of the writer with these operations has been most gratifying, and he has no more hesitation in advising these procedures for the relief of ulcerative colitis than he would of advising appendectomy for the relief of appendicitis.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

September 8, 1906.

1. The Opportunity of the Pædiatrician, By THOMAS MORGAN ROTCH.
2. Postcritical Fever and Other Sequelæ of Croupous Pneumonia, By JAMES E. TALLEY.
3. Incurable Eyestrain, By GEORGE M. GOULD.
4. An Antiseptic Treatment of Tuberculosis, By H. H. MALONE.
5. Nasal Disease and Neuralgia, By LEWIS S. SOMERS.
6. Cerebral Decompression. Palliative Operation in the Treatment of Tumors of the Brain (*To be continued*), By WILLIAM G. SPILLER and CHARLES G. FRAZIER.
7. Femoral Herniotomy, By A. J. OCHSNER.
8. Five Years' Experience with an Original Filigree Intended to Prevent and to Cure Abdominal Hernia, By WILLARD BARTLETT.
9. Heredity and Environment as Factors in the Life and Diseases of Children, By C. F. WAHRER.
10. A Further Contribution to the Study of Stools of Starch Fed Infants, By CHARLES GILMORE KERLEY, WILLIS C. CAMPBELL, and H. N. MASON.
11. The Pathology of Bile, By WILLIAM SALANT.
12. Tuberculosis of an Adenomyoma of the Uterus, with a Pathological Report, By J. L. ARCHAMBOULT and RICHARD M. PEARCE.
13. Ocular Injuries from Foreign Bodies. With Report of Four Hundred and Twenty Cases, By WILLIAM M. SWEET.

2. Postcritical Fever and Other Sequelæ of Croupous Pneumonia.—Talley reviews from a study of 325 cases at the Presbyterian Hospital at Philadelphia the postcritical fever and other sequelæ of croupous pneumonia. The causes, he says, are evidently manifold, and the exact cause can be determined in a given case only by careful and repeated examinations of the patient. The sequelæ consisted of empyema (five cases), abscess of the lung (two cases), endocarditis and pericarditis (four cases), relapsing pneumonia, pleurisy, bronchitis, otitis media and meningitis, parotitis, hæmorrhagic nephritis, thrombosis, and necrotics, colitis and abscess of the chest (each one case), carbuncle (two cases). The number of small abscesses found in the stage of gray hepatization in post mortem examinations would incline one to believe that it is not alone the slow resolution, but perhaps more often a varying degree of this purulent tendency which explains the fever. The value of the Röntgen ray in detecting these conditions in the chest is variable, it is the common experience of a thickened pleura in this class of cases which renders the x ray of less value. Given a previous consolidation without much thickening of the pleura, and the shadow is less uniformly dense than that of fluid in the pleura, so that under such circumstances a lobulated empyema or a full abscess cavity is apt to stand out by its dense shadow in contrast to the less homogenous shadow of the resolving pneumonia consolidation. Under similar circumstances an empty cavity is even more evident, surrounded by its wall.

4. An Antiseptic Treatment of Tuberculosis.—Malone concludes from the general fact that as the human organism can accommodate itself to powerful drugs, such as chloral, cocaine, arsenic, morphine, a like tolerance can be created for certain drugs of less toxic influence, but possessed of bactericidal properties. As the tubercle bacillus is sensitive to even small quantities of antiseptic substances, and as the judicious introduction into the human system of certain antiseptics proved to be destructive to the tubercle bacillus, great quantities may be ingested without apparent injury to the human tissues, but enough to injure, if not to destroy the tubercle bacillus. The most suitable antiseptic or combination of antiseptics would be iodine and phenol. Although the doses which are essential to accomplish the desired results are in conflict with the teachings of recognized authorities, the result obtained demonstrates the value of the deviation from the accepted teachings. The formula which the author has successfully used is as follows: Phenol and tincture of iodine, each 160 minims; spirit of camphor, 3½ drachms; glycerin, C. P., ½ ounce; and equal parts of

cherry laurel water, cinnamon water, chloroform water, and tar water to make 15 ounces. Mix and allow to stand until all free iodine disappears. Then make an emulsion by adding one ounce each of cod liver oil and powdered acacia. Begin by giving one teaspoonful in half a cup of water, every four hours, and gradually increase the dose to a tablespoonful at intervals of one hour.

5. **Nasal Disease and Neuralgia.**—Somers gives six cases which are illustrative of various types of facial neuralgia resulting from disease of the nose and its accessory sinuses. Nasal neuralgia *per se* does not necessarily form a disease of the nose, but may be the result of changes in other regions. Of all the affections involving the nasal chambers independently of sinusitis, hypertrophy of the turbinates, and especially of the middle, is the most frequent cause of neuralgia. The pain of intranasal pressure may be referred to the eye, to the frontal region, or to the nose itself, and occurs with hypertrophy of the posterior part of the inferior turbinate, with synechia or spurs of the sæptum of sufficient size to cause pressure against the opposite tissues. Neuralgia also occurs in acute rhinitis, hay fever, and intumescent rhinitis. The incidence of neuralgia from the maxillary sinus is probably not so common as that from the frontal. In all forms of frontal sinusitis, whether due to congestion of its mucous membrane, accompanying acute rhinitis or resulting from pus retention of chronic empyema, supraorbital neuralgia of the affected side is frequently observed. Empyema of the ethmoid cells is more often productive of headache in occipital and frontal neuralgia. But the least recognized of all these affections are those of the sphenoid sinus, and while empyema here is accompanied with headache more frequently than with neuralgia, yet the latter may occur.

7. **Frontal Herniotomy.**—Ochsner summarizes his method of treatment of femoral hernia in saying that all that is necessary to do is carefully to dissect out the hernial sac quite up into the peritoneal cavity beyond the inner surface of the femoral ring, ligate it high up, cut it off, and permit the stump to withdraw within the peritoneal cavity. Removing all the fat contained in the femoral canal and simply closing the skin wound completes the operation for femoral hernia. This method is applicable to all simple femoral herniæ in which an actual femoral ring exists. The idea of this method occurred to the author through the well known fact that it is practically impossible to keep a circular opening in any part of the body from closing spontaneously unless it be lined with a mucous or serous membrane. But in traumatic hernia or hernia due to a congenital deformity such an opening may not close spontaneously and there can be no indication for using this method. The author has used his method constantly during a period of fourteen years, and is convinced that, barring unusual accidents, recurrences are out of the question.

8. **Five Years' Experience with an Original Filigree Intended to Prevent and to Cure Abdominal Herniæ.**—Bartlett has used various filigrees in twenty-two cases and concludes that a scar, no matter how thin, if prevented from stretching by embedded wire, constitutes a reliable, integral portion of the abdominal well. A ready made filigree answers all possible requirements; hence the construction of one in the wound constitutes an unnecessary prolongation of the operation. Some scars tend to stretch laterally, the filigree need be made up of only cross wires, held together in the middle by one single twisted strand, following the direction of the suture line. The technics of operation is as follows: Dissect away the old skin scar; open the sac widely, reduce its contents, divide adhesions, and excise omentum, where necessary. With the operator's hand inside the sac it is very easy to dissect it away from the components of the wall to which its exterior is attached. The excess of the sac is next trimmed away, and the resulting edges sutured in much the same manner as would be done in closing the healthy perinæum. This and the fascia transversalis is thus to be separated from the posterior surface of the muscles. On the bed thus formed by fascia, a filigree, slightly longer than the opening, is placed and held in position by two sutures at its extremities. The edges of the network should be covered for a short distance, over this, fat and skin are closed in ordinary manner, and a binder is worn for two or three weeks after the patient has left his bed, in which he is to be kept two to three weeks.

12. **Tuberculosis of an Adenomyoma of the Uterus.**—Archambault and Pearce report a case which is of interest not merely on account of the rarity of the condition, but also because of the absence of tuberculosis in the mucosa of the general uterine cavity with but a slight lesion in one tube. The tuberculosis of the myoma and that of the tube were secondary to tuberculosis of the lung, but apparently independent of one another and due to infection through the blood stream.

13. **Ocular Injuries from Foreign Bodies.**—Sweet adds 310 cases of ocular injury from foreign bodies to his report of 1901 of 102 cases, making a total of 420 cases, no bodies shown by the Röntgen rays in 182. In the 221 cases in which the foreign body was located in the eyeball, extraction was successful in 164 cases, with subsequent enucleation of thirty-four eyes; while extraction failed in eighteen cases with enucleation in ten; no attempt to remove the body was made in thirty-nine cases, with enucleation in nineteen. Dr. Sweet concludes that radiographic examination should be made in every case of ocular injury from a foreign body, in which lowered visual acuity is a result of the accident. Extraction of a foreign body through a small meridional incision in the sclera, the magnet point not introduced into the vitreous, causes no greater traumatism than follows drawing the metal through the vitreous into the anterior chamber. Retinal detachment is not a logical result of a scleral incision for the extraction of a body from the vitreous chamber. The exudation associated with a long retained foreign body is probably a more frequent cause of detachment. Introduction of the magnet point into the vitreous increases the traumatism to the eyeball, encourages retinal detachment, and often leads to shrinking of the eyeball, and to iridocylitis. Bodies located above the horizontal plane of the globe or at the posterior part of the vitreous chamber usually present greater difficulties in extraction, owing to the early formation of a fibrous exudate around the imbedded metal, than bodies at the bottom of the vitreous near the equator, to which position they fall after penetration.

MEDICAL RECORD.

September 8, 1906.

1. The Mysteries and Sources of Suicide, By George M. Gould.
2. Shock, By Lucy Waite.
3. Pleurisy with Effusion and Pulmonary Tuberculosis, with Cases Observed at the Hartford Hospital, By Henry Farnum Stoll.
4. Acute Mastoiditis, Its Prevention, Diagnosis, and Treatment, By John J. Thomson.
5. Hay Fever and Persistent Bronchial Asthma Relieved by Treatment Directed to the Antrum of Highmore, By Jacob E. Schadle.
6. A Possible Danger in the Therapeutical Use of Osmic Acid, By Arthur E. Hertzler.

2. **Shock.**—Waite says that it must be admitted that the pathology of shock after all remains very indefinite and unsatisfactory, the x, as Dr. Senn has called it in the surgical formula. It is therefore very difficult to give a comprehensive definition of this *ignis fatuus* in the domain of pathology. Based in reality more on the phenomena than upon the pathology, according to our

present light we must consider it as primarily a disturbance of the great sympathetic nervous system affecting secondarily the entire vascular system, a more or less profound impression on the sympathetic nerve producing a vasomotor paresis with the consequent dilatation of the right side of the heart and the large vessels, especially the abdominal ones, and in consequence lowering the general blood pressure and deranging through the solar plexus all the automatic visceral ganglia, and consequently destroying their functional activity, rhythm, absorption, and secretion. The phenomena of shock manifest themselves through the tripod of vital forces, the nervous, circulatory, and respiratory systems, and principally in those organs most highly supplied by the sympathetic system. The intensity of physical shock is influenced by four principal considerations; the extent of the injury, that is, the number of nerve peripheries involved, the nearness of the traumatism to the solar plexus; the character of the injury, the more crushing or bruising of the nerves the greater being the nervous impression; and the severity of the pain produced. It is therefore from the standpoint of intensity rather than by means of a scientific classification that we must study the phenomenon of shock. The diagnosis of shock is simply the recognition of the clinical phenomena, as here we have no chemical or pathological findings to aid us. The clinical manifestations of this nerve storm are, however, so pronounced that practically the only difficulty lies in differentiating this condition from syncope caused by severe hæmorrhage with which there is danger of confounding it. The many and diverse theories regarding the treatment of shock show conclusively the chaotic state of the professional mind regarding this condition. One writer is so confused in his interpretation of the phenomena that he advised at the same time morphine, strychnine, digitalis, nitroglycerin, whiskey, and citrate of caffeine. No one has done more to bring order out of this chaos than Dr. George C. Crile, of Cleveland, by his experiments on dogs. He has practically demonstrated not only the uselessness, but the harmfulness of strychnine in shock, and that the rational treatment lies in raising the blood pressure. He lays down the principle that the treatment must be sedative to the sympathetic system and relaxing to the arterioles. To this end he advises compression of the abdomen and extremities to prevent the accumulation of blood in the large veins, with the administration of adrenalin given with salt solution. Dr. Halstead advises morphine, also normal salt solution. It is interesting to note that Morris, as early as 1868, advised opium, ½ grain every two hours. If rest and heat, preferably moist, are added to these remedial agents, we have certainly fulfilled the requirements for treatment in accordance with all that is known of the pathology of shock, to quiet the nervous system and relax the arterioles. The preventive treatment of shock lies almost entirely in the domain of surgery. There is no doubt that much can be done by the proper preparation of the patient before coming to the operating table to prevent subsequent shock, and the practice of some surgeons, of rushing nonemergency cases under the knife without any preparatory treatment, cannot be too strongly condemned.

3. **Pleurisy with Effusion and Pulmonary Tuberculosis, with Cases Observed at the Hartford Hospital.**—Stoll remarks that all who have studied the histories of tuberculous patients realize that there is an intimate relationship between pleurisy and tuberculosis of the lungs. To explain this we may consider: (1) That their association is purely coincidental; (2) that the pleuritis paves the way for subsequent tuberculous infection by creating a point of lowered resistance; (3) we may assume that the pleurisy is caused by the tubercle bacillus, and this third proposition has the greatest number of supporters. The author divides his cases into four classes: 1. Cases known to be tuberculous. 2. Idiopathic. 3. Mechanical—Transudates occurring with kidney and heart disease. 4. Acute infections. From a study of these cases we must conclude that all effusions within the pleural cavity are to be considered gravely, as a large majority of them are of tuberculous origin. We must realize that though a positive history is of the utmost importance, a negative one is absolutely valueless in excluding tuberculosis, and that pleurisies due to cold and rheumatism are legends which have come down from ancient medicine. In the complete examination of effusions we have a means of diagnosis, not infallible of course, yet one in which we can place considerable confidence. It is a method well adapted to the needs of the busy practitioner, as neither guinea pig nor a thermostat is required. Noting the amount of fibrin, determining the specific gravity, and estimating the percentage of albumin by boiling with acetic acid, take but a few minutes. The fluid is then centrifuged for five minutes and the sediment removed by means of a glass pipette to a slide, dried by heating very gently and stained with Wright, Jenner, or gentian violet. The cells are usually numerous, so it takes but a short time to make the count. The fluid should be examined at once, as the cells degenerate quite quickly on standing. Gentian violet may be dropped on the sediment before it dries and a wet mount be made. With proper facilities the clot should be digested, as suggested by Jousset, and the centrifuged product examined for tubercle bacilli.

4. **Acute Mastoiditis, Its Prevention, Diagnosis, and Treatment.**—Thomson, after speaking of the prevention, diagnosis, and treatment of acute mastoiditis, describes the after treatment in operated cases as follows: It requires a great deal of care and patience, and in the most favorable cases healing requires at least six weeks. It is our aim to force the wound to granulate from the bottom. Occasionally the granulations form more rapidly toward the surface than they do in the antrum region. When this happens it is essential to destroy them, either by cutting them with a scissors, or by a caustic of some kind. Orthochlorophenol is very useful for this purpose. If the condition be observed early enough firm packing at the margin, with gentle packing in the deeper parts will control the excessive granulation. It may be necessary to stimulate the granulation with balsam of Peru, or by rubbing them with a cotton wound applicator. Another important thing is to prevent the skin from dipping into the wound, because its lowest point necessarily marks the level to which the granulations will grow. In packing the wound it is advisable not to let the gauze slide over the skin margin because the inward growth of the epithelial cells is thus aided. At each dressing the skin should be gently pressed back. Frequently a fringe of granulations will form all around the margin of the wound, offering an insurmountable barrier to the epithelial cells. This should be left until the central granulations are sufficiently high and then cut away. The epithelium will usually rapidly spread from all directions when this is done. The middle ear should be drained by a piece of gauze inserted into the canal and changed at each dressing. If the wound shows a tendency to become sloughy a few moist dressings of corrosive sublimate usually cleans it nicely. The wound does best when dressed about every other day.

5. **Hay Fever and Persistent Bronchial Asthma Relieved by Treatment Directed to the Antrum of Highmore.**—Schadle treated a patient with hay fever asthma as follows: Both antral cavities were irrigated with a warm boric acid solution until the return fluid was clear and perfectly free from sediment. The hypersecretion of the cavities was marked, and it required considerable irrigation to clear them. The sinuses were then freely insufflated with thymol iodide. The same treatment was given for five successive days, and

since the third day of treatment all the symptoms have disappeared. Other treatments were not required, nor was the environment of the patient changed.

LYON MEDICAL.

August 26, 1906.

1. Tuberculous Meningitis, By RABOT and BARLATIER.
2. Spinal Meninigitis in Chronic Rheumatism, By JEAN LEPINE.

1. **Tuberculous Meningitis.**—Rabot and Barlatier report a case in which a child, eight months old, suffered from tuberculous meningitis and from a large tuberculous cavity in the lung. Both of the conditions are of rare occurrence in a child of that age, but were confirmed by autopsy.

2. **Spinal Meningitis in Chronic Rheumatism.**—Lepine concludes from a study of this subject that chronic rheumatism in a man predisposed to this disease, who does not avoid the serious dangers of his diathesis by regular physical exercise, may manifest itself in the form of lumbar meningitis, localized by predilection about the posterior roots. This meningitis may be maintained by the aggravating causes of the general dyscrasia, a sedentary life, meat diet, and alcoholism. The condition is one which is curable.

LA PRESSE MEDICALE.

August 8, 1906.

1. Treatment of Severe Bronchopneumonia by a Fixation Abscess. By P. DAIREAUX.
2. Radioscopy of the Stomach. The Stomach of the Infant. Form, Lower Limit, Manner of Filling, and Evacuation. By G. LEVEN and G. BARRET.
3. Spoons and Spoons, By ALFRED MARTINET.

1. **Treatment of Bronchopneumonia by a Fixation Abscess.**—Daireaux reports five cases of very severe bronchopneumonia in which he employed injections of turpentine to obtain a fixation abscess. He finds that this treatment does not cure the bronchopneumonia, nor sensibly modify its course, but it does lessen the immediate gravity and the danger of death from asphyxia, intoxication, or heart failure, and thus aids the organism to recover from the disease.

2. **Stomach of the Infant.**—Leven and Barret describe the stomach of the infant as quite different from that of the adult in several particulars. Its position is transverse with its greater curvature practically horizontal and forming its lower border, while that of the adult is rather vertical with its greater curvature forming its left border. The lower limit of the infant's stomach is formed by a portion of its greater curvature, that of the adult by the region of the pylorus. The stomach of the adult adapts itself normally to the dimensions and volume of its contents, while the condition of that of the infant rather resembles that characteristic of dilatation in the adult. The contractions made by the stomach to evacuate its contents into the pylorus in the infant are of different characters from those which take place in the adult. The time required by the stomach of the infant to dispose of from 80 to 175 c.c. of milk varies from one and three quarters to two hours.

3. **Spoons and Spoons.**—Martinet works out mathematically the variance in the doses of medicine when carefully given measured in spoons supposed to hold the same quantities. He really presents in mathematical form the well known inaccuracy of the method of dosage by spoonfuls and protests against its inaccuracy.

August 22, 1906.

1. Lessons Produced by Experimental Tobacco Poisoning. By A. GOUGET.
2. Economical Alimentation of Convalescents. By H. BUSQUET.
3. Treatment of Cholera, By ALFRED THEBAUD.
4. Tetany as an Intoxication Produced by the Salts of Lime, By R. ROMME.

1. **Experimental Tobacco Poisoning.**—Gouget conducted experiments on rabbits by introducing into their stomachs 10 to 75 c.c. of a ten per cent. infusion of tobacco, and by intravenous injections of from one half to one c.cm. of the same infusion. The animals experimented on lived from one week to six and a half months. The rabbit on whom the experiment was most prolonged received a total of 4,650 c.c. of the infusion in its stomach, and 22 c.c. in its veins. The stomachs of the rabbits bore the infusion well, while the injections caused convulsive seizures. The histological lesions found consisted of serious degenerations in the walls of the circulatory system.

2. **Economical Alimentation of Convalescents.**—Busquet claims that a convalescent can obtain from a very coarse food rich in fatty material an efficacious and inexpensive means for supraalimentation.

August 25, 1906.

1. Use of Potassium Bromide in Epilepsy, By JULES VOISIN and ROGER VOISIN.
2. The Microbic Flora of the Ulcer of Hot Countries, By BOUCHER.
3. Major and Minor Signs of the Acute Condition Produced by Overexertion, By MAURICE CHAMPEAUX.

1. **Bromides in Epilepsy.**—Voisin and Voisin assert that while the use of the bromides, particularly that of potassium bromide, should enter into the treatment of all epileptics in the present state of therapeutics, its administration should be under a much closer surveillance than is the custom to-day. The physician should avoid on the one hand intoxication, on the other habituation. Evacuant, purgative, and diuretic medication, the administration of the drug in progressive doses, the temporary institution of a dechloridating régime, may each or all be of assistance, according to the individual cases.

2. **Microbic Flora of the Ulcer of Hot Countries.**—Boucher describes the bacillus rabesus found in the exudate, the bacillus flotsy and the bacillus Razaki, both of the vesicopustule.

3. **Overexertion.**—Champeaux defines the condition produced by overexertion as the result of the overthrow of the balance between the cellular acts of nutritive elaboration and of functional production. Its minor signs are premonitory, and consist of toxic resorption which produces a rise of the temperature, drowsiness, great thirst, and anorexia. Its major signs present numerous clinical forms which the author says may be classed as asphyxial, typhoid, etc.

LA SEMAINE MEDICALE.

August 20, 1906.

Splenomegalic Polycythæmia, By L. CHEINISSE.

BERLINER KLINISCHE WOCHENSCHRIFT.

August 13, 1906.

1. Polyarthritis Chronica Deformans. By H. CURSCHMANN.
2. A Solitary Echinnococcus of the Left Lung Spontaeously Cured by Coughing, By WADSACK.
3. Further Researches Regarding the Changes Produced in the Blood Vessels and Other Organs by the Suprarenal Extract, By L. D'AMATO.
4. Meat Poisoning and Paratyphus. By H. TRAUTMANN.
5. Determination of Sugar in the Urine, By S. ROSENBERG.
6. General Narcosis, By B. BOSSE.

1. **Polyarthritis Chronica Deformans.**—Curschmann gives an excellent description of this well known disease, which is made particularly valuable by the reproduced photographs and radiographs with which the article is illustrated.

4. **Meat Poisoning and Paratyphus.**—Trautmann claims that the cause of meat poisoning in man is almost always the flesh of an animal which has been suffering from a primary disease that has undergone a certain incubation. The disease in man is thus in this typical form secondary, but in paratyphus it is primary.

5. **Sugar in the Urine.**—Rosenberg criticises the usual methods of examination of the urine for sugar and recommends Lohnstein's apparatus as the best, surest, and simplest. Yet, he says, some doubt has been cast on the absolute power of fermentation to demonstrate the presence of sugar by an observation of Pflüger in which yeast caused the development of a large quantity of carbonic acid in the urine which contained neither sugar nor any other carbohydrate.

6. **General Narcosis.**—Bosse says that the practical points to be gathered from the numerous articles which have recently appeared on this subject are that when possible the patient should undergo a careful preparation for several days before taking the anæsthetic; that the narcosis should take place preferably in the morning in a quiet, well aired room, while the patient is lying in a horizontal position and warmly covered; and that after the operation the patient should be placed with head depressed in a well warmed bed in a well ventilated room. Small doses of morphine and atropine are frequently indicated. Under the heading of the narcosis itself considerable space is given to the various methods of administration.

August 20, 1906.

1. Syphiloma of the Internal Organs of New Born Infants and Their Relations to the Spirochæta Pallida, By V. BABES and TH. MIRONESCU.
2. Statistics and Pathogenesis of Quinquaud's Phenomenon, By E. LAUSCHNER.
3. Formation of Metastases from Transplanted Sarcomas in the Mouse, By M. HAALAND.
4. Cases of Enteroptosis and Cardioptosis With Return to Normal, By M. EINHORN.
5. Statistical Valuation of the Antistreptococcus Serum in the Treatment of Puerperal Fever, By BUSALLA.
6. Further Researches Regarding the Changes Produced in the Blood Vessels and Other Organs by the Suprarenal Extract (*Concluded*), By L. D'AMATO.

1. **Lesions of Congenital Syphilis and Their Relations to the Spirochæta Pallida.**—Babes and Mironescu distinguish three forms of changes due to congenital syphilis. A diffuse form which affects either all the organs, or only a few; a tumor like form in which circumscribed nodules appear in one or more organs; and a mixed form in which both of these changes may be found. They demonstrated the presence of the spirochæta pallida in association with these lesions.

6. **Changes Produced by the Extract of the Suprarenal Capsule.**—D'Amato's conclusions are: 1. When rabbits are given paraganglin by way of the stomach for a long time and in large doses the same necrotic, calcific foci, are produced in the aorta which are produced by the intravenous injection of the extract of suprarenal capsule. 2. Paraganglin in doses of ten drops does not increase the arterial tension, so it is to be assumed that the injuries to the aorta are not the result of arterial hypertension. 3. The extract of suprarenal capsule given for a long time and in large doses either by the stomach or by intravenous injection does not confine its injurious action to the aorta, but affects places elsewhere in the circulatory system and in the tissues. 4. The changes in the aorta are indisputably far more pronounced than those produced elsewhere in the circulatory system and in other organs.

GAZZETTA DEGLI OSPEDALI E DELLE CLINICHE.

August 5, 1906.

1. The Influence of the Grippe upon Various Infections, By SPIRO LIVIERATO.
2. Two Cases of Traumatic Neuroses, By ANDREA CONTI.
3. Contribution to the Symptomatology of Gastric Cancer, By G. FRATTI.
4. Barlow's Disease, By ARISTIDE MURATORI.
5. Tuberculosis of the Mammary Gland, By E. DELFINO.
6. Thyreoid Treatment in Basedow's Disease, By G. BAGLIONI.

1. **Action of Influenza Toxines towards Other Infections.**—Livierato's experiments lead him to conclude that the toxines of the influenza bacillus accumulating in the system favor the development of other infections. This gives rise to mixed infections which are so often seen in the sequels of influenza. The toxines of influenza injected into animals simultaneously with germs which are but slightly pathogenetic, for these animals materially increase the virulence of these germs.

3. **Symptomatology of Gastric Cancer.**—Fratti reports three atypical cases of gastric cancer, pointing out the very variable symptomatology of this disease. In the first case there was at autopsy a perforating cancerous ulceration of the pyloric end, and yet the patient had not suffered any gastric distress, not even a loss of appetite. No pain had been felt. Vomiting of blood was noted only shortly before death after an indiscretion in diet, and the blood was bright red. No tumor was felt, but a slight pain over the pylorus. Death took place from perforative peritonitis, a rare termination for gastric cancer. This case clinically may be classed as one of cancerous ulcer. The second case presented attacks of gastric pain, dyspeptic symptoms, and vomiting without any blood. No tumor was present and the patient was not even cachectic. The patient died of perforative peritonitis, and at autopsy an ulcerated hard and flat tumor was found near the pylorus. In the third case there was no pain, not even a sense of weight in the stomach, yet there were frequent hæmatemeses. At autopsy an infiltration of the greater curvature and a cancerous stenosis of the pylorus were found.

6. **Thyreoid Extract in Exophthalmic Goitre.**—Baglioni reports two cases of Basedow's disease which were benefited by thyreoid treatment. This is contrary to the usually accepted theory that in this disease there is a hypersecretion of thyreoid material, and that, therefore, thyreoid extract is contraindicated. The author cites the various theories advanced for the origin of Basedow's disease, but draws no conclusion from his cases.

August 12, 1906.

1. More Data on the Action of Radium in Rabies, By G. TIZZONI and A. BONGIOVANNI.
2. Methods of Quantitative Analysis for Hydrochloric Acid in the Gastric Juice, By M. LANDOLFI.
3. The Calcium Contained in the Central Nervous System in Relation to Eclampsia, Tetany, and their Equivalents, By T. SYLVESTRI.
4. The Influence of the Temperature of the Room and of Cold Baths on the Production of Agglutinating Substances in Animals Immunized against Typhoid Fever, By ALBERTO GRAZIANI.

1. **Action of Radium on Rabies.**—Tizzoni and Bongiovanni continue their series of reports upon the therapeutical action of radium on rabies. They say that the cause of the failures of others to obtain as good results as they did with radium was that the other observers used exclusively sealed tubes of radium from which only "radiations," but no "emanations" of this element issued. Radiations of radium are, they admit, negative towards rabies virus; on the other hand, "emanations" are possessed of a high degree of destructive power towards rabies virus. Radium, in order to secure emanations, must be placed in ordinary boxes with mica screens, not in sealed tubes. The authors succeeded in using radium cylinders containing 500,000 units without producing any untoward effects in rabid animals. They propose now to test the treatment in man.

2. **Quantity of Hydrochloric Acid in the Stomach.** Landolfi recommends the method of Petteruti as the best mode of determining the amount of hydrochloric acid in the stomach. It depends on the principle that when a solution of hydrochloric acid is added to a solution of proteïds, and Congo paper is used to test the reaction, the acid reaction will show at the moment

when the proteid solution has become saturated with the hydrochloric acid. The same proteid solution has a constant capacity for taking up hydrochloric acid. If then we pour into the stomach a known amount of proteid in solution we can know the amount of hydrochloric acid secreted within an hour by subtracting the number of c.c. known to be needed to saturate this proteid solution from the number of c.c. of hydrochloric acid needed to saturate a certain amount of the gastric contents. Petteruti's formula is $x = \frac{N - n}{10}$, in which x represents the quantity of hydrochloric acid (in c.c.) secreted in an hour after the test meal of 300 c.c. of broth, N, the number of c.c. of the 2 per thousand solution of hydrochloric acid known to be needed to saturate 5 c.c. of the proteid solution administered, while n indicates the number of c.c. of the same solution of hydrochloric acid needed to saturate the same amount (5 c.c.) of the gastric contents after one hour.

ROUSSKY VRATCH

July 15, 1906.

1. On Lisle's Antisyphilitic Serum, By V. N. Klimenko.
2. On Marmorck's Antituberculous Serum, By A. Feldt.
3. Some Changes in the Blood of Patients with Cancer of the Stomach (Digestive Leucocytosis), By G. I. Baradouline.
4. Deviations of the Nasal Septum, and Its Significance for the Organism. Their Operative Treatment, By A. V. Flatovieroff.
5. Changes in the Amount of Oxygen Dissolved in the Blood in Ozonization, By K. E. Dobrovolsky.

3. Leucocytosis in Cancer of the Stomach.—Baradouline says that the presence of diagnostic leucocytosis is of great value in differentiating cancer from ulcer of the stomach. Digestive leucocytosis is always present in round ulcer of the stomach, as Schneyer has shown. In cancer digestive leucocytosis is present, though not constantly. Thus, of ten cases studied by Baradouline, two showed digestive leucocytosis, seven no leucocytosis, while in one case there was even a diminution of leucocytes in the blood during digestion.

July 22, 1906.

1. An Attempt to Classify the Therapeutical Measures Used in the Treatment of Internal Diseases, By Th. G. Janovski.
2. A Case of Inflamed and Suppurating Pseudomyxomatous Cyst in the Puerperal Period, and Its Sequels, By V. N. Orloff.
3. On the Bacteriology of Retropharyngeal Abscesses, By A. A. Opokine.
4. Cerebral Tumor Occupying the Pulvinar of the Optic Thalamus, the Left Anterior Prominence of the Corpora Quadrigemina, Part of the Internal Capsule, and the Lenticular Nucleus, By P. M. Avtokratoff.
5. The Fundamental Problem in the Surgical Treatment of Genitourinary Diseases, By N. A. Mikhailoff.
6. An Appliance for Fastening Le Fort's Bougies, By E. S. Levy.

3. Bacteria in Retropharyngeal Abscesses.—Opokine reports a case of retropharyngeal abscess in which he found a special diplostreptococcus. Four cases have been reported by Menschikoff, in which a diplostreptococcus was present. As yet the cases on record are too few in number to allow of a conclusion as to whether the organism is specific for retropharyngeal abscesses. The present case was observed in an elderly woman, and the abscess was chronic, having lasted three months, yet no tubercle bacilli were found in it. The diplostreptococcus occurs in long chains, the links of which are composed of diplococci. It is not stained by Gram's method, and gives typical colonies on hæmoglobin agar. On plates it grows in the form of dark brown colonies of the size of a pin head. It is but slightly virulent in animals, but sometimes produces suppuration.

6. Appliance for the Retention of Le Fort's Bougies.—Levy found that the usual method of fastening a small Le Fort bougie permanently in the urethra with adhesive plaster is unsatisfactory. It is often important to retain these bougies in a stricture which we have penetrated with considerable difficulty. For this purpose he suggests an appliance, consisting of a T shaped piece of metal and hard rubber. The vertical arm is screwed into the wide end of Le Fort's bougie, which is a conical, olive tipped fine calibred bougie. The horizontal arm is provided with openings through which are passed silk ligatures, which can be fastened to the patient's body by means of adhesive plaster.

July 29, 1906.

1. Foreign Bodies in the Peritoneal Cavity and their Relation to the Peritonæum, By V. S. Grouzdieff.
2. Radical Operation for Umbilical Hernia, By R. R. Vreden.
3. On the Operative Treatment of Multiple Papillomas of the Larynx in Infants. A Case of Laryngofissure, By Th. L. Kobylinski.
4. A Review of the Mastoid Operations Performed during 1904-1905, By P. K. Broshniovski.

1. Foreign Bodies in the Peritonæum.—Grousdieff deals especially with instruments, sponges, etc., left in the cavity by surgeons after laparotomy. He reports the case of an old woman who had retained a long Terrier's compression forceps (twenty-two cm. long) in her peritoneal cavity for seven years. She complained of pains in the abdomen and noted a projecting point of some sort at the lower part of the abdominal wall. The forceps could be felt in Douglas's space by rectal examination, and it was removed through a posterior vaginal incision. The patient made a good recovery. To avoid leaving instruments, etc., in the abdomen, the author is in the habit of washing the entire abdominal cavity with a copious amount of physiological salt solution and moving his hand freely about in the cavity as the fluid enters the abdomen. Thus he is able to feel any foreign body that is left. He has had excellent results with this method in over four hundred cases of laparotomy.

3. Laryngofissure for the Removal of Multiple Papillomas of the Larynx in a Child.—Kobylinski reports a case of multiple papillomas in the larynx of a boy, aged four years, in which he was compelled to split open the larynx in order to remove the offending tissue. The chief symptom was hoarseness, and the diagnosis was made with the laryngoscope. Attempts were made to remove bits of the growth with snares, etc., under cocaine, but the growth increased in size so fast that operation was decided on. Tracheotomy was performed and a wad of cotton saturated with chloroform placed in the tube (in all twenty grammes were used). The cricoid and thyreoid cartilages were slit open just in line with the angle by introducing a blunt pointed knife into the upper angle of the tracheotomy wound, from within outward. The papilloma was removed with scissors and its base cauterized with the electrocautery. The patient made a good recovery, although he had to wear his tracheotomy tube for some time.

4. Mastoid Operations.—Broshniovski's service at the Nicholas Military Hospital includes about 200 patients daily in the ear department. There were 2,177 ear patients in the wards there during the year. Of these ninety were operated upon for mastoid disease in 1904 and 1905. The mortality was 12.2 per cent.

THE AMERICAN JOURNAL OF OBSTETRICS.

September, 1906.

1. The Construction of a New Vagina (*To be concluded*), By Abram Brothers.
2. Artificial Renal Colic as a Valuable Means of Diagnosis, By Henry T. Hutchins.
3. Some Common Varieties of Obstructed Labor, with Clinical Illustrations, By Stanley P. Warren.
4. A Case of Cyclocephalus in Guam. By N. T. McLean.
5. The Fetich of the Ovary, By Ely Van de Warker.

6. Bladder Affections in Gynæcological Cases, By H. GRAD.
7. Excision of a V Shaped Piece of the Posterior Uterine Wall for Anteflexion of the Cervix, with the Aid of an Intrauterine Holder, By R. C. COFFEY.
8. Intussusception, By G. BROWN MILLER.
9. Large Gelatinous Tumor of the Ovary, By A. LAPTHORN SMITH.

1. **The Construction of a New Vagina** (*To be concluded*).—Brothers says that defects in the patency of the vaginal canal are not excessively rare. He has collected the literature on the subject and gives a detailed review. The operations which have been done for imperforate or absent vagina he classifies as follows: I. Per vaginum and extraperitoneal; a, methods of blunt dissection, leaving a raw surface; b, methods by which a raw surface is covered with pediculated flaps; c, methods by which a raw surface is covered with transplanted skin or mucous membrane. II. Per vaginum, combined with vaginal celiotomy. III. Per vaginum, combined with, preceded by, or followed by abdominal section. IV. Per vaginum, utilizing the rectum or sigmoid flexure. V. Abdominal section. Brothers had occasion to observe a patient operated upon by Isaacs and to perform an operation himself upon a woman, twenty-one years old, who (both operations coming under I, c) had been married at the age of nineteen, never having menstruated. Her husband had deserted her after eighteen months' marital experience. The inspection of the vulva showed a small clitoris, urethra, and well developed labia majora, nymphæ, and fourchette. The hymen was not found, and the vagina was represented by a quasi mucous membrane diaphragm, which could be depressed to a distance of a little more than an inch. Uterus, tubes, or ovaries could not be discovered. The operation the author describes as follows: Beginning just below the meatus urethræ, the incision was carried in a circular manner across the labium minus, down to the perinæum and upwards on the opposite side to the starting point. This circle of quasi mucous membrane was dissected away in part at its circumference and presented the firmest attachment to the urethra and bladder, with lesser adhesions to the lateral regions and rectum. With Sims' glass dilator (1½ x 4 inches) the diaphragm was firmly pressed against, so that, by dint of snipping in the surrounding connective tissue and considerable pressure against the dilator, the saucer of mucosa was pushed upwards to the full length of the dilator, leaving a cylindrical gap of raw tissue below it. Whilst the dilator was kept under tension and pressed firmly against the vaginal vault, an assistant secured Thiersch skin grafts from the inner side of the patient's thigh, which were placed over the raw surface by tilting the dilator in different directions. At the completion of the operation the dilator was surrounded at its vulvar end with gauze and retained in position under tension by means of long strips of adhesive plaster, secured to the buttock and abdomen to prevent the disarrangement of the grafts. She was kept in the hospital for a month, the vaginal canal was kept patent by means of a glass dilator which measured 1⅛ x 4 inches. This was kept in place by a stem perforating a cork closing up the open end of the glass dilator. Through the stem two rubber tubes passed anteroposteriorly and were secured to an abdominal belt. This the patient wore with perfect comfort continually day and night, even after she left the hospital. A second operation was performed which completed the vaginal canal. A glass cylinder one-half inch in diameter and three inches in length, covered with iodoform bandage and a thin rubber pouch, was covered with grafts of thin skin, secured from the left thigh, and placed with the raw surface exposed and secured by means of fine catgut. This plug was inserted into the canal with the raw surfaces of the grafts in intimate juxtaposition with the raw vaginal wall. The operation was a success. After leaving the hospital the patient wore the glass speculum for a period of two months, and then discarded it. Since then she had been living with her husband, whom she described as of large build sexually. Intercourse had been maintained several times weekly to the complete satisfaction of both parties. The literature for group II, III, IV and V is given, to be concluded in the next issue.

2. **Artificial Renal Colic as a Valuable Means of Diagnosis.**—Hutchins had a series of one hundred cases which he divided into four groups: 1. Normal kidney pain produced, not the same pain of which the patient complained. Disease of the kidney ruled out. 2. Kidney pain reproduced, same pain as that of which the patient complained. Diagnosis of renal or ureteral disease confirmed. 3. Dilated pelvis of kidney, stricture of ureter. 4. Doubtful cases and failures. The method of producing an artificial distention of the pelvis of the kidney in order to reproduce or to rule out certain symptoms which may be referable to disease of this organ is described by the author. A thorough history of any renal, ureteral, or bladder trouble is taken and a careful urinary analysis made. These preliminary examinations having been made, the patient is prepared for a cystoscopic examination. The patient is told that an examination is to be made of the bladder, but is not forewarned that her original pain may be reproduced during the examination. With the patient in the knee breast posture, a suitable Kelly cystoscope is introduced into the bladder and the ureter of the side affected is catheterized. The catheter is inserted slowly and carefully. The eye of the catheter should reach the kidney pelvis. As soon as the catheter has been placed, the cystoscope is removed from the bladder and the patient is allowed to assume a comfortable position on her side or back. A small glass catheter is inserted into the bladder to remove the air and is left in position to act as a control should any fluid from the injection escape around the renal catheter and return to the bladder. The solution may be any bland fluid colored by a few drops of an aqueous solution of methylene blue, and is carefully forced into the pelvis of the kidney until the patient begins to feel pain. When the pain becomes definite, the fluid is released, giving instant relief. The pain produced is of such a definite character that the patient will say whether this is or is not the same pain of which she complains. The author comes to the conclusion that the ability to reproduce, mechanically or otherwise, the pain of which a patient complains is always a most valuable aid in diagnosis. A definite and typical "kidney pain" (renal colic) can be produced in every instance by forcibly distending the pelvis of the kidney with a bland fluid. In a large majority of cases patients are able to accurately differentiate renal pain caused by the method of injection, from pains from other causes. By this method a diagnosis can frequently be made in a class of cases, as yet undifferentiated by the medical profession, whose symptoms are vague and indefinite. Accurate measurements of the amount of dilatation of the pelvis of the kidney may be made with the instrument used, and by this means valuable data are obtained.

5. **The Fetich of the Ovary.**—Warker remarks that undue importance is given to so called inflammation of the ovaries which, notwithstanding their widely diffused physical and psychical influence, do not have the paramount reflex power generally accredited to them. Inflammation of the ovarian stroma is an extremely rare disease attended with but little pain and quickly recovered from without sequelæ. Any pain in the lower abdominal zone is generally explained by general practitioners and even by gynæcologists as due to inflammation of the ovaries, and women have been induced, by the insistent picture of alleged ovarian

disease, to give undue importance to these organs. But the position of the ovaries in the pelvis is a minor matter and unattended by either functional or sensory symptoms; these are due to other pelvic conditions. Palpation of the ovaries, when in a normal position, is a difficult technics, accomplished with certainty only in thin subjects with lax abdomens.

7. Excision of a V Shaped Piece of the Posterior Uterine Wall for Anteflexion of the Cervix, with the Aid of an Intrauterine Holder.—Coffey's cat claw tenaculum consists of a central rod with hinged fangs which can be released through the eyes of the tube by pressure on the spring of the ratchet. The operation is performed in the following manner: First, pull down the cervix and uterus with bullet forceps or double tenaculum. Second, insert the cat claw tenaculum, protrude the fangs, and pull the uterus down as far as possible. Third, incise the vaginal mucous membrane at the back of the cervix, and dissect up the peritonæum on the posterior surface of the uterus far enough to excise the wedge. Fourth, close the V shaped incision with strong three weeks' catgut sutures.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

August 1, 1906.

1. Vascular Tension in Chronic Illness, By H. A. Hare.
2. The Therapeutical Use of Tuberculin Combined With Sanitarium Treatment of Tuberculosis, By E. L. Trudeau.
3. Review of the Work Upon the Opsonic Index (Wright and Douglas) in Tuberculosis, By N. B. Potter, N. E. Ditman, and E. B. Bradley.
4. The Technics of the Tuberculoopsonic Test, By H. M. Kinghorn and D. C. Twichell.
5. A Suggestion in the Treatment of Hæmoptysis, By L. Brown.
6. A New Intestinal Parasite of Man. Paramœba Hominis, By C. F. Craig.
7. The Acetone Bodies. Their Occurrence and Significance in Diabetes and Other Conditions, By T. S. Hart.
8. The Relations of Chronic Villous Polyarthritis to the Dumbbell-Shaped Bacilli, By M. Schueller.
9. Peptic Ulcer of the Œsophagus, By W. Tileston.
10. Primary Sarcoma of the Adrenal Gland, By I. W. Blackburn.
11. A Case of Narcolepsy, By A. N. Blodgett.
12. An Unusual Case of Antitoxine Rash, By R. L. Wilbar.

1. Vascular Tension in Chronic Illness.—Hare calls attention to the recently recognized fact that an intact vascular system, both functionally and anatomically, is essential to the health of the body in general and the heart in particular. Active cardiac stimulation is often more harmful than advantageous, unless measures are used to diminish toxæmia, thus permitting the heart to do its work. The heart is often competent to do its work, when the contrary is suspected, if vascular relaxation is overcome. The only three drugs which the author regards as useful for this purpose are atropine, adrenalin, and digitalis, which are useful in the order mentioned. Caution should be exercised in giving circulatory stimulants during fever. Three classes of high arterial tension in relation to cardiac failure may be distinguished: 1. Those in which the spasm results from prolonged nervous stress associated with improper habits of living. 2. Those in which in addition to spasm there is fibroid change in the vessels. 3. Those in which high tension is followed more or less suddenly, by low tension, the arteries resembling veins in their calibre and compressibility. Rules suggested to clinicians as follows: 1. Cardiovascular stimulants should not be given when careful reflection will show that cardiac relaxants are appropriate. 2. More attention should be given to protecting the heart from unnecessary labor. 3. If the vessels are properly treated the heart will in many cases take care of itself. 4. The heart should not be stimulated when the aim is to diminish its burden and diminish toxæmia.

2. Therapeutical Use of Tuberculin.—Trudeau has never abandoned his faith in the value of tuberculin, especially because its effects in animals are so pronounced. In a study of 135 patients in which tuberculin was used, discharged from his sanatorium during fifteen years, he found that eighteen per cent. more of the former, in incipient cases, were living than in the latter, and twenty-five per cent. more of the former, in advanced cases than in the latter. The question asked by the author is: Are the favorable results indicated by these figures, due solely to tuberculin or to other factors? The only sources of error which he can suggest are the influence of the selection of cases, and the fact that the tuberculin patients remained longer in the sanatorium than the others. Any specific curative influence of tuberculin would be definitely shown by prolongation of life in the advanced class, rather than in the incipient class in which there is tendency to cure without treatment. The author formed the opinion, years ago, that tuberculin carefully administered, had a favorable influence, and helped to improve the results of sanatorium treatment. The figures which he brings forward at least do not contradict his views.

3. The Opsonic Index in Tuberculosis.—Potter, Ditman, and Bradley assert that diagnostic value of the tuberculoopsonic index has been investigated by very few, Wright and Douglas having furnished the only contribution thus far. Their conclusions are: 1. When a series of measurements of the opsonic index of the blood is persistently low, it may be inferred if there is a localized bacterial infection suggesting tuberculosis that the infection is tuberculous. 2. If the tuberculoopsonic index is persistently normal tuberculosis may be excluded. 3. When a series of blood examinations shows a fluctuating opsonic index active tuberculosis may be inferred. 4. If the index is low, with only a single blood examination, localized or systemic tuberculosis may be inferred. If the index is high, systemic tuberculous infection which is active, or has recently been active, may be inferred. If the index is nearly normal neither a positive nor negative conclusion is warranted. 5. Since there are opsonic like substances which resist 60° C. for ten minutes, developed in the blood serum of those who are being inoculated with tubercle vaccine, or have responded to tuberculous infection, we may infer tuberculosis in those whose serum retains the power of inciting phagocytosis, after it has been thus heated.

4. The Technics of the Tuberculoopsonic Test.—Kinghorn and Twichell quote Wright as affirming that the phagocytic effect obtained when bacteria are introduced into the blood is dependent upon an action exerted by the blood fluids directly upon the microorganisms. This is called opsonic action, and is due to substances in the blood fluid which are termed opsonins. Opsonins for tuberculosis are, therefore, substances which so modify tubercle bacilli as to render them an easy prey for the phagocytes. They also quote the following propositions from Wright and Douglas: 1. Opsonins are contained in the blood serum or plasma. 2. They lose their power when heated to 60° to 65° C. for ten to fifteen minutes. 3. They exercise their influence by effecting a modification in the bacilli, and not by exerting a direct stimulating effect upon the phagocytes. The technics of the method used in estimating the opsonic power in the blood of tuberculous persons is then discussed, and also the opsonic power of those undergoing tuberculin treatment.

5. Treatment of Hæmoptysis.—Brown refers to the view of the ancient authorities that hæmoptysis is a precursor and even the cause of pulmonary tuberculosis. More recent authorities believe that in most instances symptoms precede the hæmoptysis, and that

the latter is the result and not the cause of tuberculosis. Fatal hæmoptysis has been shown to be usually due to the rupture of an aneurysm of a branch of the pulmonary artery. Other things being equal, the pulmonary pressure is directly determined by the amount of blood supplied to the right ventricle. Theoretically hæmoptysis may be controlled by increasing the coagulability of the blood by lessening the rapidity of its flow, by reducing the volume of blood in the weakened vessel, by lowering the blood pressure, or by constricting the affected vessel. Practically the author suggests that the blood pressure be frequently observed that morphine be given to quiet the patient and equalize the blood pressure. When hæmoptysis comes suddenly amyl nitrite should be given to reduce the blood pressure. Sodium nitrite, one grain, with or without nitroglycerin may be given if amyl nitrite cannot be used. Aconite may be combined with the other measures suggested in cases in which there is fever.

6. **Paramœba Hominis.**—Craig announces that he has found a new intestinal parasite, six cases having been determined exclusively among Philippines, after examination of a large number of specimens of fæces. This parasite passes through an amœbic and a flagellate stage of development, and does not belong to the genus entamœba, but probably is a paramœba. It probably reproduces by longitudinal division during the flagellate stage of growth. As to its pathogenic influence its presence was invariably accompanied with symptoms of severe diarrhœa, and it was the only organism present which could be considered as causative. It must not be confounded with *Trichomonas intestinalis,* which it resembles. It is larger than the former at the beginning of the amœboid stage, and the former does not possess active progressive amœboid motion. In the flagellate stage it is distinguished from the former by the absence of the undulating membrane, the presence of one flagellum and a circular shape. It has thus far been found only in nations of the Philippine Islands, but further research is likely to show that it is of more frequent occurrence than is now apparent.

ANNALS OF GYNÆCOLOGY AND PÆDIATRY.

August, 1906.

1. The Medical Inspection and Examination of School Children in New York City, By S. J. BAKER.
2. Review of Obstetrical Literature, By M. E. PLUMMER.

1. **The Medical Inspection and Examination of School Children in New York City.**—Baker states that the essential principle of the medical inspection of school children in this country has been the prevention and elimination of infectious and contagious disease. While New York was not the first to begin this work, it stands preeminent in the progressiveness of its methods, energy of enforcement, and detail and evolution of the system. One hundred and fifty physicians were appointed by the board of health in March, 1897, to regularly inspect the school children. From 1897 to 1902 the object was to exclude from school attendance children having any form of infectious or contagious disease. Since September, 1902, each child in a school has been personally examined by an inspector once each week. Since March, 1905, each child has been examined to ascertain the presence of noncontagious diseases. The schools under the direct supervision of the board of health include public schools, parochial schools, American Female Guardian Society schools, Children's Aid Society schools, and kindergartens.

THE DUBLIN JOURNAL OF MEDICAL SCIENCE.

August, 1906.

1. Clinical Report of the Rotunda Hospital, By E. H. TWEEDY and A. HOLMES.
2. Notes on the Pygmies in Sickness and in Health, By W. P. COCKLE.
3. The Stokes-Adams Syndrome, By T. H. PEYTON.

2. **Notes on the Pygmies in Sickness and in Health.**—Cockle describes these people, some of whom were on exhibition in Great Britain, as having an average height of four feet one and a half inches. The skin was black and shiny, there was little hair on the face, and that on the head was short and curly. Holes in the lips and ears were for various ornaments, and bracelets and belts were worn. The facial features were distinctly those of the negro. Five of them were seized with bronchopneumonia, which was treated by ordinary methods, and all recovered. The native method of treating this disease consists in scarification of the skin of the chest with an arrow, and in addition the medicine man having caused the patient to lie face downward, walks slowly up and down his back. Hunting is their sole occupation, and they use spears and poisoned arrows. Epilation of the eye lashes is a common practice among them.

3. **The Stokes-Adams Syndrome.**—Peyton states that this group of symptoms consists of a permanently slow pulse, ranging from ten to forty per minute, associated with recurrent attacks of transient loss of consciousness. In the few recorded cases the patients have usually been advanced in years, with diffuse arteriosclerosis. The author thinks the latter is not an essential symptom. The unconsciousness is believed to be due to anæmia of the brain caused by transient heart failure, brought on by sudden increase in the work required of the heart, as by sudden rising or by an overloaded stomach. The arteriosclerosis may be primarily due to local changes in the arterial wall, or may be secondary to increased tension in the small peripheral vessels, with subsequent compensatory endoarteritis. The changes in the heart in this condition have been generally regarded as secondary to sclerosis of the coronary arteries.

Letters to the Editors.

THE INTERNAL SECRETIONS.

640 H. W. HELLMAN BUILDING,
LOS ANGELES, CAL., *September* 1, 1906.

To the Editors: I wish to assure Dr. C. E. de M. Sajous of my regret if I have misquoted him in any particular. The word "Intersecretions" is a copyist's error, overlooked in correcting proof. As to whether the quotation he makes from my paper of August 11th is "false," I will leave it to those who have read his book to judge. I have read the work.

THEODORE G. DAVIS.

Proceedings of Societies.

AMERICAN SURGICAL ASSOCIATION.

Annual Meeting, held in Cleveland, Ohio, May 30 and 31 and June 1, 1906.

The President, Dr. ALBERT VANDER VEER, of Albany, N. Y., in the chair.

Surgery of the Large Intestine.—Dr. GEORGE E. ARMSTRONG, of Montreal, Canada, said the death rate from cancer of the large intestine, as from cancer in other situations, was to be lowered by learning to recognize it in its early and incipient stage, rather than in devising heroic operative procedures. In addition to the usual indications of malignancy, as noted in the failing health and strength, attention was drawn to the fact that in a very large percentage of cases of early malignant disease of the intestine there was a regular daily rise of temperature amounting to two or more degrees, and it was pointed out that if this proved to be a general rule, it would perhaps be as valuable a sign of early malignant as of incipient tuberculous disease. Another symptom complex referred to was the frequently recurring colicky pains associated with con-

stipation; and when the cancer was situated in the rectum, to the sudden development of hæmorrhoids with constipation. The harmless form of hæmorrhoids usually developed as the result of prolonged and persistent constipation. The importance of a very thorough and careful examination was referred to, and in particular a careful search for the presence of a tumor mass, the examination not being considered complete until carried out with the patient in varying positions. These tumors sometimes lay under the liver or under the spleen, so that they could not be detected with the patient in the recumbent position, and yet became apparent when he stood up, or they might be discoverable one day and the next be impalpable in any position that the patient might assume. A distinguishing feature of these tumors was their mobility, particularly under the hand and most marked when they were situated in the transverse colon and sigmoid.

The treatment of these cases was discussed from the points of view of the relief of intestinal obstruction and of the radical removal of the growth. In the former good judgment had more to do with the results than manual dexterity or knowledge of technique, and it was urged that in patients admitted to hospital with distended abdomen, stercoraceous vomiting, general peritonitis, and intestinal walls sodden and friable, nothing more should be attempted than drainage of the bowel through the appendix or an appropriately placed Paul tube. Many deaths occurred from trying to do too much under such circumstances. Ideal surgery should not be considered; it was a question of expediency, of temporizing, and of giving the patient time to recover from the toxæmia present. Short circuiting of the growth and its removal at the same or some subsequent time was commended as a cleaner and more satisfactory procedure than colostomy, and as a method which offered opportunity for the removal of glands. The extraction of the growth, drainage of the bowel with a Paul tube, subsequent removal of the tumor, and the establishment of anastomosis by Mikulicz's centrotribe were commended as a safe procedure, but by no means ideal, as it was dirty and did not generally permit of thorough removal of the glands.

In speaking of cancer of the rectum (the so called high cancer of the rectum), a finger's length from the anus, different methods were referred to. The perineal route for the removal of high cancer of the rectum was condemned as giving insufficient access either for the proper control of hæmorrhage or for the removal of the diseased glands. Good results had been obtained by the sacral methods. By this route the disease might be removed at a high level, and the operation was comparatively bloodless. On the other hand, it opened up a large field which only too often became infected in spite of all precaution. When once it was infected, absorption took place, the patients had a rise of temperature, convalescence was slow, and sinuses and fistulæ might persist for an indefinite time. Then, again, it was sometimes very difficult to bring the upper end of the divided bowel down to the level of the skin without tension, and an end to end anastomosis of the rectum, uncovered as it was for the most part by peritonæum, was generally a failure. The combined abdominal and perineal method was advocated as the most conservative, the safest, and most radical of the methods so far employed. Through the abdominal incision the operator could reach as far above the disease as necessary. The glands might be thoroughly removed and involvement of the peritonæum or bladder, if present, might be recognized and dealt with as might seem best. The greater part of the operative work might be accomplished before the intestine was opened or the peritonæum exposed to infection. If there was sufficient of the lower end left after the removal of the disease, the intestinal canal might be restored by a sigmoidoproctostomy, or ileosigmoidostomy, and it went without saying that the canal should be restored whenever possible. If this was impossible, the upper end might be brought out through a colotomy wound, and a permanent artificial anus established. The lower end could then be separated by blunt dissection and pushed down behind the bladder, and the peritonæum close over it much in the same way as after extirpation of the uterus. The lower end might then be removed by the perineal route. If the patient's condition was not good, the removal of the lower end of the rectum might be delayed for a few days, but in the four cases in which the author had removed high rectal disease by this method the patients had been remarkably free from shock, and had left the table in good condition. It was pointed out that the artificial anus in front, while possibly causing more mental distress than one situated behind, was more easily cleaned and looked after, and made the patient more independent of nurse or valet. The more frequent use of the Paul tube in colotomies was advocated.

Cancer of the Sigmoid and Rectum.—Dr. Charles H. Mayo, of Rochester, Minn., said that with some reserve the curability of cancer was generally accepted. The disease was more rapidly disseminated in the young from their active lymphatics. The large bowel was the natural absorber of fluids, but had a limited lymph drainage. Cancer of the colon was a disease in a removable structure which might remain essentially local for a long period. In the sigmoid, if the tumor was not removable, short circuiting the bowel was advisable. Low cancer of the rectum could be removed by the perineal route.

Those growths which were above easy reach were best removed by a combined operation, abdominal and perineal. If the muscular and nerve tissue could be preserved, the anal outlet was maintained; if it must be destroyed, an inguinal anus was made. If the growth was within easy reach, curetting and the cautery were preferable to colostomy.

In five years he and Dr. W. J. Mayo (usually working together) had operated upon twenty-six patients by the combined method; seven had died from the operation or within one month; ten had been operated on too recently for the reports to be of value, but they were alive and well; seven had lived over a year, five being alive now; five had lived over two years, three being alive now; and three had lived over three years, two being alive now.

As there were only four who had survived the operations done over three years ago, and fifty per cent. were alive and well, the results were favorable, although the operative mortality was high.

Cancer of the Colon, with Special Reference to Its Diagnosis; Types of Operation; Method of Avoiding Fæcal Drowning.—Dr. Willy Meyer, of New York, explained that his remarks would have reference to that part of the colon only which was situated between the cæcum and the sigmoid. He pointed out the paramount importance of early diagnosis and timely operation, at the same time admitting the great difficulty in reaching such a consummation, chiefly on account of the usually latent development of the disease. He cited a case in which the patient had been apparently in perfect health up to within a few weeks of his death. The symptoms then developing pointed to malignant tumor of the anterior mediastinum. The post mortem showed primary carcinoma of the colon, with metastatic involvement of the mediastinum. Every symptom, therefore, that justified the suspicion of colonic cancer, and every method that might help to determine the correctness or incorrectness of such a suspicion, must be welcomed; all the more, as the prognosis of cancer of the colon was better than that of malignant disease in any other part of the gastrointestinal tract.

Of the subjective symptoms, he considered of greatest value that of periodic, not always painful, contrac-

tion within the abdomen, so often noticed by the patient. It occurred usually in more or less the same locality, and, in an advanced stage of the disease, was frequently followed by a distinctly audible gurgling sound. He called this sign "subjective stiffening" of the gut, in contradistinction to the "objective stiffening," or tetanic recurrent peristalsis, of the gut proximal to the seat of the disease, first described by Nothnagel as a visible and palpable sign. In one of his own cases, one of carcinoma of the transverse colon, this "subjective stiffening" of the gut represented the only symptom complained of during many months. Among the objective signs, the author mentioned the appearance of a palpable tumor in forty per cent. of the cases only, chronic circumscribed meteorism, the objective stiffening of the gut above referred to, and the rather sudden formation of capillary angeiomata and pigmented warts in the skin of the abdominal wall. The latter he considered an unfailing pathognomonic sign of cancer of the colon, provided the history and palpation pointed to this disease. He had personally observed this phenomenon in four of his cases.

With regard to the diagnosis, the following conditions came principally into consideration: Tumor of the kidney, or floating kidney; chronic cholecystitis or hydrops of the gallbladder; retroperitoneal infiltrated lymphatic glands corresponding to the location of the splenic flexure, or secondary to a cancer of the pancreas; and benign intracolonic sessile tumors. He believed the age of the patient to be no contraindication to a radical operation, so long as his general condition was still good. In greatly debilitated patients a palliative operation only could, of course, be performed, but if it was done at an early stage of the disease, the objectionable artificial anus, otherwise unavoidable, might be obviated by way of a lateral anastomosis.

In discussing the different operations indicated for the various conditions found, Dr. Meyer pointed out the danger from the so called "fæcal drowning," which heretofore had been the *bête noir* of the surgeon, whenever more aggressive work was decided upon. He called attention to and demonstrated Kausch's œsophageal narcosis tube, an apparatus designed for the purpose of overcoming this danger. It consisted briefly of two rubber balloons attached near either end of a stomach tube and communicating with each other by means of a thin rubber tube. The lower bulb, when empty, was easily introduced into the stomach; then the bulbs were inflated by means of an ordinary hand syringe and the whole was pulled upward until resistance was met with, which indicated that the lower balloon pressed against the cardiac opening, thus rendering it impossible for any stomach contents to escape, except through the tube. Kausch had successfully used the instrument in three cases. This narcosis tube seemed a most simple and ingenious device, and would undoubtedly find very general application after it had become better known to the profession.

The author stated that his personal operative experience with cancer of the colon within the section limited by his paper covered eleven cases, but that so far he had not had an opportunity of employing the narcosis tube just described. He added a brief record of his cases, in all of which, with the exception of one, patients had come under his care in a well nigh hopeless condition.

The Surgery of Tuberculosis of the Colon.—Dr. L. L. McArthur, of Chicago, read a paper on this subject, in which he submitted the folllowing propositions: 1. Intestinal tuberculosis was far more frequent than had been in the past accepted. 2. Its primary nature in this situation was now admitted in five per cent. of these cases by the pathologists, who also maintained that twenty-five per cent. of all human tuberculosis gained its entrance through the intestinal mucosa. 3. Either the "ulcerative" or the "hypertrophic" type of this disease was (at some time) amenable to surgical interference. 4. Interference should be either by excision or exclusion. 5. Surgical injury in these forms of intestinal disease was better borne than a like degree in any other. 6. Early recognition by the internist and intervention by the surgeon would eliminate a large proportion of cases now classified as tabes mesenterica.

Tuberculosis manifested itself in the intestine in two forms, the ulcerative and the hypertrophic. Individuals extremely prostrated with this affection were tolerant of extensive surgical injuries, which in other ailments requiring similar procedures proved fatal. Both these varieties, in his experience, were amenable at times to surgery, the nature of which must be determined by the individual case. So many factors would have to be considered in its determination that no set rule could be laid down. Practically, its surgery divided itself into exclusion and excision, the choice being determined by the conditions obtaining in the given case. The excluson might be partial or total.

Excision, generally speaking, was more applicable to the hypertrophic variety and to those cases of the ulcerative type in which the condition of the patient and the area involved did not too strongly militate against it, while exclusion was reserved for those in which the extent of the ulcerative area involved or the extreme debility of the patient made this simpler procedure appear the more advisable.

The term "partial" he applied to a side to side anastomosis of the intestinal tube above and below the diseased area, while "total" exclusion implied resection of the bowel wall above the disease and closure of the distal end, with implantation of the proximal end well below the diseased area. It was distinctly to be understood that absolute occlusion was never practised. Though the number of cases of tuberculosis of the large intestine demanding surgical intervention in his practice had been limited, the regularity with which the patients had recovered had made him most hopeful for the future. He presented from his records cases in which he had operated, illustrating the points he emphasized in his paper.

Myomata of the Large Intestine.—Dr. W. L. Estes, of South Bethlehem, Pa., said that true myomata of the large intestine were almost unknown. So called myomata of the large intestine were histologically fibromyomata, and they were practically always fibroleiomyomata. The rectum was the part of the large intestine which in the great majority of the cases was involved, although there were a few cases on record of myomata of the cæcum, of the ascending, and of the descending colon.

Dr. E. Lexner, of von Bergmann's clinic, had classified myomata, and he had collected the largest number of cases the writer had seen. Lexner made three groups of these tumors, as follows: 1. Tumors which grew in the lumen of the gut. These appeared as pedunculated, roundish, or polyplike tumors, of rather hard consistence, covered by mucous membrane. They might be removed by way of the anus. The pedicles should be ligated and then cut through. 2. Tumors which grew by a pedicle from the outside walls of the intestine, and which by their bulk impinged upon and might produce almost complete stenosis of the gut by their gradually increasing pressure. This class might involve any part of the large intestine, but were chiefly found in the upper part of the rectum. These tumors required laparotomy for their removal. 3. Tumors which grew from the rear of the rectum and by their bulk, pushed the rectum forward and filled up the cavity of the pelvis. These tumors were easily mistaken for ovarian and other common tumors of the pelvis. They required sacral exsections or parasacral incisions for their removal. The writer suggested the possi-

bility of another, or fourth, group. Tumors in this class resulted from inflammation. While they were really hyperplasias, they might, but very rarely, develop as circumscribed masses in the walls of the gut, which by persistent hypertrophic thickening might cause stenosis of the gut. The sigmoid flexure was the part of the large intestine involved by this class of tumors.

The writer gave the history of a very remarkable case of stenosis of the sigmoid flexure which had resulted from enormous and symmetrical hyperplasia, chiefly of the muscular coat of the gut, and formed a well marked tumor of the intestine. The intestine was strictured, almost entirely closed, within the area of the tumor, not above it or below it, and the stenosis was produced by the bulk of the hyperplastic muscular layer. Histologically, it was classed by the pathologist as a myofibroma.

J. Rotter, in a monograph on Inflammatory Strictures of the Sigmoid, gave credit to Graser, and quoted his (Graser's) investigations and conclusions as to the pathological steps involved in the production of ordinary inflammatory strictures of the sigmoid. These writers did not explain any development such as had occurred in the writer's cases, nor did they furnish any case of well marked symmetrical tumor that was produced bw the inflammatory conditions they described. The writer had not been able to find any mention in surgical or pathological literature of a case similar to his. He believed, therefore, that his case was very rare, and that it indicated the possibility of a fourth class of tumor of the large intestine which belonged to the myomatous groups. These tumors required laparotomy for their removal. On account of the very numerous and dense adhesions, the operation was extremely tedious and difficult.

The Surgery of Carcinoma of the Upper Portion of the Rectum and the Sigmoid Colon, with Special Reference to the Combined Sacral and Abdominal Operation for the Resection of These Tumors.—Dr. Joseph C. Bloodgood, of Baltimore, stated that sufficient time had elapsed to demonstrate clearly that resection had accomplished a certain number of cures of carcinoma of the stomach and of the small and large intestines. In the majority of these cases the hope of future progress depended more upon earlier recognition than upon improvement in operative technique. The technique of gastrectomy for carcinoma was most satisfactory. The only partially settled problem was in regard to the extent to which glandular dissection should be carried. At the present time the majority of authorities favored a restricted glandular operation in view of the higher mortality of the more extensive dissection and the slight probability of a cure if these more remote glands were involved. With carcinoma of the small intestine there was not sufficient experience to formulate positive deductions. Malignant epithelial tumors from the ileocæcal valve to the anus were comparatively of frequent occurrence. When the tumor was situated in that part of the large intestine above the promontory of the sacrum, the entire operative manipulation was performed within the abdomen. These tumors, which arose from the mucous membrane of the large intestine, showed little tendency to extend beyond the peritoneal coat, except at the mesenteric border. Adhesions due to the infiltration of the epithelial growth through the peritoneal coat to neighboring viscera were late complications. In planning for the complete extirpation of these growths one should resect a very generous portion of the apparently uninvolved intestine on each side of the palpable tumor, because infiltration of the new growth along the submucosa beyond the open ulcer was a common occurrence. The next most important step was to include with this portion of the bowel a large area of mesocolon, whether the glands were palpable or not.

In selecting the point for the division of the bowel above and below the tumor, one should have in mind not only the complete removal of the tumor, but a point for division which should have, after the resection of the mesenteric area, a proper blood supply. The experience of any surgical clinic and the literature showed a comparatively large number of cases in which the tumor had every appearance of curability, but in which death had been due to gangrene of one or both ends of the resected intestines. The decision as to the method of suture after the resection was a somewhat difficult one. As a rule closure of the two ends with a lateral anastomosis was the safer procedure.

As the tumor of the colon approached the promontory of the sacrum new problems arose. In some instances there was sufficient healthy bowel below the tumor to allow of resection and suture within the abdomen. In other cases, on account of the position of the tumor or its infiltration toward the anus, the resection could be completely accomplished only by a combination of an abdominal and extraabdominal or sacral incision. The paper was concerned chiefly with the latter group of tumors.

The literature on this subject with a pretty complete historical review appeared in 1904 in the *Deutsche Zeitschrift für Chirurgie* (Band lxxiii, page 229), by Ito and Kunika, and by Goullioud and Faysse in the *Revue de chirurgie* (vol. xxxi, 1905, pages 711 and 107). As far as he had been able to ascertain, these two articles covered the most important contributions to the literature.

In the past surgeons had been concerned chiefly with the extirpation of the affected bowel with a generous portion above the tumor, and below the tumor the extent of the removal had varied from 4 cm. to the entire rectum, including the sphincter. In addition, they had made very extensive dissection of the tissue between the rectum and the sacrum. These surgeons had been content with either inguinal colostomy or a sacral anus.

In approaching his cases since 1904, he had endeavored not only to fulfill the requirements of a complete removal of the malignant disease, but to attempt, after its removal, a restoration of the continuity of the bowel by an end to end anastomosis.

A careful study of the recorded cases would justify the following criticisms: 1. Colostomy had been performed too frequently as a primary operation. He believed that colostomy was not indicated unless the patients were first seen in the condition of an acute obstruction, or their condition was so critical from chronic obstruction that a prolonged operation was contraindicated. If possible, the entire operation should be performed at one sitting. 2. It was unnecessary to ligate the vessels so far from the mesenteric border of the colon. Resection of the glands up to this point was not indicated. If they were involved, his experience demonstrated that the condition was hopeless for an ultimate cure. The disadvantage of ligation of the vessels so far from the colon was due to the fact that, after such a ligation, a more extensive resection of large intestine was necessary in order to leave bowel with proper circulation. 3. Too much bowel below the tumor was removed.

If one restricted the resection of the large intestine above and below the growth to that necessary only for the complete removal of the disease, and ligated vessels as they were met with in the proper dissection of the mesentery with its glands and the fat between the rectum and the sacrum, it would be possible in a large number of cases to restore the continuity of the bowel by an end to end suture.

The pathological examination of a number of specimens and the zone of mesenteric involvement which

he had made apparently confirmed the statements in the previous paragraphs. In this somewhat restricted operation the new growth was given sufficient margin and at the same time the circulation of the remaining portion was not impaired, and in the majority of cases there was restoration of continuity.

When the tumor involved the rectum below the promontory of the sacrum, at which position the posterior portion of the bowel had no peritoneal coat, it infiltrated quickly through the wall of the bowel into this tissue. The removal of the tissue between the rectum and the sacrum should never be restricted. There was every evidence to indicate that this was accomplished by the combined method better than by the sacral route alone.

(*To be continued.*)

Book Notices.

I Principi fundamentali della antropologia criminale. Dott. GIUSEPPE ANTONINI, direttore del manicomio provinciale di Udine; libero docente di psichiatria. Milan: Ulrico Hoepli, 1906. 12mo, pp. 167.

In this pocket volume, which forms one of the well known series of Hoepli's manuals, Antonini presents a very brief review of the principles of criminal anthropology from the viewpoint of Lombrosian doctrine and of modern psychiatric practice. In the introductory chapter he gives a succinct historical outline of the science of anthropology, beginning with the ancient physiognomists, among whom Aristotle shines, to the phrenologists, led by Gall and by Lavater, to the modern theory of degeneration, the foundations of which were laid by Morel, and the full import of which was made clear by Lombroso and his school.

In the second chapter Antonini replies to the arguments of the opponents of the Positive School of Criminology, which Lombroso leads, reviews the chief works of that school (*L'Uomo delinquente* of Lombroso, Ferri's *Sociologia criminale,* and Garofolo's *Criminologia*), outlines the principal physical characteristics of the "congenital criminal," and discusses the identity of the born criminal with the insane and the epileptic.

In the third chapter he discusses the applications of criminal anthropology in the courts of justice, with special reference to the functions, privileges, and duties of the medical expert. In the fourth and last chapter the symptoms, physical signs, and diagnostic features of insanity are considered. The book is full of information, is written with unusual clearness, and offers a few hours of most interesting reading.

Pathology, General and Special, for Students of Medicine. By R. TANNER HEWLETT, M. D., M. R. C. P., D. P. H., Professor of General Pathology and Bacteriology in King's College, London, etc. Philadelphia: P. Blakiston's Son & Co., 1906. Pp. 504. (Price, $3.25.)

The purpose of the author, as expressed by him in his preface, has been to detail such essentials of general and special pathology as are required by the majority of medical students. He has succeeded well in presenting in this moderate sized volume an admirably arranged exposition of all the main facts of the pathology of to-day. The sections in which are treated infection and immunity, the blood, neoplasms, parasites, the ductless glands, and the central nervous system, subjects in which perhaps the greatest changes and advances in recent years have been made, appear especially noteworthy. The work can be commended not only to students, for whom it is specially intended, but also to the busy practitioner who may wish to quickly review and bring down to date his knowledge of pathology. A feature which will cause the book to be received with favor in this country is the generous appreciation it shows of the work of American investigators. Among those freely quoted we note the names of Welch, Osler, Flexner, Delafield, Councilman, and MacCallum.

Pneumonite crupale, con speciale riguardo alla sua cura. Dott. A. SERAFINI. Milan: Ulrico Hoepli, 1906. 12mo, pp. 222.

This manual, one of the Hoepli series of pocket treatises, contains a condensed but very complete account of lobar pneumonia. Beginning with an historical introduction, the various chapters deal with ætiology, pathology, symptoms, anomalous or atypical forms of the disease, course, terminations, mortality, diagnosis, prognosis, prophylaxis, and treatment. The last mentioned chapter is of course the most interesting, and has been very carefully worked out. Serum therapy, as well as drug treatment, is considered, and a final section is devoted to the discussion of the "rational treatment" of the disease. While the author insists on the superiority of Pane's serum to that recommended by Tizzoni and Panichi, he is not overenthusiastic about either method, and admits that there is some justification for the adverse criticism of Pane's pneumococcus serum.

His own "rational method" properly includes provision for fresh air and good hygienic surroundings, a carefully regulated diet, etc. He makes rather free use of cups and of bleeding. Thus, in the first stage, that of engorgement, when the principal symptom is a "stabbing pain," he applies cups or leeches to the chest and gives a purge, together with a decoction of althæa and some sodium benzoate. In the evening the patient receives a hot infusion of linden or of chamomile to make him sweat. A syrup containing codeine, opium, and cherry laurel water is given for the cough. In the second stage he uses dry cups, mustard plasters, and hot poultices. In the third stage, when there is dyspnœa, with poisoning of the system, he again bleeds, this time in the regular way, from a vein in the arm, removing from nine to fifteen ounces of blood. After the crisis, which then usually comes on, expectorants are given. During the entire disease he of course watches the heart and gives stimulants when they are needed.

Miscellany.

Andreas Vesalius.—Andreas Vesalius, father of descriptive anatomy, was born at Brussels, the last day of the year, 1514. His was the fourth generation of influential physicians to be intimately connected with the continental courts. His father held the position of apothecary to the Emperor Maximilian, Charles V. At a somewhat early age the precocious youth entered the University of Louvain, electing a course in philosophy, the study of which merely served to whet his eager appetite for the science of his life. Turning to medicine he studied at Montpellier and at Paris; at the latter university the celebrated Tagault interested himself in the brilliant young pupil and secured for him as tutor, Sylvius, at that time professor of anatomy in the institution. The relation between tutor and scholar becoming somewhat strained on account of the intense jealousy aroused in Sylvius by the rapid advance of his pupil, Vesalius receiving his degree returned to Louvain. His fame as anatomist was in the ascendant. He was loved, admired, but feared since in his zeal to secure material for his profession, he was detected stealing the remains of a malefactor hanging on the gibbet just outside the town. From Louvain he traveled to Italy, serving as army surgeon and taking active part in the campaigns in the low countries and in France. Finally, at the call from the faculty

of the celebrated University of Padua, he accepted the professorship of physics and settled there in his twenty-fourth year—1538. It was at Padua, that the brilliant anatomist collected the material which led finally to his magnum opus—*de humani corporis fabrica*—appearing in 1543. The work was printed at Basle by John Oporinus. The plates, approaching which nothing had been seen before, were wonders of skill and art. Even the great Titian, a close friend of Vesalius, was at one time charged with being the author of them; but it has finally been made most probable that the drawings came from the hand of John Stephen de Calcar, who had become such an apt pupil of the master artist that even now his paintings are confused with those of Titian. Upon the whole the marvellous accuracy and detail of the plates was accompanied by a good but somewhat commonplace description. In reading one feels the lack of inspiration which would accompany new thought. The wonder grows that the author could have disclosed so much and not discovered more. The appearance of the book called forth anew the intense jealousy of Sylvius. In this he was joined in criticism by Eustachius, Driander, and Riolau. These savants instantly and viciously denied the splendor of the achievement, claiming that most of the work formed the simple reproduction of what Galen had originally performed. They denounced Vesalius for not ascribing to Galen the credit of the work. Fallopius alone stood up for his teacher. Notwithstanding all this the fame of the author and his masterpiece spread. In England there appeared in 1554 an edition in Latin dedicated to Henry VIII, and a second edition in English dedicated to Edward VI. In 1554, Charles V. called Vesalius to his court as Archiatrus, and upon Charles abdicating in favor of his son Philip, the latter continued the great anatomist in the office. In 1559 Vesalius was sent by Philip to France to attend Henry II., who in the midst of the revels attendant upon the espousals of his daughter Elizabeth to Philip, and of his sister Margaret to the Duke of Savoy, had in a tilt in a tournament received the shaft of a broken lance in the right eye. When Vesalius arrived the king was dead. Vesalius followed Philip to Spain in 1560. Here he succeeded in curing the injury to the head of the Emperor's son Carlos—a feat which made him famous and gave him a fashionable clientele of the crowned families of Europe. Another event added to his notoriety. D'Egmont, Count of Buren, lay very ill. Vesalius, as court physician, pronounced his illness fatal and predicted that life would not continue after a certain day and hour. The count accepted the decree and invited his friends to an antemortem feast. After dinner he presented gifts and bidding an everlasting farewell, like an obedient patient expired at the very moment named by Vesalius for his death. At this point of his life the court physician was at the zenith of his eminence. Early in 1562, for some mysterious reason he suddenly left the court at Madrid and traveled to Venice via Perpignan. At this latter place, in order to save a small bribe at the Spanish customs, he was delayed ten days at a cost of fifty crowns. From Venice he traveled to Cyprus, and from there to Jerusalem and the Holy Land. Of the many reasons advanced to explain his sudden departure, the following is the most accredited. Vesalius, believing a young Spanish nobleman to be dead, obtained leave to perform an autopsy. Upon opening up the chest cavity, he saw the heart beating. The parents learning of this, persisted in attempting to prosecute him for murder. The king intervened, however, and saved his life on the condition that to atone for his error, he should make a sacred pilgrimage. In the latter part of the year, Falloppius, then but forty-one years of age, died at Padua, leaving vacant the first chair in physics. The next year the Senate of Venice sent after Vesalius, asking him to return and assume the vacant chair. The message was received at Jerusalem and in the autumn of the following year he set sail from Joppa for Italy. A violent storm drove the vessel on the Ionian Islands, where it was wrecked on or near the Island of Zante. Here the great anatomist, stricken with cold and hunger, breathed his last, October 15, 1564. He was afterward buried in the Church of Our Lady in Zante.—Holmes C. Jackson, in *Albany Medical Annals.*

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending September 7, 1906:

Places.	Date.	Cases.	Deaths.
Smallpox—United States.			
Louisiana—New Orleans	Aug. 18-25	7	
New York New York	Aug. 18-25	3	
Ohio—Cincinnati	Aug. 24-31	1	
Pennsylvania Sunbury	July 4	1	
Texas Houston	Aug. 18-25	1	
Smallpox—Foreign.			
Africa—Cape Town	July 14-28	30	
Canada—Toronto	Aug. 18-25	1	
France—Paris	Aug. 4-11	7	
Great Britain—Liverpool	Aug. 18-25	2	
India—Bombay	July 24-Aug. 7		3
India—Calcutta	July 14-28	21	
India—Karachi	July 22-Aug. 5	7	2
India—Madras	July 21-Aug. 3		5
India—Rangoon	July 14-21		2
Japan—Kobe	July 14-21	1	
Russia—Moscow	Aug. 4-11	2	2
Russia—Odessa	Aug. 4-18	8	
Russia—St. Petersburg	July 28-Aug 4	1	1
Siberia—Vladivostok	July 14-21	2	1
Yellow Fever—Foreign.			
Cuba—Havana	Sept. 3-5	1	1
Mexico—Merida	Aug. 12-25	10	5
Mexico—Vera Cruz	Aug. 19-25	1	
Cholera—Foreign.			
India—Bombay	July 24-Aug. 7		207
India—Calcutta	July 14-28		19
India—Madras	July 21-27		10
Plague—Insular.			
Honolulu—Hawaii	Aug. 30		1
Plague—Foreign.			
Arabia—Djeddah	July 16-22	11	11
Egypt—Alexandria	Aug. 4-9	8	7
Egypt—Suez	Aug. 3-9	4	4
India—General	July 7-14	450	346
India—Bombay	July 24-Aug. 7		69
India—Calcutta	July 14-28		17
India—Karachi	July 22-Aug. 5	16	16
India—Rangoon	July 14-28		277
Japan—Formosa	July 21-31	20	29

Public Health and Marine Hospital Service:

List of Changes of Station and Duties of Commissioned and Noncommissioned Officers of the Public Health and Marine Hospital Service, for the seven days ending September 5, 1906:

CARRINGTON, P. M., Surgeon. Granted three days' leave of absence, from September 3, 1906, under provisions of Paragraph 189 of the Service Regulations.

GUITERAS, G. M., Surgeon. Directed to rejoin station at Cairo, Ill

HOUGH, J. SPENCER, Acting Assistant Surgeon. Granted leave of absence for thirty days, to be taken on or about October 15, 1906.

MEAD, F. W., Surgeon. Directed, upon expiration of leave of absence, to proceed to Savannah, Ga., and assume command of Service at that port.

SAWTELLE, H. W., Surgeon. Directed to report to chairman of board of medical officers, Washington, D. C., September 4, 1906, for physical examination.

STONER, G. W., Surgeon. Directed to proceed to Washington, D. C., for special temporary duty, upon completion of which to rejoin station.

THOMAS, A. H., Pharmacist. Granted leave of absence for fifteen days, from September 9, 1906.

WILLIAMS, L. L., Surgeon. Leave of absence granted Surgeon Williams for one month and fifteen days, from

July 16, 1906, amended to read nineteen days, from July 16, 1906, and five days from August 19, 1906, in all twenty-four days.

Boards Convened.

Board of officers was convened to meet at the Bureau, Washington, D. C., September 4, 1906, to determine whether or not the physical condition of Surgeon H. W. Sawtelle is such as to entitle him to "waiting orders." Detail for the board: Assistant Surgeon General J. M. Eager, Chairman; Assistant Surgeon General J. W. Kerr; Surgeon L. L. Williams, Recorder.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, for the week ending September 8, 1906:

ARTHUR, W. H., Major and Surgeon. Granted ten days' leave of absence.

BARTLETT, COSAM J., First Lieutenant and Assistant Surgeon. Relieved from further duty at Camp of Instruction, Murray, Washington, and ordered to report to the commanding general, Department of California, for duty.

BOYER, PERRY L., First Lieutenant and Assistant Surgeon. Left Camp of Instruction, Austin, Texas, with 2nd Battalion Field Artillery, marching to Fort Sam Houston, Texas.

DARNALL, C. R., Captain and Assistant Surgeon. Will proceed to Camp of Instruction at Fort Riley, Kas., for observation of the methods of instruction and the organization of the Medical Department in the field, and to inspect the new sanitary methods and appliances in use at the camp; upon the completion of this duty he will return to his proper station.

FIFE, J. D., First Lieutenant and Assistant Surgeon. Reports departure from Fort Slocum, N. Y., on detached duty with recruits, and on arrival at Boise Barracks, Idaho, to avail himself of seven days' leave of absence.

HAVARD, VALERY, Colonel and Assistant Surgeon General. Upon adjournment of the Association of Military Surgeons, Buffalo, N. Y., will proceed to Camp Roosevelt, Mount Gretna, Pa., for observation of the Medical Department in the field and inspection of new sanitary methods and appliances in use at the camp; upon completion of this duty he will proceed to Camp of Instruction at Fort Benjamin Harrison, Ind., for similar duty, and then return to his proper station.

LOVING, R. C., First Lieutenant and Assistant Surgeon Granted leave of absence for one month, and authorized to return to the United States via the Suez Canal, on one of the transports to leave Manila, P. I., for New York city, on or about September 1, 1906.

MASON, C. F., Major and Surgeon. Will proceed to Camp Chickamauga, Ga., to observe the methods of instruction and organization of the Medical Corps in the field, and to inspect the new sanitary methods and appliances in use at the camp; upon completion of this duty he will return to his proper station.

MILLER, E. W., First Lieutenant and Assistant Surgeon. Left Camp of Instruction near Austin, Texas, with the 1st U. S. Cavalry, *en route* to station, Fort Clark, Texas.

O'REILLY, R. M., Brigadier General and Surgeon General. Reappointed Surgeon General of the Army for the period of four years, from September 7, 1906.

PHALEN, J. M., First Lieutenant and Assistant Surgeon. Left Camp of Instruction, near Austin, Texas, *en route* to station, Fort Logan H. Roots, Ark.

PURNELL, H. S., First Lieutenant and Assistant Surgeon. Leave of absence extended one month.

WHALEY, A. M., First Lieutenant and Assistant Surgeon. Granted leave of absence for one month, and authorized to return to the United States via the Suez Canal, on one of the transports to leave Manila, P. I., for New York city, on or about September 1, 1906.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy for the week ending September 8, 1906:

CURTIS, L. W., Surgeon. Detached from the *Pensacola*, Naval Training Station, San Francisco, Cal., etc., and ordered home to await orders.

DESSEZ, P. T., Assistant Surgeon. Detached from the *Severn* and ordered home to await orders.

DOWNEY, J. O., Assistant Surgeon. Ordered to the Naval Hospital, Philadelphia, Pa.

FISKE, C. N., Passed Assistant Surgeon. Detached from the *Marblehead*, when out of commission, and ordered to the *Yorktown*.

HUFF, E. P., Acting Assistant Surgeon. Appointed an acting assistant surgeon, from August 31, 1906.

MARMION, R. A., Medical Director. To be placed on the retired list of officers of the Navy, September 6, 1906, in accordance with the provisions of section 1444 of the Revised Statutes.

MAYERS, G. M., Passed Assistant Surgeon. Detached from the Navy Yard, Washington, D. C., etc., and ordered to the *Marietta*.

RIGGS, C. E., Surgeon. Detached from the Navy Yard, New York, etc., and ordered to the *Pensacola*, Naval Training Station, San Francisco, Cal., and to additional duty at the Naval Training Station.

Births, Marriages and Deaths.

Born.

EDWARDS.—In Pittsburgh, on Friday, August 24th, to Dr. James F. Edwards and Mrs. Edwards, a son.

Married.

BLUMER—EVANS.—In San Diego, California, on Monday, August 20th, Dr. George Blumer and Miss Anne Evans.

BROOKHARD—MILLS.—In Cheyenne, Wyoming, on Tuesday, August 28th, Dr. Leslie R. Brookhard and Miss Anna R. Mills.

DORENHEIM—WEIDMAN.—In Washington, D. C., on Tuesday, August 28th, Dr. Carl E. Dorenheim and Miss May J. Weidman.

REISENFELD—KRATZENSTEIN.—In New York, on Tuesday, September 4th, Dr. Edwin A. Reisenfeld and Miss Rita Kratzenstein.

STREET—WOODWARD.—In New York, on Monday, August 27th, Dr. Richard H. Street and Miss Lillian Woodward.

Died.

BUCHANAN.—In Philadelphia, on Tuesday, August 28th, Dr. Samuel A. Buchanan, aged forty years.

CARTWRIGHT.—In Chicago, on Tuesday, August 28th, Dr. H. Cartwright, aged forty years.

CLAITOR.—In Kosciusko, Mississippi, on Tuesday, August 28th, Dr. D. M. Claitor.

CODY.—In Toronto, Ontario, on Tuesday, August 28th, Dr. Walter Tait Cody, of Detroit, aged forty-five years.

CRUM.—In Elmira, N. Y., on Wednesday, August 29th, Dr. George H. Crum, aged sixty-seven years.

FINN.—In Boston, on Saturday, September 1st, Dr. James A. Finn.

HEARD.—In Magnolia, Massachusetts, on Sunday, September 2nd, Dr. John Theodore Heard, of Boston, aged seventy years.

LEECH.—In Cambridge, Ohio, on Wednesday, August 29th, Dr. James A. Leech.

LOHR.—In West Bend, Wisconsin, on Sunday, August 27th, Dr. Walter C. Lohr, aged twenty-eight years.

MORTON.—In Richmond, Virginia, on Thursday, August 30th, Dr. J. Thompson Morton, of Keysville, aged thirty years.

OSBURNE.—In Grove City, Pennsylvania, on Thursday, August 30th, Dr. J. A. Osburne.

SLAGLE.—In Minneapolis, on Monday, August 27th, Dr. E. G. Slagle.

SWAYNE.—In Philadelphia, on Monday, August 27th, Dr. William P. Swayne, aged eighty-one years.

WILSON.—In Andrews, North Carolina, on Friday, August 31st, Dr. James Donald Wilson.

WOOLFOLK.—In Lahore, Virginia, on Saturday, August 25th, Dr. Ernest Woolfolk.

New York Medical Journal

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Original Communications.

PROSTATECTOMY FOR PROSTATIC HYPERTROPHY, WITH SPECIAL REFERENCE TO THE WORK DONE BY AMERICAN SURGEONS.*

BY RAMON GUITERAS, M. D.,
New York.

Six years ago, at the Thirteenth International Medical Congress in Paris, I delivered an address on *The Present Status of the Treatment of Prostatic Hypertrophy in the United States*, in which I said in closing: "I consider the operation of prostatectomy still in its infancy—in the same position that hysterectomy was some years ago; but I have no doubt that some day it will be simplified, and it behooves all surgeons interested in this line of work to try to improve the technique of the procedure."

At the present date, judging from the opinions of my colleagues regarding prostatectomies, and the satisfaction that I personally feel with my own technique, I am inclined to believe that the time has arrived when the operation of prostatectomy has been so simplified that it is as easy to perform as hysterectomy. The simplification depends upon a better exposure of the bladder and prostate, obtained by changing the patient's position and resorting to the use of the rectal bag.

From the first, prostatectomy has claimed the attention of the American surgeons, who, in urinary surgery as well as in all other branches of the art, base their operative procedures on what impresses them as the best operation of whatsoever surgeon who may be working in the field.

No sooner had McGill, in 1886, started in his work of suprapubic prostatectomy by removing the gland, or as much of it as he could in fragments or in lobes than Belfield, of Chicago, took up the operation and modified it by performing a perineal urethrotomy, or boutonnière operation, to assist in the drainage. Belfield's operation for drainage was accepted by our surgeons, and is still followed by most of them who perform the suprapubic operation; but time has proved that this is no longer necessary, and it has been discarded by a number of us as an uncalled for additional operative procedure.

While suprapubic or abdominal prostatectomies were being resorted to by most surgeons, Nicoll began to perform the operation from below by a so called perineal method. His operation consisted in doing a suprapubic cystotomy for the purpose of enabling him to make counterpressure upon the gland from above, and then performing the remainder of his operation from below through the perinæum. The perineal part consisted in placing the patient in the lithotomy position, and then making a T shaped incision in the perinæum down to the prostate, which was pushed into the perineal wound by the fingers in the bladder. He then cut through the external capsule of the gland, and enucleated it from between the urethra and the external capsule with his forefinger, assisted, perhaps, by a Volkmann spoon or a periosteum elevator, without opening either the urethra or the bladder. The drainage after this was by the suprapubic route. If one considers this operation carefully, he will see that, with the exception of the suprapubic cystotomy, it is practically the same way of removing the prostate that is practised by the French surgeons to-day.

Alexander modified this operation by cutting into the membranous urethra through the perinæum and continuing his incision to the apex of the prostate, until he could insert his forefinger between the gland and the external capsule, after which he performed his enucleation. He drained from both above and below.

Goodfellow, of San Francisco, and Wishard, of Indianapolis, were the first to enucleate the gland through the prostatic urethra without opening the bladder, a great advance in perineal prostatic surgery.

Thus you will see that in the early '90's the prostate had been successfully removed (1) by the suprapubic route with drainage only from above, and (2) by the same route with additional drainage from below; (3) by the perineal route without opening the urethra, making counterpressure through the bladder, with bladder drainage suprapubically; (4) by the perineal route, opening the urethra, counterpressure being made through the bladder, and with drainage above and below; (5) by the perineal route, after a perineal urethrotomy, no suprapubic cystotomy for counterpressure being made and drainage from below only.

A new era was then established in prostatic surgery, and a new impulse given to it when pressure was exerted upon the gland to facilitate its removal. This was brought about in two ways, the "push" and the "pull." Fuller, of

* Read before the International Medical Congress at Lisbon, April 25, 1906.

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New York, was the first surgeon to resort to the "push," by means of pressure on the perinæum with his fist, to bring the prostate into better position to be enucleated by the forefinger of the other hand in the bladder after a suprapubic cystotomy. He drained from above and below.

Syms, of New York, on the other hand, resorted to the "pull" in performing perineal prostatectomy by the Goodfellow-Wishard method. After he had performed his perineal urethrotomy he inserted a tube into the bladder with a rubber balloon on the end. This was then inflated with water and the tube clamped and pulled upon by an assistant, thus making downward pressure on the prostate during the enucleation, drainage from below only.

Metal bladder depressors have since been devised by Gouley, Guiteras, Murphy, Lydston, Ferguson, Young, and others, which are simpler, stronger, and more reliable than the Syms balloon.

The Author's Method of Pressure, the "Rectovesical Operation."—I was at this time especially interested in suprapubic prostatic operations, and being on the same hospital service with Dr. Fuller, I watched with great interest his prostatic work. I followed closely his technique, with the exception that I exerted pressure on the gland by means of the fore and middle fingers of the left hand in the rectum, instead of by the fist in the perinæum. I immediately saw the superior advantage of this method, and in my address before the Thirteenth International Medical Congress in Paris, in August, 1900, already referred to, I outlined this method of prostatectomy, which was described in abstract in the transactions of the congress, and in full in the *New York Medical Journal* of December 8, 1900. The operation was again described in the *Transactions of the Pan-American Congress in Havana, Cuba*, February 5, 1901; at the meeting of the American Medical Association in St. Paul, June, 1901, and published in the transactions of the *Surgical Section*, and in the *Philadelphia Medical Journal* of April 20, 1901.

The steps of the operation were briefly as follows: "A suprapublic cystotomy is performed. The forefinger of the right hand is inserted into the bladder, and two fingers of the left hand into the rectum, and the prostate palpated. A pair of pointed curved scissors are now introduced into the bladder, the points inserted through the bladder wall covering the base of one prostatic lobe, and then opened, leaving a tear, and then a similar tear is made over the other lobe; or else this incision is made transversely over the base of the gland in a way that would cut through the bladder wall covering both the two lateral lobes or all three lobes.

"The tip of the right forefinger is then inserted into one of these incisions, and worms its way between the gland and the external capsule, thus enucleating one lateral lobe and then the other. The median lobe may come away with one of the lateral lobes, or have to be removed independently. Drainage is secured suprapubically, or combined from above and below after a perineal cystotomy."

I was at the time perfectly satisfied with this operation, which was taken up by many surgeons both at home and abroad, among others, Freyer, of London, and Deaver, of Philadelphia, who have performed it many times.

My results for a while were excellent, as I operated principally on chosen cases, using the Bottini operation for the others. Gradually, however, I began to perform fewer Bottini operations and more prostatectomies, and consequently with an increased mortality.

My colleagues who were removing the gland through the perinæum seemed to be quite sure that their method was simpler, easier to perform, with better results and less mortality. I therefore concluded that for the welfare of my patients I should turn to the operation which gave the best statistics, and I began to perform perineal prostatectomies. I saw no reason for opening the bladder suprapubically simply for the sake of making counterpressure, as I felt that sufficiently good pressure could be made by cutting through the abdominal wall suprapubically and making pressure on the gland in Retzius's space, and I consequently began to operate in this way most satisfactorily (*Philadelphia Medical Journal*, April 20, 1901).

I soon found, however, that many surgeons were performing the Goodfellow operation, which required no suprapubic incision, with good results. I accordingly tried this operation a number of times, and was very much pleased with its simplicity; but felt that Syms's method of traction by the rubber balloon was certainly an improvement upon it. I began to experiment with metal depressors, and made one which seemed to answer all the requirements. It was a sound flattened below anteroposteriorly and having a sharp backward curve at the end. It could be inserted through the perineal wound into the bladder, and turned about so that pressure could be made on any part of the gland which was being enucleated, thus pressing it down against the enucleating finger.

I found that in this narrow space it was often difficult to withdraw a lobe after having freed it, as it slipped above the enucleating finger, and I devised a pair of forceps for grasping the lobe, the forceps being held in one hand, while the forefinger of the other hand was passed up beyond the blades of the forceps and separated the lobe at the point of adhesion. These instruments I presented before the Academy of Medicine in January, 1902, and a description of them, with cuts, was published at the time in the *New York Medical Journal*. Since then I have given the forceps the perineal curve. (Meeting of the American Urological Association, New Orleans, May, 1903.)

I continued doing perineal prostatectomies until I came to the conclusion that, while certain prostates could be removed more easily and safely by the perineal route than by the suprapubic, others could not, and that with an equally good technique much better results could be obtained by the suprapubic route. In other words, I felt that while the perineal route was safer, the results, the aim of the operation, were not so good, and I believed that if I had spent as much time improving my technique in the suprapubic operation as I had in working out my perineal pro-

FIG. 1.—There is nothing unusual in this figure. It simply shows a man lying flat, in which position the rectal bag and catheter are inserted, and from ten to twenty ounces of boric acid solution introduced into the bladder.

cedure, I could have improved my suprapubic prostatectomy materially. I also felt that the glowing reports of the perineal operations had had the effect of booming a newer operation, which was supposed to be so much simpler than the suprapubic, that any surgeon or practitioner felt that he could perform it. The observer saw operations performed, which consisted simply of making an incision into the perineal urethra, incising the prostatic part of the canal, inserting the forefinger into the incision, wriggling it about for a while, and hooking out pieces of gland of varying sizes, inserting a perineal tube into the bladder, allowing the wound to heal, and reporting a successful perineal operation, inasmuch as the patient had had an operative recovery. The period of relief following many of these cases was due to the rest in bed, drainage, bladder washing, and urinary antiseptics and antispasmodics. But after the patient was up and about, in some cases urinary dribbling or fistulæ were noticed, while there was a return of frequent urination and tenesmus. Many of these patients came to my clinic seeking relief, and I began to think that the reports of the perineal operations were too rosy, and to consider the advisability of studying prostatic cases more carefully, with the idea of not resorting to any one particular method of prostatectomy, and of improving the details of my technique generally. I concluded that the prostates to be removed by the perineal route were those that are situated low down in thin individuals, which appear much enlarged on rectal palpation. All others are better removed suprapubically, as well as all cases in which a vesical calculus is present.

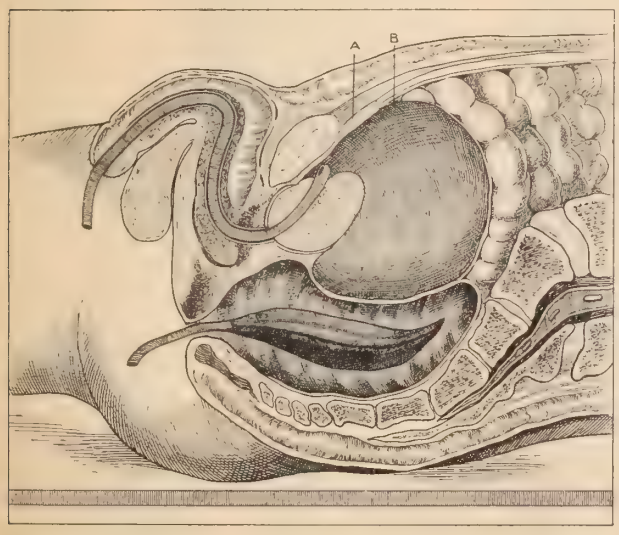

FIG. 2.—This shows a vertical section of the body, and the way the bladder would appear if it contained sufficient fluid to fill it. The space between A and B shows the distance to which the reflection of peritonæum has been carried above the symphysis pubis. The catheter is seen introduced into the bladder, and at the time of the operation it is clamped. The rectal bag lies collapsed in the rectum.

The ideal cases for suprapubic prostatectomy are those in which there is a large and increasing amount of residual urine, due to a prostate that is growing into the bladder. These glands may not feel much enlarged per rectum, but usually have a "high up feel." Such prostates in enlarging grow upwards along the urethra into the bladder, and the posterior part of the base of the gland is so much more hypertrophied than the anterior that a hill is formed, on the anterior slant of which is the internal urinary meatus, while posteriorly there is a postprostatic vesical pouch.

The Return to the Suprapubic Method.—On my return to the suprapubic method I performed the same operation that I formerly had, but I tried to arrange the details of my work in such a way that my field of operation would always be exposed to a sufficient degree to clearly see and show the steps of the operation. In order to accomplish this certain details were necessary, i. e., to have a sufficiently large incision in the abdominal wall; to have the largest possible opening in the bladder, without injuring the peritonæum; to have the bladder wall well retracted; to have the patient in such a position that any accumulation of blood would not interfere with the view of the prostate. I found in working out these points under consideration that a Trendelenburg table on which the patient's position could be changed to suit the operator, the rectal bag for pushing up the peritonæum, and the use of small abdominal pads in the upper wall of the bladder to soak up leakage of blood and solutions are of

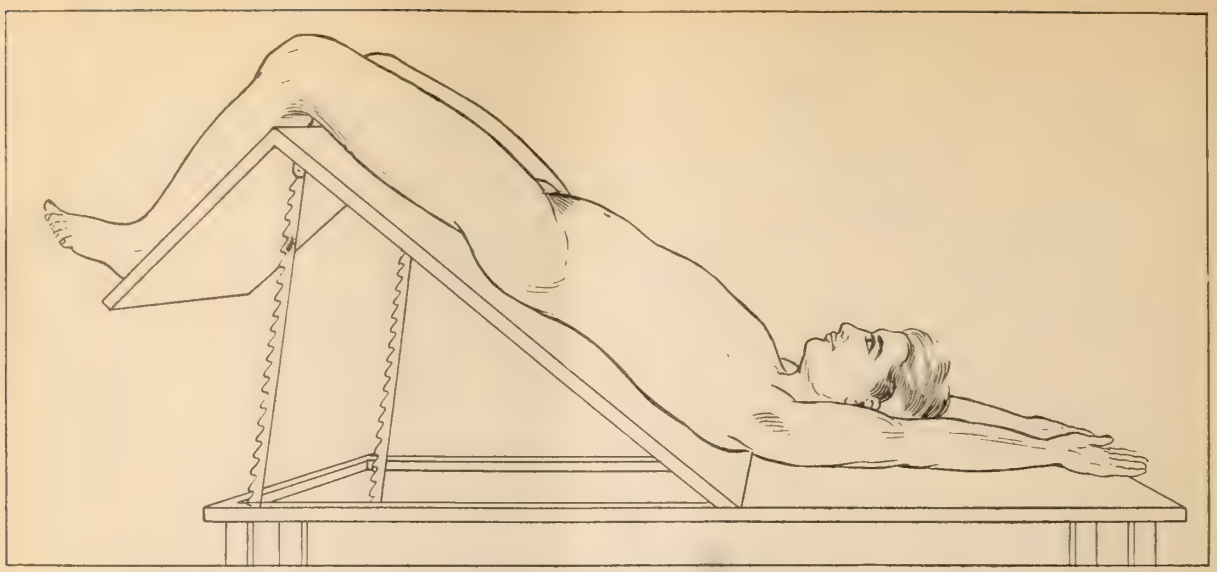

FIG. 3.—The patient is now placed in the Trendelenburg position, and from eight to ten ounces of fluid put into the rectal bag, after which the tube leading into it is clamped.

the greatest convenience, and freer use of bullet and prostatic forceps.

Technique.—The patient is brought in lying flat upon his back on a Trendelenburg table (Fig. 1) A rectal bag or colpeurynter is inserted into the rectum and a catheter into the urethra. The bladder is filled with boric acid solution, from ten to twenty ounces being introduced by a piston syringe (Fig. 2).

The patient is then put in the full Trendelenburg position (Fig. 3), after which about eight to ten ounces of fluid are injected into the rectal bag (Fig. 4). In thin subjects the dilated bladder can then be seen. An incision about five inches long is made from the symphysis pubis upward in the median line, through the skin, fascia, and muscle (Fig. 5). The peritonæum is stripped up from the bladder as far as possible, and the bladder wall is caught by bullet forceps at this point, and an incision is then made from the forceps to the pubes (Fig. 6). This incision should be as long as possible. A traction suture is inserted on the side of the incision. The bladder should be sponged out and retracted on four sides, and the rectal bag removed.

The prostate should then be grasped by means

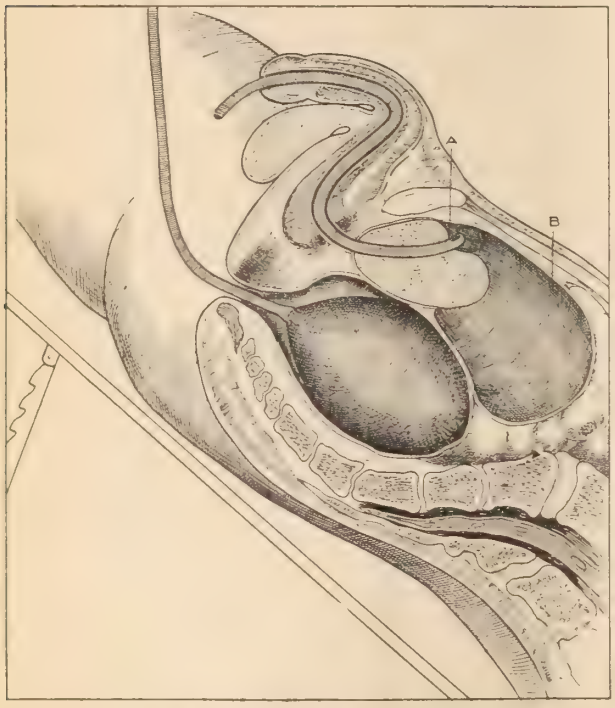

FIG. 4.—The shape of the bladder is seen to be very much changed by the pressure of the rectal bag against it from below. It is shown to be elongated and flattened. The space AB, representing the distance of the peritonæum above the pubes, is seen to be much greater than in the preceding vertical section. In this position an incision four to five inches in length, is made in the median line down to the peritonæum and bladder, from the pubes up toward the umbilicus. The space AB of the bladder wall is clearly seen, as is also the attachment of the peritoneal fold at B. This is pushed still farther up, and the bladder wall grasped by a bullet forceps at the highest point at which it is uncovered by peritonæum

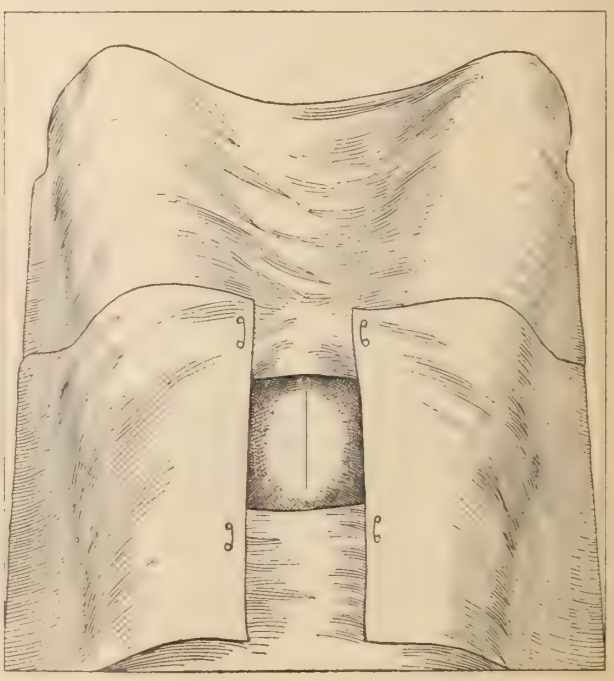

FIG. 5.—This shows the body and extremities in the Trendelenburg position as in the last picture, but seen from above The body is covered by an operating sheet and towels. The field of operation from the pubes nearly to the umbilicus can be seen, in the centre of which is the line of incision.

of bullet forceps, one blade being in the urethra and the other behind the prostatic base in the median line. Two fingers of the gloved left hand are now inserted into the rectum, and the prostate pushed toward the incision in the bladder. At this time, with the bladder retracted, the prostate held upward from above by the bullet forceps, and pushed up from the rectum by the fingers of the other hand, the best possible view of the gland can be obtained, and I have at times been able to bring the gland out to such a degree that part of it has been beyond the surface of the abdominal wall. The position of the patient keeps the prostatic field clear at this time, as if there is any bleeding, the blood will gravitate away from it and be absorbed by the gauze pad in the upper part of the bladder.

A vertical incision can now be made over each lateral lobe of the gland; or a transverse incision can be made posteriorly, midway between the internal meatus and the posterior surface of the base. (Fig. 7.)

The patient should then be lowered to a half Trendelenburg position (Fig. 8), as it is easier to enucleate in that position than in a full Trendelenburg position. A small abdominal pad should be kept in the upper part of the bladder to prevent its prolapse downward and to absorb any blood present.

Insert the right forefinger into one of the incisions made through the bladder wall over the base of the prostate (Fig. 7), and enucleate one lateral lobe and then the other through the remaining incision (Fig. 9). Enucleate the middle lobe, if it does not come away with one of the laterals, or any remaining pieces. If any pieces are adherent, they can be dissected away with curved scissors. In case a lobe is held at any point grasp it with the prostatic forceps (Fig. 10) and resort to gentle traction while it is being freed.

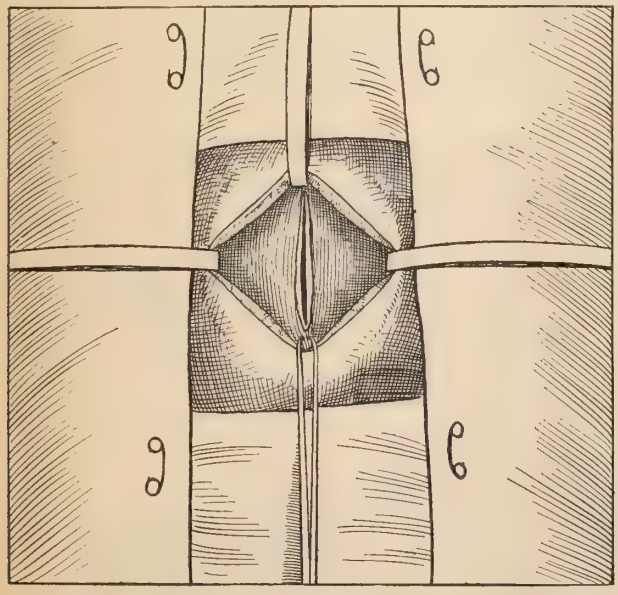

Fig. 6.—This shows the incision down to the bladder, the wall of which just below the peritonæum is held by the bullet forceps, while the walls of the opening are held below and on the sides by retractors. The incision is seen in the bladder from the bullet forceps down to the pubes. The fluid now escapes from the bladder, and the rectal bag is emptied and withdrawn.

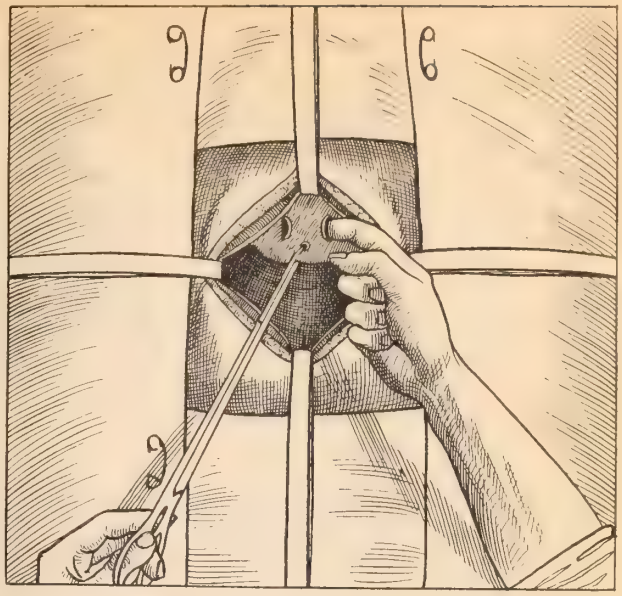

Fig. 7.—The bladder walls are now retracted above, below, and on either side, and the prostate grasped by the bullet forceps, the point of one blade being in the prostatic urethra and the other holding the posterior wall of the base of the gland. The incisions are made through the bladder wall over the base of the gland on either side. The fore and middle fingers of the gloved left hand are introduced into the rectum, to make counter pressure on the gland from below, while the forefinger of the right hand is inserted in the incision over the base of the right lobe of the gland, and enters the space between the bladder wall and the capsula propria of the prostate. The enucleating hand and finger should be on the left side of the patient, and the bullet forceps on the right side.

Insert the largest possible woven *coudé* catheter (25 to 30 French), with two eyes, into the bladder through the urethra, and a soft rubber catheter (38 to 40 French) into the bladder through the suprapubic incision, in such a way that the ends of the two tubes are in contact with one another. I sometimes attach them with a piece of fine catgut.

The bladder and fascia are then closed with chromic catgut interrupted sutures down to the tube, and the skin by plain gut, a thin piece of gauze being left down to the bladder wall along the side of the tube. The tube is attached to the skin by a plain gut suture. The bladder is drained by syphon through the suprapubic tube and the lower tube is corked. (Fig. 11.)

The bladder is flushed out from above or below three times a day, or oftener if the drainage is not good. The fluid runs in through the tube above and out from the tube below, or vice versa, to suit the case. When the urine draining away ceases to be bloody the suprapubic tube is removed, while the urethral catheter remains *à demeure* until the suprapubic wound is closed. A soft rubber catheter of a smaller size can be substituted for the large woven catheter after a few days. The suprapubic catheter usually remains in for two to four days, and the infrapubic tube for two weeks. The bladder should be washed out each day from below with a boric acid solution and once with a 1 to 4,000 silver nitrate solution. After the suprapubic opening in the bladder has healed, as shown by the urine no longer leaking away, the urethral catheter can be plugged and the plug withdrawn every two hours,

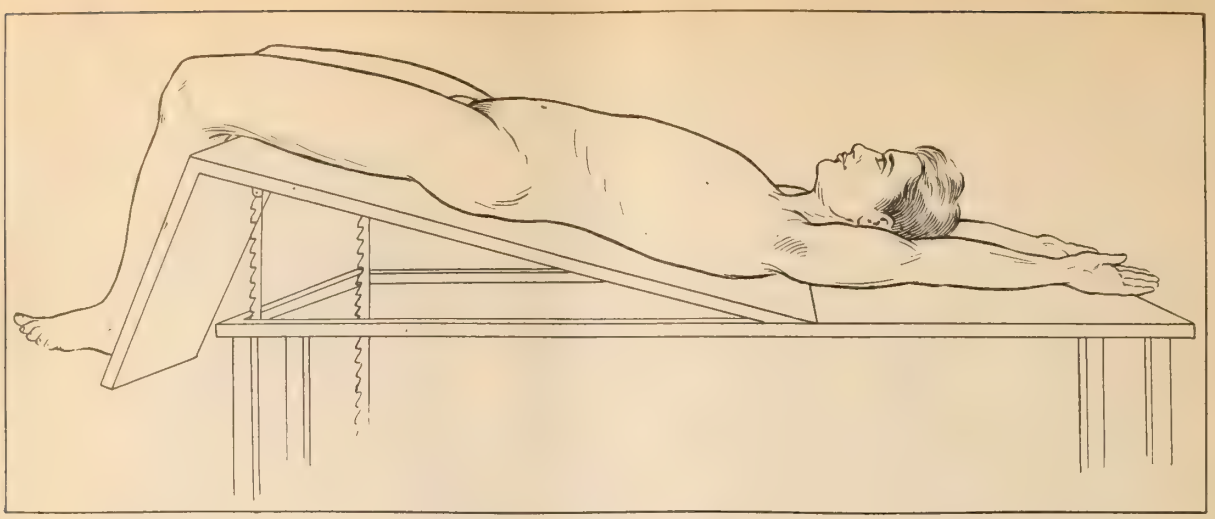

FIG. 8.—The patient is now seen lowered to a half Trendelenburg position, in which the enucleation is performed.

or as often as necessary to relieve the desire to urinate.

The patient is on a milk diet for the first four days, and after this is put on a regular diet if there are no complications. Hexamethylenamine (urotropin or uritone) and large quantities of water are given internally. The patient is usually out of bed in two weeks, and out of the hospital in three weeks, although he may be up and about

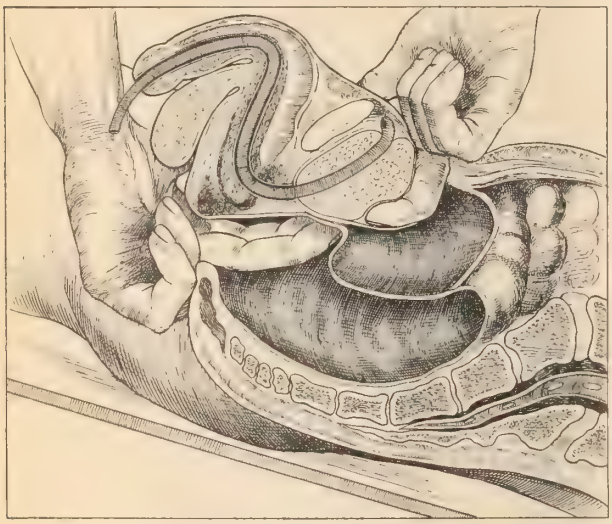

FIG. 9.—This shows an anteroposterior vertical section of the body. The fore and middle fingers of the left hand are in the rectum, pushing the gland up, while the forefinger of the right hand, which has worked its way between the bladder wall and the prostate, is now about to enter between the capsula propria and the external capsule of the gland. When the finger reaches the apex of the lobe it will hook around and force it up and out of the incision, into which the tip of the finger is seen to enter in Fig. 7. A pad is kept in the upper part of the bladder during the operation to soak up the leakage, a retractor is held over this to prevent the intestines from pushing down against the bladder and shoving its wall into the field of operation.

his room a few days after the operation. I do not consider this good surgery, however, as stitch abscesses and ventral hernia are more liable to occur.

It is in my opinion a very important point to use a retained urethral catheter after the operation, as the drainage from it is as efficient as from a perineal tube through a urethrotomy incision,

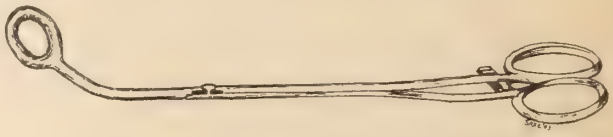

FIG. 10.—Prostatic forceps for removing the lobes of the gland after they are freed from the external capsule and the urethra.

and the space left after the removal of the prostate has a good sized object in the prostatic urethra around which to fill in during the process of healing.

In closing I will say that suprapubic prostatectomy holds the same relation to the perineal operation that abdominal hysterectomy does to the vaginal, in that it is a better surgical procedure; that the changing of the patient's position simplifies the different steps of the operation; and that in most cases suprapubic prostatectomy is preferable to the perineal on account of the ultimate operative results, the purpose for which the operation is performed. Practitioners ask: Then why advocate an operation in which the mortality is greater than by the perineal route? The answer is, Why are prostatics operated upon?

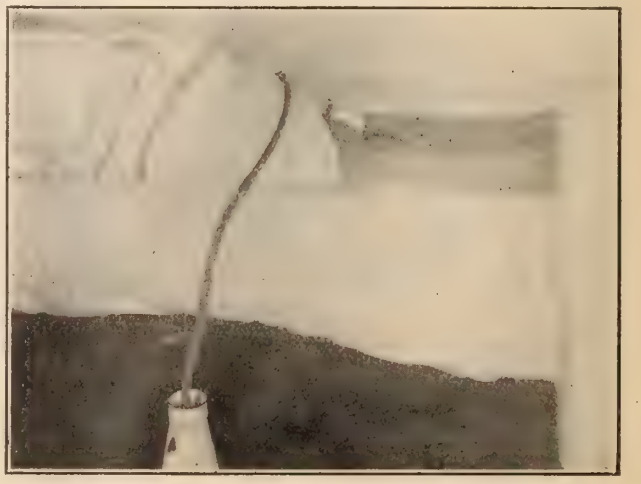

FIG. 11.—Showing drainage after a suprapubic prostatectomy. The tube inserted in the bladder suprapubically is siphoning the urine into the urinal at the side of the bed. The other tube is inserted through the urethra. It is a large woven catheter with two eyes.

It is to relieve them of certain annoying symptoms and dangerous complications, and to restore to them as nearly as possible normal spontaneous urination. These results are best obtained by the suprapubic method. I have arrived at these conclusions after fifteen years of operating on prostatic cases, during which time I have investigated very carefully both the perineal and the suprapubic operations.

75 West Fifty-fifth Street.

CHOLECYSTOSTOMY. AN IMPROVED TECHNIQUE.*

By Hugh Crouse, M. D.,
El Paso, Texas.

Various methods have been devised for meeting the obstacles of a retracted or densely adherent gallbladder, which is deemed better surgery to drain. Mayo Robson has formulated three technics for this condition, each of which I believe to be faulty in part.

First.—Cuffing back the transversalis fascia and peritonæum, these two being sewn to the fundus of the unincised gallbladder, forming by such a peritoneal fascial canal. This canal is promptly packed with gauze. The bladder unincised for forty-eight to seventy-two hours.

Second.—Taking the right border of the omentum, suturing it to the peritonæum and gallbladder, incising immediately the gallbladder and draining. By this method walling about the tube entering the gallbladder an omental canal.

Third.—Purse string retaining the drainage tube in the gallbladder, packing gauze about fundus and tube, passing the gauze through the abdominal incision, next making a secondary stab wound, and through it gauze draining the renal hepatic fossæ.

These three methods each have faults. The first necessitates a forty-eight hour delay before incising the gallbladder, this delay permitting perfect adhesions to occur. The difficulty of recognizing gallbladder tissue, even though marked with a central guide suture, is such as to induce hesitation on the part of the surgeon attempting it. Next, the necessity of a second surgical intervention leaves an impression upon the patient of primary operative incompleteness. Further, the adhesive band thus created at times necessitates intervention months later to relieve the adhesions on account of pain.

The second method, the utilization of the right omental border, has the fault of creating an insecure canal, brings about the same adhesive errors of the first, and, to my mind, utilizes a tissue inherently poor for channel purposes on account of its liability to infection, and as a result of which infection fat necrosis is liable to develop.

The third method suggests faulty surgery through the apprehensive need of a secondary drain, leaves the probability when the tube is removed, of permitting an unadherent space to remain between gallbladder and abdominal wall, thus allowing the still open bladder to drain into the free abdominal cavity. This method, to my mind, is particularly faulty and unsurgical.

As a substitute for these three faulty methods, I have the pleasure of presenting to you the following technics for the same conditions, namely, the draining of an adherent or retracted gallbladder, the indications of the Robson methods. A gallbladder so diseased demands drainage not alone to rectify the cholecystitis present, but for the chronic cholecystitic secondary troubles, viz., cholangitis and chronic pancreatitis, two conditions which nearly always accompany cholecystitis, and which conditions can be rectified alone through the use of free drainage, continued for quite a time. Dead room work upon ten subjects convinced me that the subsequent technics had tenable features.

The usual Kocher, Bevan, or Mayo Robson

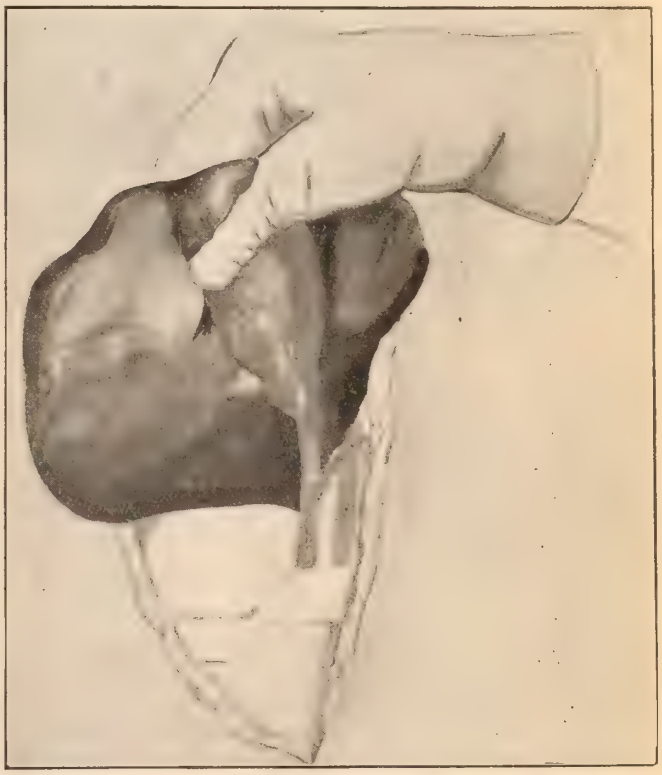

Fig. 1 (after Moynihan).

incision having been made through the abdominal wall, the hepatic gastric space is thoroughly investigated, the duodenal hepatic peritonæum incised carefully, if necessary for common, cystic, and hepatic duct inspection and palpation, each of these shown to be free of calculi, the gastrohepatic and nephrohepatic spaces, together with the transverse colon, are carefully walled off with gauze. Seizing the fundus of the untapped gallbladder with T forceps, retraction is made toward the gastric area. While the liver is drawn up, out, and over the costal margin after the Moynihan method (see Fig 1 and 2). The gauze covered index finger of the right hand is pressed in between the marginal strips of the cystic hepatic peritonæum, identically as though starting a cholecystectomy from above. Should the tissue be unduly resistent or marked adhesions be present between gallbladder and liver, a dull, pointed, curved pair of scissors is used to

* Read before the Surgical Section of the International Medical Association of Mexico, meeting held at Tonreon, Coahuila, Mexico, January 23, 24, 25, 1906.

FIG. 2.

snip the intervening tissue sufficiently to permit gauze dissection of the gallbladder from the liver in the middle space, carefully guarding the marginal strips, until the central freeing of the cystic sac has been carried down to the first S curve of the cystic duct. Just below this point it is known that the cystic blood and nerve supply commence bifurcating, thus encompassing the bladder in a network of arterial, venous, nervous, and lymphatic structures (see Fig. 3). The moment freedom exists of the gallbladder down to and encroaching upon this duct curve, the marginal retaining strips of cystic hepatic peritonæum are snipped, hugging closely, constantly, the bladder down to the above mentioned freed point of duct.

Just below the superior edge of peritoneal strips, snipping permits bleeding from arterial twigs, one upon each side. Fine catgut ligation is necessary. The gallbladder is now free. The cystic peritonæum is whipped together with fine catgut, thus eliminating a raw surface, effectively checking oozing if any exists. These two steps completed, a perfectly sterilized 10 inches broad, 20 inches long, thick rubber dental damming strip is punctured with a large sized leather punch, in order that an absolutely round puncture may be created, thus avoiding tearing, and by careful, cooperative stretching on part of surgeon and assistant, the fundus of the distended gallbladder is drawn through the puncture by a catch pair of thumb forceps. The dam is carefully cuffed down constantly, automatically, closely snugging even the cystic duct. (See Fig. 4.) Thus, the gallbladder and upper portion of duct are extraperitoneal, so created by rubber reinforcement of the usual gauze packing of the fossæ.

Next, by means of approximating tenaculum forceps, the borders of the damming are caught and held to the four corners or margins of the wound, as in Fig. 4. The length permits an apron extension of the rubber over the right loin. The patient is turned to the right side, the fundus of the gallbladder incised, the interior digitally explored, stones removed, and the cavity flushed with a saline solution (see Fig. 5).

Next, a three eighth inch drainage tube is inserted, fastened in by one of the methods shown in Fig. 6, the gallbladder carefully cleansed, the tube and fundus of gallbladder caught in a T forceps, thus closing effectually each simultaneously. The dam is next split and removed, the gauze in the gastrohepatic and nephrohepatic spaces removed, the fossæ mopped, and the peritonæum closed about the fundus of the gallbladder by the usual whipping method. The superior catgut suture catching the right border of gallbladder at three points, down to its inferior surface, the inferior peritonæum catgut whipping suture carried up to the superior, tied, then continued about left margin of fundus, approximating peritonæum and fascia to gallbladder up to the superior suture, and there tied again. This completes the operation.

FIG. 3 (after Moynihan).

Fig. 4.

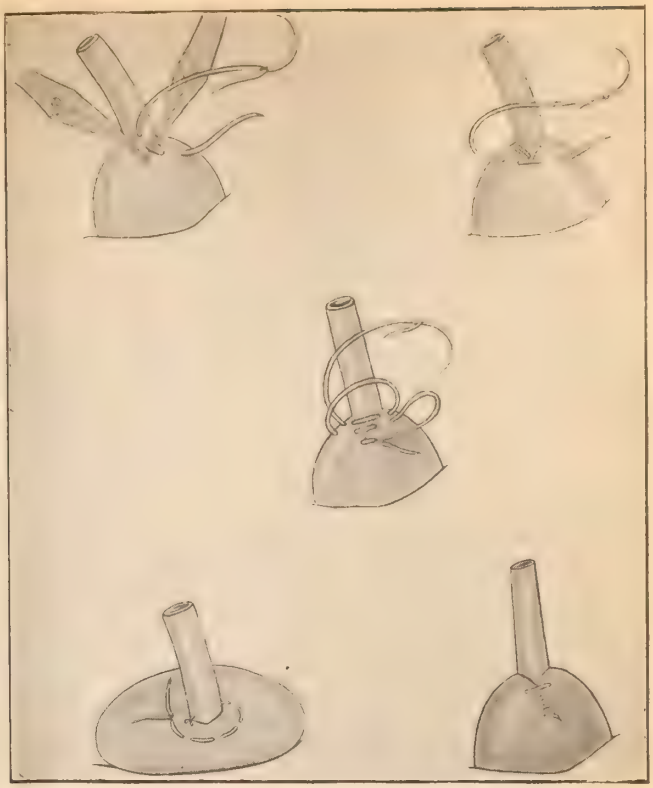

Fig. 6 (after Moynihan).

The only subsequent suggestion is the use of a rubber condom along the Graham plan, that is, slipping a condom over the end of drainage tube, by so doing forming practically an artificial gallbladder. This can be removed as necessary by the nurse, emptied, cleaned, and reapplied.

The points of improvement of this technics over either or all of the Robson plans are as follows:

First.—It permits the delivery of the fundus of the gallbladder through the entire abdominal wall, unless the subject is inordinately fleshy.

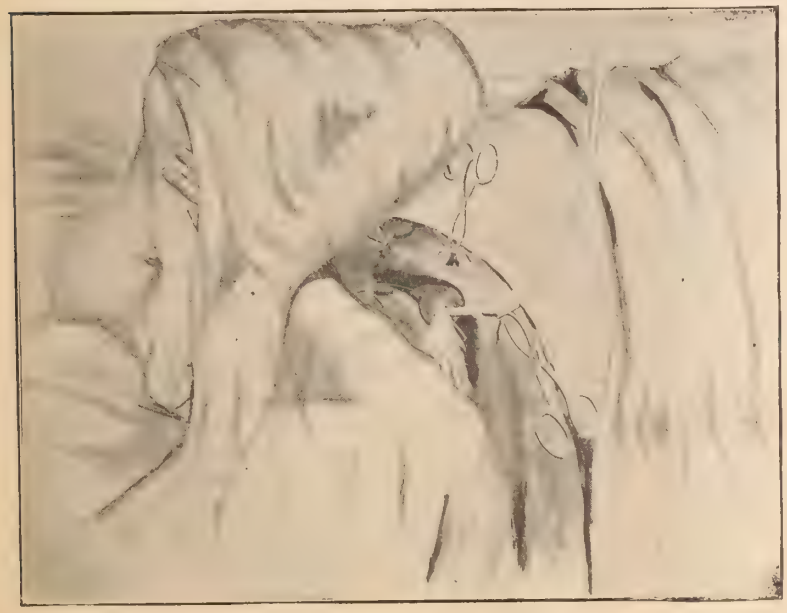

Fig. 5.

Second.—Pericholecystitis frequently binds not alone the gallbladder into a constricted position, but drags upon the S curved cystic duct to the extent of at times inducing all of the simulating symptoms of calculi and furthering their cystic development. The method above described removes such restrictions, straightens out the cystic duct, thus favoring more perfect drainage of not alone the cystic, but common and hepatic ducts as well.

Third.—It liberates the gallbladder from the usual strain of respiratorily induced hepatic movements, fruitful sources of subsequent pains.

Fourth.—The gallbladder's new position does not lay the patient liable to hernial development between liver and gallbladder, owing to the usual anatomical restraint of mesocolon attachments of duodenal hepatic ligament and gastric position.

Fifth.—It permits surgical cleanliness, digital exploration, and immediate drain of gallbladder.

Sixth.—A perfectly unrestrained approximation between gallbladder and parietal surfaces are permitted.

Seventh.—It permits all surgical steps to be safely made at one sitting, gives a thoroughness and completeness to the operation not experienced while following the Robson methods.

In conclusion: Proof of the practicability of the operation has been secured by successfully utilizing this technics upon two subjects, upon

whom operation was being done for cholelithiasis, and in whom pathological conditions existed demanding either it or one of the Robson methods being adopted.

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SMALL FREQUENT MEALS IN THE TREATMENT OF CERTAIN BILIARY AFFECTIONS.

BY CHARLES HERRMAN, M. D.,
New York.

A member of his own family having had a biliary fistula during the last five years, the writer had an unusual opportunity of observing the effect which the ingestion of food had on the relative quantity of bile, which flowed into the duodenum by way of the common bile duct, and the amount which flowed into the cystic duct and out through the fistula.

The patient was operated upon by Dr. Lilienthal in May, 1901, for an acute cholecystitis. The anæsthetic was taken so badly that a cholecystectomy could not be performed, and the most rapid method of drainage had to be resorted to. A permanent biliary fistula resulted. On the average twenty-six drachms of bile escaped daily through the fistula, while by far the greater part of the bile secreted flowed unobstructed through the common bile duct into the duodenum.

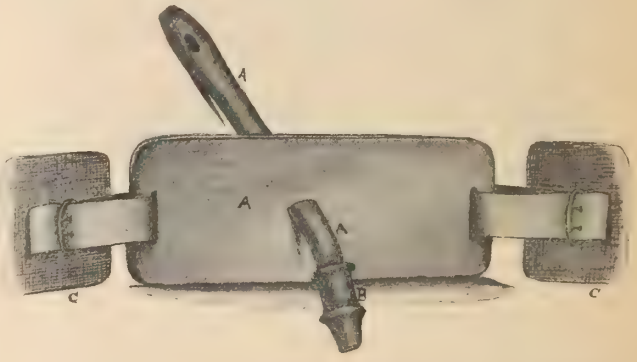
Several facts were noted. First, the amount of fistulous bile was greater during the night than during the day, in the proportion of about two to one. Second, when a meal was taken late at night there was very much less fistulous bile, the daily amount of bile secreted remaining approximately the same. These facts indicated that the ingestion of food had a decided effect on the amount of bile which passed into the duodenum. It was further noted that fruit and other substances which increased intestinal peristalsis, also diminished the amount of fistulous bile. Alcohol seemed to act unfavorably by increasing the amount which escaped. The regular habit of tea drinking gave a disagreeable odor to the bile.

Bile is secreted constantly. In the interval between meals it is stored up in the gallbladder. When food is taken, the products of gastric digestion passing into the duodenum cause a relaxation of the sphincter of Oddi at the outlet of the common bile duct, and a stimulation of the muscular wall of the gallbladder. A profuse flow of bile into the duodenum results. If the last meal is taken at seven o'clock in the evening, at eleven o'clock it has usually passed entirely into the small intestine, and from that time until seven o'clock the following morning the bile secreted is for the most part stored up in the gallbladder, or if there is a fistula, the greater part escapes through that opening. If a meal is taken at eleven or twelve o'clock, its digestion requires two or three hours; during this time bile flows into the duodenum, and so much less escapes through the fistula. During the day the intervals between meals are shorter, so that there is less bile stored in the gallbladder, and therefore less escapes through the fistula.

Jaboulay and Patel have applied these principles in the treatment of biliary fistula in order to hasten the closure of the fistula. By adding a small meal at night, the writer has succeeded in reducing the amount of fistulous bile from twenty-six to six drachms, the greater part of which is really mucoid material from the living mucous membrane. The same principles have also guided Dufourt in the treatment of cholelithiasis. According to this author, the indications are:

1. To avoid or lessen infection of the biliary passages.
2. To maintain a normal composition of the bile.
3. To provoke an abundant secretion of bile.
4. To obtain as constant a biliary excretion as possible.

It occurred to the writer that the same method might be applied with advantage in the treatment of catarrhal jaundice. It is a noteworthy fact that this condition is extremely rare in infants under one year of age. Holt has never seen a case. Henoch in a vast experience only two cases. Flesch states that the records of the Stephanic Hospital at Budapest for the last ten years show only one such case. This infrequency is all the more surprising in view



A. Tube and plate. *B.* Outer detachable piece to which the bag is attached. *C.* Band fastened around the abdomen keeping the tube in place.

of the fact that gastrointestinal disturbance and infection are not at all uncommon at this age. It is a well known fact that the regular and frequent flow of bile into the duodenum is one of the most important factors in the prevention of infection of the biliary passages. It is not unlikely that the ingestion by infants of milk or some substitute, every two or three hours during the day and once or twice during the night, accounts to some extent at least for this apparent immunity to catarrhal jaundice.

In the treatment of catarrhal jaundice the object should be not to increase the secretion of bile, but to facilitate its flow into the duodenum. Many of the drugs which are given with the view to stimulating such secretion (calomel, rhubarb) have been shown by experiment to have little or no cholagogue action, their favorable effect being due primarily to an increase in intestinal peristalsis. Rectal injections of cold water probably act in a similar way. The principal object being to facilitate the flow of bile through the common bile duct, and to stimulate the gallbladder to contraction, this can best be accomplished by the regular and frequent ingestion of food. It is the products of gastric digestion which passing over the ampulla of Vater cause the relaxation of its sphincter. Certain substances—albuminoids, yellow of egg, extractives, etc.—are known to stimulate biliary secretions; but the character of the food seems to be of less importance than the fact that it is taken at comparatively short intervals.

Frequent small meals are indicated. Of course, in those cases in which there are gastric disturbances indigestible food, more especially fats, are to be avoided, but if the patient has a fair appetite, as is not infrequently the case, there is no reason why he should not take eggs, milk, meat, and vegetables. The treatment therefore consists in giving five or six small meals instead of the usual three daily, an extra one being introduced at ten o'clock in the morning, at four o'clock in the afternoon, and at eleven o'clock at night. These small meals consist of milk, eggs, broth, crackers or bread. If the patient awakes during the night a glass of milk may be taken. The bowels are to be kept open by mild laxatives. A daily rectal injection of cold water is sometimes very efficacious. Light exercises, especially such as bring into play the diaphragm and the abdominal muscles, are helpful.

In this way the writer has treated three cases of catarrhal jaundice in children with surprisingly good results. Within five days the urine and stools resumed their normal appearance and in from ten days to two weeks the jaundice had disappeared.

The Cause of Jaundice Following Emotional Shock.—For a long time it has been known that jaundice may follow a fit of anger or a severe emotional shock. The explanation most commonly accepted is that this is caused by a spastic contraction of the common bile duct. Why this should occur and persist for a sufficient length of time to cause an obstructive jaundice has not been satisfactorily explained. It seems more probable that in some cases at least the jaundice is primarily of gastric origin. It has been experimentally shown that emotional shock, fear, anxiety, anger, etc., cause a cessation of gastric and intestinal peristalsis, and a diminished secretion of gastric juice. The result of emotional shock would be that the food would remain in the stomach for a much longer time and, not passing into the duodenum, the flow of bile into the intestine would be defective. The most important safeguard being removed, infection of the biliary passages from the intestine might occur. Such infection may be caused by organisms, such as the bacterium coli, which are normally present in the intestine.

The jaundice which is present in cases of closure of the œsophagus, inanition, fasting, and the periodical vomiting of children may perhaps be due to the same cause. In those cases of catarrhal jaundice which are accompanied by gastric symptoms the jaundice may not always be due to an extension of the inflammatory process to the duodenum and common bile duct, but rather to the fact that the appetite is lost, the diet restricted, and, as previously explained, infection of the biliary passages from the intestine rendered easier.

A Tube for Biliary Fistulæ.—The tube is made of hard rubber. It consists of two parts. The tube proper, *a*, which is inserted into the fistula, with a plate to which the band is attached; and the outer portion, *b*, to which the bag for collecting the bile is attached. The one part fits accurately into the other, no other appliance for preventing their separation is necessary. The tube can be easily cleaned or sterilized. It has the advantage that the bag can be detached, emptied, and washed out by the patient without any assistance, the tube proper remaining in place. This tube has been used for some time and found to meet all requirements.

104 West Seventieth Street.

GUNSHOT WOUNDS OF THE SPINAL CORD. A PLEA FOR EARLY MYELORRHAPHY, WITH REPORT OF A CASE OF BULLET WOUND THROUGH THE LIVER, SPINAL COLUMN, AND CORD. LAPAROTOMY, LAMINECTOMY, RECOVERY.*

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Introduction.—The surgery of traumatic lesions of the spinal cord is at present in a very unsettled state. Operators are not unanimous in their opinions or treatment of these injuries. True, many are changing from the very conservative teaching of a few years ago to a more radical position, yet the radicals do not take the advanced ground in certain destructive lesions of the cord, I believe they should. It is primarily to advocate active interference in the worst cases of spinal injury that this paper is written. While it deals only with gunshot wounds of the cord, the argument, proofs, and conclusions are equally applicable to the severer forms of fracture, dislocation, and traumatism.

If my interpretation of the essential facts of experiment and of the remarkable results obtained in a few cases is correct, there is good ground for the hope that surgery will be able in the future to benefit a greater number of those cases hitherto, almost unanimously, abondoned to a miserable existence and inevitable death within a few months.

Mortality.—From the war records (1) La Gard concludes that "this class of injuries are the most fatal in war hospitals, and their gravity increases as the wound approaches the head." Otis (2) in the records of the civil war "places the mortality at seventy per cent. in cervical, sixty-three and one-half per cent. in the dorsal, and forty-five and one-half per cent. in the lumbar regions respectively. The fatality is increased by wounds of the neighboring viscera. With involvement of the spinal cord, the termination is sooner or later in death." Makin (3), from his experiences in the Boer war, states "that these cases were proportionately the most fatal of any of the whole body to the wounded, who left the field of battle or the field hospital alive." Vincent (4) publishes records of thirty-three cases with a mortality of over sixty-seven per cent. In forty-two of Prewett's (5) cases the mortality was seventy-six and one-half in the cervical region, sixty-six and two-thirds in the dorsal, and fifty per cent. in the lumbar region—an average of sixty-four and four-tenths per cent.

From the forty-six cases which are here collected the total mortality in the cervical, dorsal and lumbar regions is thirty-six per cent., fifty-five per cent. and sixty-six and two thirds per cent. respectively; the average being fifty-two and one half per cent. This would seem to show that with modern aseptic treatment in civil practice the mortality is not nearly as high as in war time and preantiseptic days. When death occurs soon after the injury, it may be due to high situation of the wound, visceral complica-

* Read before the New York Academy of Medicine, May 4, 1906.

tions, hæmorrhage, or septic infection. Death, after a longer period, is due almost always to a septic condition, proceeding from bed sores, multiple abscesses, or a surgical kidney. Indeed, this last condition is very frequent.

Pathology.—Gunshot wounds of the spinal column show all grades of severity from mere perforation of the spinal canal to complete division of the cord. These wounds are usually associated with a concomitant traumatic fracture of the vertebra that does not in itself demand special consideration, except for the results which may follow displaced fragments of bone pressing upon or perforating the cord. Frequently, there is also present lesions of the abdominal or thoracic viscera or the vital structures in the neck.

External to the dura there may be compression by hæmorrhage, depressed fragments of bone, or the bullet. The dura itself may be perforated by the splinters of bone or by the bullet, both or singly. The cord may suffer from concussion or compression by extravasated blood, fragments of bone, or the bullet. Multiple minute, or single large hæmorrhages may have taken place into its substance, or it may have been perforated, or completely severed by the bullet. The statistics regarding serious injury to the cord itself in Prewett's cases are as follows: Completely severed, 4 times; crushed, 6 times; pierced by bullet or splinter of bone, 6 times; compressed by bone, bullet, or blood clot, 10 times.

In the cases included in this paper, these injuries occur in this proportion: Cord completely severed, 10 times; cord crushed, 4 times; cord pierced by bullet or splinter of bone, 5 times; cord compressed by bone, bullet or blood clot, 11 times.

In nine of Vincent's thirty-three cases the bullet was found within the spinal canal. In forty-two of Prewett's cases it was in the spinal canal thirteen times, and in these forty-six cases it occupied this position eleven times—i. e. twenty-four per cent. Septic infection may be present and increase the gravity of the condition, "as all gunshot wounds are presumably septic from the infections carried by the bullet, particles of clothing or skin." (La Garde). The microscopical changes in the cord are those of destruction of tissue by the traumatism, and a degeneration of the various nerve fibres and cells above and below the site of the lesion.

Inflammatory changes will follow and end in the production of new connective tissue. If infection is present, the appearance varies from the mildest to the most severe grades of septic meningitis and myelitis. By consulting the histories presented, further details of the pathological changes may be obtained.

Symptoms.—The spinal cord is a living cable composed of thousands of insulated filaments and their nerve cells for the transmission of motor and sensory impulses, and the production of various reflexes necessary to the preservation of life and health. It is also functionally divisible into segments corresponding to each pair of spinal nerves, and the various important reflexes have been accurately located within these segments. Furthermore, the relation of these spinal segments with reference to the spinal column is known.

The symptoms which follow cord injury are produced by an interference with the conductivity or interruption of the continuity of the nerve fibres, or a disturbance or destruction of the nerve cells reflected in various motor and sensory symptoms, and alteration in the reflexes in parts situated below the seat of the lesion. A complete epitomy of the varying symptomatology will be obtained from a study of the cases here reported, and it will be unnecessary to enter into their consideration at greater length now, except to add one caution from Walton (6) "that we have no symptoms or group of symptoms which will prove to us, within a reasonable time, whether the cord is severed or not."

Treatment.—What patients should be operated upon? I would answer that *all,* who survive the initial shock of the injury to the cord and its complications. By a study of the cases in literature it is very clearly proved that we cannot determine, except within very wide limits, the exact condition present within the spinal canal after a gunshot wound. Therefore, the damaged region should be laid bare in order that the extent of the injury may be ascertained and the proper treatment instituted.

In the forty-two cases I have selected as bona fide instances of gunshot wounds of the spinal cord among those reported by Prewett there is a total mortality of seventy-one per cent. in unoperated and sixty-one per cent. in operated cases. In the forty-six cases here collected the figures are sixty-nine and one quarter per cent. of mortality with noninterference and forty-two and one half per cent. with operation. This improvement in the total results in the last ten years is striking, and is due in great measure, I think, to the operations being done earlier, quicker, and with aseptic technique. The lower mortality after operative treatment is a strong argument for such interference.

Conditions Demanding Operation.—It is generally conceded that laminectomy is imperative in the following conditions: 1. To remove the bullet, or spiculæ of bone, or particles of clothing; 2. to remove blood clots; 3. to arrest hæmorrhage; 4. to allow oozing in traumatic œdema of the cord; 5. to prevent pressure and sepsis by free drainage; 6. in advancing paralysis.

The next indication, viz.: 7. to suture a severed cord is a proposition not universally accepted. It is to this phase of the subject, however, that I wish to devote most of my time.

Various Views Regarding Operation.—Bolton (7) would restrict operative influence in all cases "to the removal of foreign bodies, to facilitate disinfection, to prevent more extensive necrosis and to facilitate drainage." He believes, "that total lesion of the cord is irremediable . . ., permanent, and requires no treatment." Lloyd (8) states that "it becomes therefore an impassable barrier to surgical progress, when the cord has been definitely injured"; also, "it is the compression, and only the compression without injury to the cord, that can be benefited, and this may be taken as an axiom in surgery of the spine."

These opinions published previous to 1902 give a correct representation of the accepted surgical teaching at that time, and, I am sorry to say, is at present the almost universally accepted practice. To be sure, one now and then has apparently with little success protested against this plan of noninterfer-

ence in the very serious cases, as Prewett, writing in 1898, asks (in these cases with severed spinal cord), "shall we leave them to survive or perish without attempting to improve their chances of recovery? Would it not be better to do a laminectomy, remove all foreign bodies, spiculæ of bone, the bullet, if possible, and the devitalized tissue of the cord, thereby diminishing the dangers of meningitis and myelitis, and promoting more prompt healing of the wound?" And Walton in 1901 wrote that "owing to the decided limitations of our diagnostic ability, it is well to promptly resort to operation upon all patients except the moribund and those with great displacement, and give them the benefit of the doubt." Sachs (9) said, "It is still the fashion to delay surgical interference until everything else has been tried, whereas if surgical interference was to do any good, it should be practised at once." Dana (10) voiced the old contention that "if by clinical observation one could be sure that the cord was crushed, one should not recommend operation." Starr says that "if there is evidence of a total transverse division of the spinal cord an operation is useless." Vincent (11) writing in 1903 advocates active interference. He sets forth statistics that expectation admits an excessive mortality, on the contrary interference has saved life.

Prewett quotes the following case reported to him by Briggs of St. Louis. This is not a case of bullet wound, but bears directly upon our contention.

A boy, aged seventeen, had his spine crushed by a falling tree, and symptoms of complete division of the cord followed. Laminectomy was performed on January 5, 1898, three weeks after the injury; removal of the posterior arches of the ninth, tenth and eleventh dorsal vertebræ. The cord had been completely severed at the level of the tenth dorsal vertebra. "I at once conceived the idea," writes Dr. Briggs, "of cutting off the ends of the cord and attempting to reunite them." Four sutures of fine catgut were passed transversely through the ends of the cord and membranes tied, bringing the severed ends of the cord into opposition. There was gradual improvement in the boy's condition, partial control of the bladder, motion of the muscles to the knee in one limb and in nearly the whole of the other limb.

Next follows the celebrated case of Stewart-Harte (15), which ought to have revolutionized the teaching and practice in this class of injuries. Inasmuch as the record of this case is so important for my purpose, I shall quote it somewhat at length.

Case I, Stewart-Harte.—Total severance of the spinal cord; suture; partial reestablishment of function. The writer states that: "Previous to this case there is no authenticated case on record of union with restoration of function of a completely transverse section of the spinal cord in man." They evidently knew nothing of Estes's or Briggs's cases just quoted, which in inception and accomplishment antedated theirs by several years.

A woman, aged twenty-six, was shot twice with a .32 calibre revolver. One bullet was easily removed from beneath the skin in the right lumbar region. The other entered one inch to the right of the seventh dorsal spine, and passed directly into the spinal canal. There was complete abolition at once of motion and sensation below a line around the body at the level of the tenth dorsal spine. Above this area was a belt of hyperæsthesia reaching to the ensiform cartilage. Just before the operation this also became anæsthetic. Superficial and deep reflexes of the lower extremities abolished.

An operation was performed three hours after the injury under ether anæsthesia. The right lamina of the seventh dorsal vertebra was crushed in, the left fractured at its base. The spinous processes and laminæ of the seventh and eighth dorsal vertebra were removed. There was a rent in the dura through which the bullet was seen; this was enlarged and the bullet extracted, also some small splinters of bone. The cord had been completely severed, and the ends were three fourths of an inch apart (proved by five witnesses). The ends of the cord were approximated by three chromicized catgut sutures. One suture passed anteroposteriorly through the whole thickness of the cord, and the other two transversely. The catgut frequently tore out before the ends of the cord were finally brought into contact. The dura could not be approximated. The wound was sutured over a gauze drain that was removed after twenty-four hours.

At the end of the fifth day, there were evidences of sensation in the lower extremities. The superficial reflexes returned on the seventh day, and the patellar on the twenty-first day. At the end of sixteen months, the patient could voluntarily flex the toes, flex and extend the legs, flex and extend and rotate the thighs. She could slide out of bed into her chair by her own efforts, and stand with either hand on the back of a chair. The bowels were under perfect control. About one pint of urine was passed three times during twenty-four hours. She was sometimes incontinent during sleep. The menses were regular. She had sense of touch, temperature, pain and position all over. The muscles were moderately rigid, and there was present on both sides marked but easily exhausted ankle and patellar clonus. The deep reflexes of the tendo Achillis, ligamentum patellæ, and hamstring tendons were marked. The rectus abdominis reflex was seen on both sides. There were no reactions of degeneration and no trophic changes in the skin or nails. No bed sores developed.

Under date of April 9, 1906, Dr. Stewart in a personal communication says:

"The patient is now able to take a few steps with the aid of braces and crutches. Sensation remains about same as at the time of the previous report."

The idea, however, back of this advice for early interference is not to attack a severed cord, primarily, but to operate in the hope of finding and alleviating the less serious conditions, before compression of the cord has produced secondary degeneration. As this sets in at a very early date, operations for its prevention must be correspondingly early. The same proposition holds good at present.

The plea that I make is that the worst patients, namely, with complete division of the spinal cord, should be operated upon and sutured at the very earliest moment, and not be consigned by a policy of inaction to an inevitable death. I will here set forth the reasons, proved by practice and experiment, for such advice.

Reasons for Radical Operations.—First as to the anatomical possibility of suturing several cords where there has been loss of substance.

a. The feasibility of suture of the spinal cord has been demonstrated in the living when there has been separation of the ends to the extent of three-quarter of an inch. (See the cases of Estes, Briggs, Stewart-Harte, and Fowler quoted later.)

b. In work on the cadaver I have demonstrated

that coaptation is possible after resection of three-quarters of an inch in the dorsal and one-half of an inch in the cervical regions, such resection is followed by retraction of the ends of the cord to a much wider interval than represented by the segment removed.

The last I have demonstrated in spite of the statement of Chipault (20) that coaptation under such conditions is "anatomically impossible." There is, however, a very essential step in the operation, which renders coaptation after the loss of three quarters of an inch possible, and this is full extension of the spine and head.

EXPERIMENT I.—I resected three fourths of an inch of the spinal cord, in the lower dorsal region in a powerfully built male, of probably fifty-five years of age. The body had been frozen in the morgue, and later injected with an arsenic and formalin solution. As formalin hardens all tissue, some allowance must be made for this factor. With the trunk in flexion over a block, and the head flexed on the sternum, the ends of the cord retracted to over an inch. The three sutures, recommended for the operation and used by Stewart-Harte and Fowler, were passed without any difficulty by raising and separating the cut dura by traction sutures, as I suggest. With the trunk in the flexed position, coaptation could not be obtained of less than half an inch; but by placing blocks so as to extend the head, thighs, and trunk, the severed ends of the cord came together nicely. The effect was then noted of a change of position. The thighs were dropped to the table (semiflexion), no change; the head was allowed to drop in a flexed position, there was still apposition of the ends; but as soon as the body was placed flat on the table, the ends of the cord began to pull away until contact was preserved only over the central parts of the fragments. Fixation of the spine then in a fully extended position I consider a very essential factor in maintaining coaptation until healing takes place.

I think, however, that in the living freer mobility of the cord is present than in the subjects prepared for dissection, and that cadaver work does not express the full possibilities of spinal cord resection and suture in the living. If this is the case, coaptation could be secured during life even after loss of an inch of the cord.

EXPERIMENT II.—The cadaver was that of a very old woman, ten days after death, not injected. The dorsal spine was flexed ventrally, and fixed in the bowed condition of old age by bony and fibrous changes. The cervical vertebræ above the sixth showed fair mobility. The spinal cord was exposed by removing the laminæ of the fifth cervical to the second dorsal vertebræ. The spinal canal and cord were markedly bowed forward. Extending the head lessened the tension on the dura, but did not change the curve in the spine. The dura was opened, and one half inch of the cord resected opposite the seventh cervical vertebræ. The cord was loosened up by tearing off (with a hooked probe) two or three of the pointed attachments of the ligamentum denticulatum above and below the site of section. The usual sutures were placed in position, the head and trunk extended as fully as possible, the severed ends of the cord could not, however, be brought into contact. The presence of the deformity in the dorsocervical region prevented such a result. The interval was, however, reduced to about one eighth of an inch. Division of the roots of two pairs of nerves on the lower portion of the cord did not allow of any gain in bridging the gap. The conclusion was plain that in this instance full extension of the spine being impossible, the ends of the cord could not be approximated.

EXPERIMENT III.—Cadaver of a male adult, strong and muscular, dead ten days, not injected. The dorsocervical region was exposed and the same amount of cord resected opposite the vertebra prominens as in the preceding instance. Two pairs of serrations of the dental ligament, above and below the site of section, were torn away by a hooked probe, the usual three sutures passed, the body was now dropped to the flat table and the head alone extended. The ends of the cord came into neat adjustment. The head was allowed to drop to the table but the ends still remained in close apposition; but the cord above and below the sutured area drew out and was distinctly narrowed.

From this experiment we may conclude, that, with a normal spine, one-half inch may be resected from the spinal cord in the dorsocervical region and the ends coaptated by sutures. I think that division of at least two pairs of teeth of the dental ligament, at their point of attachment to the dura, and full extension of the head are necessary in securing this result. The sutures did not show any tendency to tear out and held the cord well, even under considerable tension.

As to the manner in which the sutures should be inserted, I think the plan practised by Stewart-Harte and Fowler is the best. One is passed anteroposteriorly through the centre of the cord, the other transversely through the cord, one near its ventral, the other near its dorsal surface. To the objection that this method destroys some fibres and cells in the cord, I would reply that so does the method of passing sutures through the piaarachnoid, for no one can insert sutures into this delicate membrane, that will be broad and deep enough to hold anything, without catching up some of the cord substance. Furthermore, the first method coaptates the ends well, and will not tear out so readily as those passed through the piaarachnoid. Damage must inevitably be added to the severed cord by sutures however placed. The plan here favored, however, does as little damage as any; it holds the fragments in good contact, the sutures are much quicker and easily placed.

Second.—As to the possibility of severed cords uniting—waiving for the moment the question of the regeneration of the nerve fibres.

a. In animals hemisections of the cord is always followed by union. This is true of complete section but in this instance there is the retraction of the ends, and the interval is filled in by a blood clot first, followed by a cicatrix.

b. In human beings Chipault (19) states that some cases of wound of the cord by a stab have been reported by Professor Raymond (1897), and by Huguier and Bernard (1900). Once, the stab had penetrated at the level of the seventh cervical process, another time, in the third and fourth dorsal. In the two cases there was complete recovery. Chipault adds that all observations agree that this is what ordinarily happens in this kind of lesion.

c. In gunshot and fracture dislocation lesions attended by destruction of cord tissue the several ends have been united in five cases with evidence of union in all.

Third.—Is such macroscopical union attended with true microscopical union or regeneration?

a. Experimental evidence. Bearing directly upon

this fundamental question of the regeneration of the nerve fibres and cells in the spinal cord, as conclusively proved by the two cases just recited, are the following observations by Schäfer (16) that:

"Eichorst and Naunyn after transection of the spinal cord found nerve fibres traversing the cicatrix, which they considered traceable to an afferent root adjacent, being able to follow them to a spinal ganglion."

Under the chapter of regeneration of the spinal cord, Schäfer states:

"It must be remembered that some recovery of function is possible without regeneration of the tissues. In dogs regeneration of cells has been described, also the extension of nerve fibres across the scar without any regeneration of nerve cells; whilst by others neither regeneration of nerve cells nor extension of nerve fibres into the scar could be found. Karyomitosis has been found in the ependyma cells of the central canal at the site of lesion, but none in the nerve cells proper. The origin of the new nerve fibres that in some cases traverse the scar has not been ascertained."

Again from the following brief summary of the exhaustive paper by Strobe (17) bearing upon the possibility of the growth of spinal axones we learn that:

"The fibres of the posterior roots, at the level of the lesions, grow out from the side of the spinal ganglions, and push their way a distance between the fibroblasts of the cicatrix. These new fibres look like the regenerating fibres of divided peripheral nerves. These at forty-five days did not reach the axial plane of the cicatrix. From the cut end of the cord young fibres are even after two weeks growing into the scar tissue. A tongue like bundle of such fibres was seen in the lateral (crossed pyramidal) column growing into the scar. Fibres wound along and around the new vessels. These fibres are, however, limited to the edges of the cicatrix, and in forty-five days did not fully traverse the cicatrix. These fibres are not of full size, they break up into numerous fibrillæ at their ends, produce many collaterals, but at forty-five days did not produce anything like genuine regeneration of the cord."

He speaks of areas of softening and cysts above and below the lesion and the dilatation of the central canal. No attempt was made to bring the ends of the severed cord together, but mention is made of blood clots that separated the ends of the severed cords after twenty-four to forty-eight hours.

b. Evidence furnished by the results of suture of severed cord in human beings. In a publication of recent issue Estes (14) says:

"I have done two complete and one partial exsection of the spinal cord. As a matter of interest, though it is not important at all, I should like to state that my first case of complete resection—I mean the resection of a section of the whole thickness of the cord—was done in *October, 1889*. I made a complete resection of a disintegrated cord, at the first lumbar vertebra, removed about three quarters or an inch of the cord, squared off the ends, and brought them together with catgut sutures and sutured the dura mater over the united cord. The operation was done on the tenth day after an injury from indirect violence (the man fell from a high telegraph pole). The cord was lacerated entirely through, and many fragments of the bone had been driven into the spinal canal. The man was considerably improved as regards the sensory and trophic disturbances, but never regained the use of his lower limbs. I again exsected about half the thickness of the cord in the lower dorsal region (ninth and tenth dorsal), which was lacerated and entirely disintegrated by sharp spiculæ of bone. I left the anterior columns only intact, then I drew the ends of the lateral and posterior columns together by catgut sutures, and sutured the dura over the united ends. Sensory and trophic paralysis improved almost immediately. The man finally recovered the use of his lower extremity, and the use of the flexors of the right extremity, so that with the aid of a steel and leather brace on the weak side he was able to walk with comparative ease. His sphincters entirely recovered."

A study of the experiments that have been conducted on the spinal cord in the past proves very conclusively that in no case was 1, the severed cord sutured; consequently 2, a blood clot formed between the ends of the cords, which retracted to a greater or less extent; however, 3, fibres (sensory) grew upward from the spinal ganglion into the cicatrix; and 4, fibres (motor) grew downward into the cicatrix; 5, these fibres did not reestablish the continuity of the spinal cord; but I ask, is it any wonder that they did not, inasmuch as the ends of the cord were separated by a blood clot—later cicatrix? They did the best they could in the short space of forty-five days. What might have happended in several months, or what have happened if the ends of the cord had been held in apposition by sutures?

A more positive proof of the possibility and actual development of new nerve fibres is obtained in the following history of a case with autopsy and post mortem findings by Shirres (18):

"Regeneration of the axones of the spinal neurones in man: Gowers refers to the possibility of regeneration taking place, and gives the results of pathological section of the spinal cord in a case that had shown symptoms approaching transverse division of the cord with a fair return of motion and sensation. In the crossed pyramidal tracts and other areas of the cord, at the seat of the lesions were found a number of very fine axones in a situation where normally large nerve fibres are usually seen. He was of the opinion these smaller fibres were regenerated axones."

The following is the case cited by Shirres of complete severance of the spinal cord with a gap of one-half inch between the ends, in the service of Dr. Armstrong, in the Montreal General Hospital, 1902, which deserves critical attention. No attempt was made to suture the divided ends at the time of the operation, as there was no hope entertained that the patient would survive. After months of treatment carried out by Dr. Shirres and his assistants "there was no return of the reflexes or alteration in the flaccid state of the limbs. But truly wonderful results were achieved as few trophic or vasomotor disturbances appeared in the extremities eleven months later."

Dr. Shirres and Dr. Armstrong after this interval decided to make an attempt to secure regeneration between the ends of the severed cord. Accordingly at a second operation, a segment three inches long of the spinal cord of a large dog was placed alongside of the severed ends of the patient's cord, the interval now between the ends having increased to one and one-half inches. No attempt was made to diminish this gap. A few fine sutures united the piaarachmoid of the one to the other, the dura was closed, wound sutured, and a plaster jacket applied;

the patient made a perfect recovery from this unique operation. A month passed without change, but the electrical and massage treatment was carried out by Dr. Shirres and a corps of assistants as before.

"By the fifth week the patient was conscious of flatus in the lower quadrant of the abdomen. This he had never experienced before. Six days later he was conscious of the passage of the catheter, and two days later he informed the orderly his bowels were about to move, and could tell when fæces passed the rectum (anus?). On this date, he complained of sensations of pins and needles in the right foot, and a week later, of the same symptoms in the left. Two months after the operation, he had subjective disturbances in both feet as high as the knees. Little other change was noted until the eightieth day after the operation, when for the first time, with the pleximeter, a certain amount of tone was noticed in the muscles of the flexor surface of the thigh and leg."

This very interesting progress was terminated about a month later by the death of the patient from a large abscess of the right kidney, which gave no urinary evidences of its presence.

Examinations of sections of the cord showed the following condition:

"Above the site of the lesion there was typical ascending degeneration of the columns of Goll and Burdach, the direct cerebellar and Gower's tracts. Sections below the lesion showed definite degeneration in the direct and crossed pyramidal tracts. The dura and tissue at the site of the grafting experiment showed a mass of minute myelin sheats of nerve fibre, which laid closely adherent to the dura, and when traced upward and downward, united with the segments of the cord above and below, demonstrating the fact that regeneration of the axones of the spinal neurones had taken place to a limited extent. At the time of the operation, the dura between the two segments was perfectly clear of nerve fibres to the naked eye. Sections of the lower segment showed it to be in fairly healthy condition. In the cauda equina ninety per cent of the nerve fibres were to all intents and purposes normal by the Pal-Weigert stain."

The importance of these post mortem findings justifies, I think, this lengthy abstract of a very interesting history. Dr. Shirres states that he thinks the success in this case was largely due to the patient having been so assiduously treated by electricity, the prevention of contractions, and the frequent movement and massage of the extremities. Another case by Fowler (see Case XVI.) confirms the preceding results.

Name for the Operation.—So far as I have been able to determine Estes was the first to use the terms myelorrectomy and myelorrhaphy for section and suture of the spinal cord. As the words are formed similar to words already in general use their adoption is recommended.

Conclusions as to Operating for Severed Cords.—First.—Chipault says in reference to stab wounds of the spinal cord followed by complete recovery "that this is what ordinarily happens in this kind of lesion."

Second.—Experimental work (on animals) clearly demonstrates that sensory fibres have grown upward and motor fibres downward into the blood clot or cicatrix, filling the gap between the severed ends of the cord. This attempt at regeneration has been made under the most adverse conditions—viz., retraction of the severed ends of the cord, the presence of an intervening blood clot and insufficient time for recovery. If these unfavorable conditions were eliminated what might happen?

Third.—The results in the cases of Estes, Briggs, Stewart-Harte, Shirres, and Fowler (21) (see Case XVI.) in instances of complete severance of the cord, and of Pilcher (22), Pegram (23), and myself in perforations of the cord by the bullet show beyond any question that the spinal cord does regenerate.

Fourth.—Every case of complete transverse lesion of the cord not operated in, the patient died in less than a year. Of the five cases (Estes 2, Briggs 1, Stewart-Harte 1, Fowler 1) which were operated in and the ends of the cord brought together by sutures one patient died within ten days, the other patients were living and improving at the date of the various reports (one two and one half years and one over four years since the injury).

In view of these facts how can we escape the conclusion that all patients with completely divided spinal cords should be operated upon, and an attempt made to secure end to end union of the severed fragments, by properly placed sutures?

Laminectomy, Myelonetomy, and Myelorrhaphy.—How may this result be obtained? This question can be answered by briefly recounting the steps in the operation of laminectomy. A free median incision through the skin to the spinous processes, a clean severance of the tendons of the spinal muscles, and a rapid stripping up of the muscle mass so as to bare completely the laminæ of from three to five vertebræ. Pack the wound with hot gauze, compress for a few moments to check the free, mostly venous hæmorrhage; then, with the muscles well retracted, you will have a dry field. With a rongeur forceps bite off the spinous process of one vertebra to its base and open into the spinal canal, gnaw away the laminæ laterally with rongeur or cutting forceps, sever one lamina after the other until the spinal canal is opened for the desired extent. Leave no sharp bony points. Osteoplastic methods take time and are not necessary as the spine is not appreciably weakened by this procedure. Deal with the conditions as you find them, with the minor details I will not delay you; open the dura for the full extent of the wound, place two to four traction sutures in its cut edge; they work much better than clamps or tenaculæ and are not in the way.

Remove the bullet if present, speculæ of bone, foreign bodies as clothing and blood clots, the latter preferably with a stream of saline solution. By drawing on the traction sutures and lifting up (backward) the dura, the cord is brought into better view. If it is completely severed treat it in a surgical way by carefully trimming off the bruised and lacerated ends (myelorrectomy), and then bringing them into coaptation by fine chromic catgut sutures (myelorrhaphy), introduced well away from the severed ends, so that in tieing them they will not cut their way through the soft cord. One suture is passed anteroposteriorly through the centre of the cord, the other two from side to side; one near the ventral, the other near the dorsal surface of the cord. To aid in the coaptation of the ends use the expedient of extension of the heads, thighs, and trunk, which I

have found in work on the cadaver assists this object very materially. In the upper dorsal and cervical regions greater mobility of the ends of the cord may be obtained by tearing off with a blunt hook the attachment to the dura of two pairs of the serrations of the dental ligaments above and below the site of the lesion.

Tie the sutures in the cord, smooth out the mushroomed ends of the cord[1] and over them adjust the dura closely by three interrupted sutures. Close the rest of the dural opening loosely, so as to allow of an escape of any excess of exudate or cerebrospinal fluid. Drain from the dura outward with strands of silkwormgut or strips of rubber tissue for twenty-four hours, suture the muscular mass with interrupted and the skin with continuous catgut. Apply a moderate dressing. Maintain the trunk fully extended until the operation has been completed and a plaster jacket has been applied. The after treatment will be referred to later.

I shall not discuss the treatment of the less serious conditions, as their character has been shown at the beginning of this section, and the steps in their treatment, but minor modifications of the major proceeding here given in detail.

Time for the Operation.—The next question is, when to operate.

Again experimental work and the results of cases actually observed indicate the time, and that is at the earliest possible moment after recovery from the initial shock of the injury, or after dealing with the serious complications of abdominal or thoracic lesions so often associated with spinal gunshot wounds. We may be compelled by their severity and the imperative demand for their prior treatment to neglect the spinal condition for a time, but wait no longer than necessary, because it has been shown that delay leads to most serious consequences from degenerative changes in the cord, as a result of the presence of a blood clot, the bullet, or infection.

The degeneration begins at once, proceeds with great rapidity, and the final results are largely governed by the effects of such pressure degeneration.

The effects of delay upon the cord are bad, not only when it is fully divided, but also when it has not been severed, but is compressed by the bullet, blood clot, or depressed fragments of bone. Such delay renders abortive, I believe, in many cases the efforts the surgeon makes to repair the damage even in the milder cases. Fowler attributes the poor result in his case, compared to the remarkable restoration in the Stewart-Harte's, to the delay of ten days, which was necessary before he could operate, to the short time of three hours intervening in theirs. Therefore, we must operate at the earliest possible moment in every case, in order to frustrate as far as possible their bad effects.

The After Treatment.—Judging by the improvement obtained by Shirres in his practically hopeless case, the after treatment is a very important factor in determining the degree of final recovery.

Immediately after the operation the indication is rest to the spine. This is secured by the ventral or lateral decubitus, the body being maintained in the fully extended position (dorsal flexion) as previously suggested. As soon as healing has taken place in from two to three weeks, the jacket should be removed, the patient kept flat on a water bed, if available, and active electrical stimulation with massage and passive motion of the trunk and lower extremities be undertaken. Retention apparatus should be employed to prevent deformities in the limbs. The bladder must be regularly catherized and irrigated under strict aseptic precautions, and the development of a surgical kidney prevented. Everything else pertaining to the preservation of strength, nutrition, and comfort must be utilized. As soon as possible get the patient out of bed and coax him to attempt to use his muscles. The stimulation to regeneration from voluntary efforts is very considerable.

Final Results.—What results may we expect?

This is hard to say. It depends upon the site and extent of the cord lesion, the visceral complications, the previous condition, health, and age of the individual, the nature of the projectile, its size, velocity, and whether lodged in the canal or not, the presence of hæmorrhage within the cord, or within or external to the dura, whether the case is complicated by infection or not, and perhaps as vital as any factor the time that has intervened between the injury and the operation, and by the after treatment that is instituted and maintained for months.

With few exceptions, surgeons have in the past, when confronted by a case of complete disunion of the spinal cord, refrained from interference, and the death of the patient has inevitably followed in less than a year. The remarkable results obtained in these exceptions, furnish, to my mind, positive proof that with early myelorraphy, with careful technique, and with persistent after treatment the outlook for this class of cases is not as hopeless as generally believed, in fact it is positively encouraging.

The patients that survive the initial shock and visceral complications, do have a chance; is it for us through delay and inaction to destroy that last chance? Therefore, I urge once more operation in every case of gunshot wound of the cord; operate as early as possible, do all that is necessary, even to suturing a severed cord, and carry out an after treatment that only terminates wth the death of the patient or his ability to look after himself.

In closing I wish to thank Dr. J. J. Moorhead for his valuable assistance in looking up the literature of this subject, and Dr. R. T. Bang for his help in translation from the French of matter bearing on the matter.

Case II.—Haynes and Moorhead. Gunshot wound of the liver, spine, and spinal cord. Laparotomy-laminectomy. Recovery. V. C., twelve years of age, Italian girl. Brought to the hospital by an ambulance on October 28, 1905, in the service of Dr. Haubold. The child was accidentally shot by a 32 calibre bullet, the wound of entrance being at the left of the median line, three and one half inches below the ensiform appendix. The bullet could be felt and seen immediately at the right of the middle line of the back, at about the eleventh dorsal spine, where it lay just beneath the skin.

Examination. Pulse small. Extreme pallor; restless and very thirsty; dyspnœa; skin cold. Abdominal pain and rigidity. Patient complains of weight and tingling in lower extremities, which are very hyperæs-

[1] In a severed cord the ends form "mushroom" contraction of the pia arachnoid; after suture this tendency still exists, but can be counteracted in a measure by close application of the dura as suggested.

thetic from the middle of the thighs downward. She screams with pain on the legs being touched, and cannot even bear the weight of a sheet. She moves her legs slowly and with difficulty, viz., flexes and extends legs at knee; very slight, if any, ankle motion.

Operation by Dr. Moorhead, assistant visiting surgeon. The wound of entrance was exposed by a vertical incision, and a wound through the left lobe of the liver disclosed, from which considerable blood had escaped. The liver wound was one and one half inches from the anterior margin. The orifices of entrance and exit in the liver were closed by No. 2 chromic gut. There was no other visceral wound. The abdomen was made clean, a cigarette drain left in place, and the abdominal wound sutured. The bullet was removed from just beneath the skin, in the back, as previously indicated. On October 31st the abdominal drain was removed. The patient was still extremely hyperæsthetic over the lower extremities. There was incontinence of urine and fæces noted for the first time.

November 3d. Patient shows areas of anæsthesia corresponding to the terminal distribution of the musculocutaneous, small sciatic, and external saphenous nerves, and motor and sensory paralyses of the anterior tibial, posterior tibial and its branches, also of the anus and vesical sphincter. There is anæsthesia of the skin of the buttocks, perinæum, and inner side of the thighs, with the hyperæsthesia of the remaining anterior, posterior, and lateral regions of the thighs. The condition is practically symmetrical. In view of the fact that the area of motor and sensory paralysis had extended since the receipt of the injury and a hæmorrhage into the spinal canal being entertained as the most probable cause, an explanatory operation on the cord was deemed advisable. Accordingly a laminectomy was performed on November 3d, by the writer, assisted by Doctor Moorhead and the house staff. Exposure of the bullet tract showed that it had come from between the laminæ of the eleventh and twelfth dorsal vertebræ, close to the base of the spinous process of the upper one. Both laminæ were slightly notched by the bullet. The laminæ of the eleventh and twelfth dorsal and first lumbar vertebræ were removed. No blood clot external to the dura was found. The dura showed a small round hole in its centre at about the middle of the field, and was incised for a distance of two and one half inches. There was no blood clot about the cord, but it showed directly in its centre a small mushy area where it had been traversed by the bullet. The cord was not severed. There was no subdural hæmorrhage, hence the dura was sutured with a fine catgut continuous suture. The deep muscles were sutured with heavier interrupted catgut. A few silkwormgut strands were left in place for drainage, and cutgut was used for the skin wound. The course of the bullet into the spinal canal was through the intervertebræ substance between the eleventh and twelfth dorsal vertebræ, through the centre of the spinal cord and the dura, then between the posterior arches as described, and into the muscles of the back. The bullet was not upset at all, and only showed some fine striæ made, I think, by its course between the laminæ of the vertebræ.

November 8th. The silkworm drain was removed. The wound closed and healed per primam. The course of the case was very tedious. There was incontinence of urine and fæces, and almost constant complaint of pain in the legs below the knees. There was a free discharge of bile from the anterior wound.

December 13th. The patient was seen by Dr. Leszynsky, the consulting neurologist to the hospital. At that date there was a slight general wasting of both legs, absence of both knee jerks and plantar reflexes. Fair irritability was present in the left peroneal nerve; questioned in the right. The galvanic current was used every other day, and rightangled splints applied to the feet.

By December 15th the patient had improved very much. Her appetite was good and the hyperæsthesia less. Patient can flex, extend, abduct, adduct, and rotate the thighs, she can extend and flex both knees, and can move slightly the tibialis anticus and the flexors and extensors of her toes. She can sit up.

December 17th. Anterior wound healed. Patient has regained control of bladder and rectum.

January 4th. Patient has been out of bed for a week; is practising standing.

Temperature and pulse. At the time of the first operation her temperature was 104° and pulse 130. At the time of the second, the temperature was 100° and the pulse 120. Both reached normal about the second week, and with slight variations remained so.

I wish to call attention, 1, to the extremely unique wound of the spinal cord, which was traversed exactly through its centre by a 32 calibre bullet, at about opposite the intervertebral disc between the eleventh and twelfth dorsal vertebræ, and evidently traversing the fourth lumbar segment of the cord; 2, to the change from extreme hyperæsthesia in the legs to anæsthesia, and then the gradual regaining of the sensations in the skin to as far as the feet themselves; 3, to the primary muscular paralysis which had been gradually diminishing in extent; and 4, to the rectal and vesical incontinence for six weeks, with gradual regaining of control of these functions.

Present state: January 23, 1906. Examination by Dr. Hartwell at Dr. Haynes' request. All sensation above level of crest of ilium is normal. Anteriorly, internally and externally sensations are normal as far as the knees. In the outer side of the right knee is a small area where pain and temperature sense are disturbed, while tactile sense is normal. On the surface of the right foot, extending from the base of the great toe on inner side, outward to base of third toe, from there upward to mid-ankle region, outward over external malleolus, and then across sole of heel, and from there up inner border of foot to starting point on the dorsal surface there is almost complete anæsthesia. There is no disturbance of sensation definitely made out in left foot. Posteriorly, there is marked disturbance of sensation for pain and for temperature, from the upper part of buttocks to just above the knee. That is about the distribution of the lesser sciatic nerve. Tactile sensation is little disturbed over this area. No disturbance in muscular sensation can be determined except in toes of the right foot. Muscular power for flexion at the hip is good, extension is good at the hip and the knee, but flexion of knee is very weak. Flexion of right ankle is absent, and extension poor. The left ankle is weak for both. Reflexes at knee, at ankle, and at sole are abolished, Babinsky sign absent. Patient, on standing with eyes closed, rocks from side to side markedly; with eyes open and hand touching some object, can stand steadily. She walks with some help, with typical ataxic gait. She describes her difficulty in walking as due, not to weakness, but "to not knowing just where things are."

February 9th. Both thighs react entirely normally, anteriorly and posteriorly. The right leg acts tardily to both faradic and galvanic currents, but there is no reversal of the poles to the latter. The left leg shows the same condition in the posterior group of muscles, while the anterior tibial group shows lack of response to both faradism and galvanism, thus indicating a rather complete degeneration. The general motor power is very much improved since January 23d, but

the right anterior tibial group is still paralyzed. The teflexes and sensations are practically the same as on that date.

May 2, 1906. Examination and report of her present condition, by Dr. William M. Leszynsky, neurologist of the hospital. The patient is now able to walk with slight assistance, or by the use of a cane. There is a mild degree of static ataxia; the gait is unsteady, with some dragging of the right lower extremity; the posterior thigh muscles are paretic on both sides, but more pronounced on the right side; partial foot drop on the right side due to paralysis of the peronei muscles; loss of muscular sense in the toes of the right foot; there is an area of anæsthesia over the right leg corresponding with the fifth lumbar segment; the knee jerks, plantar and Achilles reflexes are absent; the faradic irritability is preserved in the peroneal nerves, but there is quantitative diminution in the reaction of the paretic muscles. The lumber muscles, iliopsoas and the quadriceps groups are intact. The bladder and rectum functionate normally.

Case III.—Haynes. Gunshot wound of the cauda equina. P. M., aged thirty-four, Italian, was shot at close range on December 15, 1905. The wound of entrance was three fourths inch to the right of and on a level with the spine of the first sacral vertebræ. The wound was dressed antiseptically. At first the abdomen seemed somewhat sensitive and slightly rigid, and the possibility of a wound to some abdominal viscus from behind was entertained. The abdominal symptoms disappeared, but at this time the temperature began to rise until on the 17th it reached 104.6°, but the pulse was only 96. Slight stiffness was noticed in the muscles of the back of the neck on the second day after admission; by the following day there was so much contraction of these muscles as to draw the head backward and prevent the patient from lying on his back. The spine was slightly tender to forcible pressure. There was no paralytic symptoms except that there was retention of urine and incontinence of fæces.

With the subsidence of the abdominal symptoms, with the high temperature, and rigid muscles of the neck I concluded that there was probably an infection of the spinal meninges, and that free drainage was required. Without any expectation, therefore, of finding the bullet, and merely to drain the spinal canal, a laminectomy of the fourth lumbar and first and second sacral vertebræ was performed on December 17th. The tract of the bullet led to the spinal canal. Just outside the laminæ a patch of cloth about three eighths of an inch in diameter was found. On opening the canal free hæmorrhage from around the dura followed. There was a wound through the dura. After splitting up the dura a free discharge of bloody serum (cerebrospinal fluid) took place. The bullet was discovered imbedded exactly in the centre of the mass of nerve cords and removed. The wound within and external to the dura was drained by an iodoform wick, and the muscle mass loosely sutured and the skin partially closed.

From December 19th to 31st the temperature gradually dropped from 103° to 99½°, and the pulse from 120 to 90. On December 26th the patient had a spasm of the facial (chiefly oral) muscles, with slight jerking of the head backward. No other spasm was noted. The wound discharged pus freely. The rigidity of the cervical muscles gradually disappeared.

On December 31st the temperature went up to 105 2-5° and the pulse to 128, without apparent change in his general condition. This condition gradually subsided, and in two weeks the normal was regained for morning records, with evening rises of 100° for temperature and 100 in pulse rate.

January 3rd. The wound was granulated nicely, with considerable discharge of a thin, bloody, watery fluid.

Present condition, January 31st. Still retention of urine and incontinence of fæces, but the incontinence of fæces is not so troublesome as at first. He has some sensation of a pending movement that gives him time enough to secure the bed pan or to go to the closet, but no control over the movement.

The wound has healed except for two very small sinuses at either end of the incision (which closed later. Patient is out of bed and around the ward. There is no rigidity of muscles in neck or back. The appetite is good, and pulse and temperature are running close to the normal.

(*To be concluded.*)

SURGICAL ANÆSTHESIA AS PRODUCED BY NARCOTIC ALKALOIDS, WITH ESPECIAL REFERENCE TO THE ANTIQUITY OF THE METHOD.*

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Historical. In 1900 Schneiderlin (1) published an article showing that surgical anæsthesia could be produced by the use of scopolamine, an alkaloid of the atropine series, combined with morphine. As modified by various observers, from 0.01 to $^1/_{17}$ grain of scopolamine hydrobromide with from $^1/_3$ to $^3/_5$ grain of morphine are given in one, or more often are divided into three equal doses which are injected subcutaneously at intervals, beginning from one to four hours previous to the operation. In from nine to twenty-six per cent. of the cases thus treated there results a narcosis sufficiently profound to permit the performance of major surgical operations, but in the remaining cases the patient remains awake, is merely stupefied, or becomes excitable, and even actively delirious, and for efficient anæsthesia it is necessary to increase the dosage or resort to some other drug, such as ether or chloroform. Used as an adjunct to inhalation anæsthesia the method involves no new principle. In 1861 Pitha related a case in which "after chloroforming a patient in vain," he induced twelve hours of complete and placid narcosis by injecting twenty grains of belladonna extract into the rectum (2). In 1863 Nussbaum, of Munich, fearing to prolong the use of chloroform in an operation for tumor of the neck that already had lasted an hour, gave one grain of morphine by hypodermic injection, and noted that the patient slept on for some twelve hours. Pleased with this result he records this and three similar observations (3). Acting upon Nussbaum's report, a committee appointed by the Versailles Medical Society investigated the subject and concluded that the salts of morphine alone cause torpor but not insensibility; but when given during the administration of chloroform they may prolong the anæsthesia in a remarkable manner (3a).

About this time (1864) Claude Bernard accidentally noted the value of morphine in prolonging anæsthesia in a dog, and making the matter the subject of experiment, found that the administration of morphine before chloroform rendered smaller doses of chloroform needful, while the anæsthesia produced was more profound (4). Bartholow, in his prize essay of 1869, advocated the hypodermic injection

* Read in part before the Philadelphia County Medical Society, October 15, 1905.

of atropine before the inhalation of chloroform, and J. C. Reeve, of Dayton, Ohio, combining (1876) the observations of these previous observers, injected subcutaneously a solution of atropine and morphine before the induction of anæsthesia by the ACE mixture. Reeve commended the method and used from two thirds to three fifths of a grain of morphine with about one eightieth grain of atropine twenty-five to forty-five minutes before the time of the operation (5 & 6). From 1872 narcotics were largely used by continental surgeons as an aid to inhalation anæsthesia, and the principle has repeatedly been revised with certain modifications since the time of the original investigations by Claude Bernard. In 1893 Rabeteu, in order to secure narcosis from small doses of chloroform, experimented with narcine hydrochlorate, thebine, and papaveine, and especially commended the former drug. Narcine is such a feeble hypnotic, however, that it is probable that the alkaloid used by Rabeteu was impure. In 1894 Langlois and Marange contended that the tendency to primary or secondary syncope incident to chloroform anæsthesia could be lessened by injecting one half to two thirds of a grain of sparteine sulphate and one eighth of a grain of morphine, ten minutes before the inhalation.

The historic case in which E. R. Smilie, previous to August, 1846, produced surgical anæsthesia, and had opened a sinus of the neck by an inhalation of the ethereal tincture of opium, can hardly be considered as an example of the use of opium to facilitate the action of ether. Smilie thought that he was narcotizing his patient by opium, while in reality the effects produced were due to the ethereal menstruum (7). In 1879, Priestly Smith cautiously advocated that a moderate dose of chloral be administered previous to the induction of the anæsthesia. After using this in about forty cases he concluded that it reduces the previous apprehension and resistance, the irritability of the respiratory passages, the amount of ether required, and also the after nausea (9). Smith observed no evidences of danger, but a well known Philadelphia surgeon who attempted to chloroform a debilitated patient after the administration of chloral, had the mortification of seeing his patient promptly die.

The administration of whiskey before chloroformization may, in some degree, be classed as a form of mixed anæsthesia.

Anæsthesia Without Inhalation. As early as 1847, Pirogoff devised an apparatus for rectal etherization. The ether vapor was introduced into the bowel by a simple tube, and the evolution of vapor, and consequently the depth of narcosis regulated by the depth of introduction of the ether container into hot water. The method has been revived from time to time, but has been found to cause in many cases a prohibitive degree of irritation of the bowel (8).

The production of surgical anæsthesia by narcotic drugs without the use of ether or chloroform is not an innovation of the twentieth century. Not only have operations from time to time been done upon patients benumbed by alcoholic intoxication, but various hypnotics have also been employed. On June 23, 1873, M. Surmay successfully amputated a leg for traumatic gangrene under the narcosis produced by repeated doses of extract of opium given in pill form, and of a syrup containing chloral. The patient being sixty-three years of age, having delirium tremens and bronchial catarrh, was considered to be unsuited for the administration of chloroform (10).

Oré, of Bordeaux, experimented in the early seventies with intravenous medication, and in 1874 reported upon the anæsthesia that could be produced by introducing chloral into a vein of the arm. Using a thirty-three per cent. watery solution of chloral hydrate, Oré gradually injected this into the vein, regulating the dose by the symptoms induced. For this method it was asserted that there was an absence of preliminary excitement, of after nausea or vomiting, and a blunting of the patient's sensibility. The brevity of the narcosis (ten minutes), the dyspnœa, occasional irregularity of the heart's action, and even fatal syncope, and the presence of blood and albumin in the urine after anæsthesia were enough to throw the method into disfavor (11).

In 1875 Nairne, of Glasgow, removed three metatarsal bones from a delicate girl of three and one half years while under the influence of thirty grains of chloral, given by repeated hypodermic injections and by mouth. Sleep lasted two hours, and there was no after nausea, or serious depression. Ten years ago we noted that minor operative measures upon patients with sthenic alcoholic mania could be done with but little resistance or expression of pain after a subcutaneous injection of one tenth grain of apomorphine muriate (12).

Anæsthesia Previous to 1846. There is abundant evidence that physicians endeavored to relieve patients of operative agony previous to Morton's immortal demonstration. In the early part of the nineteenth century surgeons held conflicting views as to the value of narcotics previous to operation. Dorsey and Mott gave laudanum or other opium preparation before painful operations. Morris used opium and whiskey, and Physick, in order to secure sufficient relaxation for the reduction of a dislocation of the jaw, used alcohol to intoxication and relaxation instead of the customary phelebotomy (13). Enemata containing lobelia or a decoction of tobacco were also employed to produce relaxation, especially in the reduction of dislocations.

Gross wrote that he was fond of using full doses of morphine, which he combined, when the patient was sufficiently strong, with a moderate quantity of tartar emetic with the view of inducing greater relaxation and insensibility. This, he contended, was commonly productive of "great benefit, not only blunting sensibility, but preventing shock, and consequently severe reaction" (14). It was not alone pain, but the inability to do delicate operations upon a struggling patient, that impelled surgeons to search for means of narcosis. Thus, James Wardrop in 1819, attempted to remove a recurrent and very sensitive bony tumor from the orbit of a young woman, but the patient's struggles were so great that the operation could not be done. Wardrop, therefore, had the patient sit in a very warm room, containing seven people. The doors and windows were tightly closed, and a large vein was freely opened in order to induce syncope. Fifty (50) ounces of blood were withdrawn before the patient fainted, but then the patient was unconscious for a sufficient length of time to permit the removal of

the tumor. After the operation the patient had no recollection of the use of the knife, but was pale and feeble for a few days, and then she rapidly recovered. Wardrop does not advocate the method for general adoption, but only in special urgent cases, when he contends that it may be "ventured upon fearlessly" (15).

It is not strange that the dangers and disadvantages of such a method prevented its popularization. Much to be preferred is the aboriginal manœuvre of the Javanese which consists in producing cerebral anæmia and insensibility by mere digital compression of the carotids. Curiously enough the literal translation of the terms employed in both the Greek and Russian for the carotid is "the artery of sleep," but this name has been ascribed to the fact that these vessels show marked pulsations during deep slumber. Previous to Mr. Wardrop's method was that of Mr. Moore, of London, who in 1784 endeavored with, at least partial success, to secure local anæsthesia of a limb by compression of the main nerve trunks. These mechanical measures, however, digress somewhat from our subject which concerns chiefly the use of hypnotic drugs for purposes of anæsthesia.

Anæsthesia In Ancient Times. In writings from the most ancient times until the eighteenth century may be found allusions to anæsthesia for surgical purposes.

In a German work published in 1782, it is related that Augustus, King of Poland, had a mortification of the foot, and his surgeon having surreptitiously thrown him into a stupor by the use of a potion, the dead parts were amputated, so it was not until he awoke the following morning that the king realized that amputation had been done. This was not a clear case of anæsthesia, for, as Silvester suggests, the instance may merely have been the removal of dead, and therefore insensible tissue, while the patient was under the influence of an ordinary sleeping potion. There is sufficient evidence, however, that in the seventeenth century it was known by tradition that ancient surgeons produced anæsthesia in patients upon whom they operated, although in the middle ages the method had passed out of practice. Thus in Middleton's tragedy, *Women Beware of Women,* published in 1657, occur the following lines:

"I'll imitate the pities of old surgeons
To this lost limb,
Who, ere they show their art,
Cast one asleep, then cut the diseaséd part."

The best known of ancient drugs used to produce anæsthesia was one of the solanaceæ, atropa mandragora, or the mandrake of Southern Europe. This drug depends for its action upon scopolamine, hyoscyamine, and other alkaloids. Mandrake is mentioned in the earliest medical writings of antiquity, and its properties seem to have been well understood until the thirteenth century when it became lost to medicine, although knowledge of its action remained as a memory. Shakespeare repeatedly alludes to its powers, and Richardson even contends that the potion of Juliet was the ancient preparation of mandragora. Iago, musing upon the distraught Othello, exclaims,

"Not poppy, nor mandragora,
Nor all the drowsy syrups of the world,
Shall ever medicine thee to that sweet sleep
Which thou ow'st yesterday."

And Cleopatra cries to Charmian,

"Give me to drink mandragora
That I may sleep out this great gap of time
My Antony is away."

The principle of scopolamine-morphine narcosis seems also to have been known in the fifteenth century, for in Marlowe's *Jew of Malta* occurs:

Calymeth. "Did'st break prison?"
Barabas. "No, no.
I drank of poppy and cold mandrake juice
And lying asleep, belike they thought me dead,
And threw me o'er the walls."

It is reported that in the thirteenth century, the physician Hugo de Lucca extensively used mandragora for the purpose of anæsthesia. A preparation of wine of mandragora, known as morion, or death wine, is said to have been given in ancient times to those subjected to torture or to prolonged or painful death. According to a Jewish tradition, mentioned by Richardson (16), at the time when death by crucifixion was one of the Roman punishments, it was the custom of the women of the grand sanhedrin to visit the prisoners upon the cross and to administer to them a sponge charged with morion. The sufferings allayed by the drug, the victim passed into a death like sleep. After removal from the cross recovery took place so frequently that the Roman soldiers were commanded to mutilate the bodies of all the crucified before permitting them to be removed by their friends for burial.

Dioscorides and Pliny give precise directions for the preparation of a solution of mandragora. Of a decoction of mandrake root, boiled down in wine to one third of its former volume, Dioscorides directs that one third of a cupful is to be taken when one suffers pain, and remarks that "Physicians also employ this remedy when a necessity arises for amputation, or the employment of the actual cautery." According to Pliny, "those who take it improperly are made mad for a time; if the dose be too large they usually die, yet it may be safely enough given to produce sleep." Apuleius says: "If one is to have a limb mutilated, burnt, or sawn, he may drink one half ounce (of mandragora) with wine, and whilst he sleeps the member may be cut off without pain or sense." Paulus Ægineta also refers to the heavy sleep and stupor produced, and Hippocrates advises that it be given in tetanus in doses not sufficient to cause delirium. The ancient Syrian writings are nearly barren of references to anæsthetics, yet it is said that in the Persian work Ihliyant Badé, the statement occurs that the taking of atropa mandragora inwardly renders one insensible to the pain of even cutting off a limb.

Reference is also made by Dioscorides to the usefulness of the remedy in promoting parturition, and Silvester (17), referring to the book of Genesis (18), suggests that when Reuben brought mandrake to Leah, Rachael's strenuous endeavor to obtain the

drug was for the purpose of enabling her to escape the pains of her approaching confinement. Sir Thomas Browne in *Vulgar Errors* (1646) naively writes, "It is a common conceit that Rachael requested these plants as a medicine for fecundation. . . . Which notwithstanding it very questionable." "As for its proper nature, the ancients have generally esteemed it narcotic or stupefactive, and it is to be found in the list of poisons, set down by Dioscorides, Galen, Aetius, Æginita, and several antidotes delivered by them against it. It was, I confess, from good antiquity, and in the days of Theophrastus, accounted a philter or plant that conciliates affection; and so delivered by Dioscorides. And this interest might seem most probable, had they not been the wives of holy Jacob; had Rachel presented them unto him, and not requested them for herself."

In 1869 Richardson secured specimens of mandrake root and imitated the ancient preparation. Experimenting upon lower animals, Richardson found confirmation of the claims made for this drug by the ancients, and as a result of his experiments he advocated that the drug be tried as a local and general anæsthetic. No attention seems to have been given to this suggestion.

Other members of the belladonna family have also been used to produce anæsthesia. The thoughtful thug of India frees his victim from mental distress during his depredations by the administration of daturia, and centuries ago a Japanese author wrote, "When medicines are ineffectual, as well as acupuncture and the cautery, the abdomen and back may be opened, and the stomach and intestines washed." On such occasions narcotic preparations containing datura, aconitum, and other drugs were to be used (20).

In the surgery of Theodoric, an Italian work of the thirteenth century, it is commended that the *Spongia somnifera* be placed over the nostrils of a patient about to have an operation. This consisted of a sponge saturated with a mixture containing opium, mulberry, hyoscyamus, hemlock, mandrake, lettuce seeds, and other drugs. As it was directed that the patient be firmly bound, it is evident that the method was not expected to always produce complete relaxation, nor is it likely that the vapor arising from such a sponge would be strongly anæsthetic. It is possible, however, that sufficient of the narcotic mixture might enter the nose or mouth to influence the organism.

The celebrated Chinese physician, Hoa-Thoa, who lived during the early part of the third century, gave to patients a preparation of hemp, and at the end of some time, it is said, the patient became as "insensible as if he had been drunk or deprived of life." "Then, according to the case, he made openings and incisions, performed amputations, and removed the cause of the mischief without the slightest pain during the operation."

Herodotus refers to the Scythian method of narcosis by the inhalation of vapor from hemp, or of certain seeds thrown into the fire, and the fabled Nepenthe of Homer (850 B. C.) suggests how ancient is the mental concept of anæsthesia (22).

How fully are the writings of the ancient surgeons corroborated by modern practice? If we were deprived of the use of ether and chloroform would it be possible to operate under the routine administration of derivatives of the solanacea and papaveracea? Nearly all writers upon scopolamine-morphine anæsthesia refer to the necessity of resorting to ether or chloroform in the greater number of cases. To more precisely determine the limitations of the method of Schneiderlin, for nearly a month we employed no ether or chloroform by inhalation (except in infants) in the surgical service at the Samaritan Hospital, although Hoffmann's anodyne, and occasionally whiskey, were given by mouth or the rectum (23). Using moderate but frequently repeated doses of morphine-scopolamine, reinforced by a small amount of apomorphine, we found it possible, during this time, to make nearly every patient oblivious to the pain of the operative procedure, although operations upon the head, respiratory tract, upper abdomen, pelvis, and extremities were performed. While the patients almost invariably awoke without recollection of operative pain, restraint was required for about seventy per cent. of the patients, and in these cases the operation was, of course, done with less facility than is usual under inhalation anæsthesia. The importance of the ancient direction that the patient be firmly bound to the operating table was thus evident, but this did not negative the ancient statement that the patient awakes entirely insensible of what has occurred. As to the use of mandragora alone for purposes of anæsthesia, we hope soon to be able to report the results of modern clinical experience.

Without discussing the dangers of anæsthesia by narcotic alkaloids, which we believe to have been overestimated, it may be concluded:

(1) That surgical anæsthesia can be produced by the method of Schneiderlin.

(2) That the use of scopolamine-morphine as an adjunct to ether or chloroform is but a modification of a practice in use for over thirty years.

(3) Scopolamine-morphine narcosis is but a refinement and rehabilitation of the anæsthesia of two thousand years ago.

(4) The efficacy of scopolamine-morphine narcosis in the twentieth century proves that in mandragora-poppy narcosis surgeons in the first century had an efficient method of anæsthesia.

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3302 North Broad Street.

A CASE ILLUSTRATING THE EFFECT OF LONG CONTINUED PRESSURE UPON THE INTERIOR OF THE MASTOID BY A FLUID OF LOW INFECTIVITY.

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The following case, which was seen in conjunction with Dr. David Webster and Dr. S. M. Payne, is reported on account of its pathological interest:

Previous History.—For a number of years the patient, a woman, aged twenty-five, had had at frequent intervals in the right ear attacks of neuralgic pain accompanied by deafness and a feeling of stuffiness, but with no discharge. The hearing in the ear had gradually been lost. A year and a half ago during one of these attacks she had, in addition to these symptoms, violent pain in the mastoid region, and following this she noticed a slight swelling behind the ear, which was moderately tender to touch. The pain of this attack abated, but the tenderness and swelling which slightly diminished continued for about five months, when owing to an exacerbation of the symptoms she sought the advice of her physician.

At this time there was no discharge from the meatus, but upon close questioning she recalled having removed from the canal several times during the preceding months a slight amount of whitish matter, the odor of which she had failed to note. Throughout the entire period of her illness she had neither chill, fever, nor sweat.

Present Examination.—Patient is a bright, well nourished woman who complains of violent pain radiating from the mastoid region throughout the right side of the head. Immediately above the superior attachment of the auricle to the scalp there is a soft, resilient swelling, the size of a hen's egg. The skin over this area is not reddened and there is no œdema surrounding the tumor. No tenderness is elicited on moderate pressure, and the absence of doughy induration seen in subperiosteal abscess is striking. The tumor appears to be noninflammatory in origin, and on palpation is elastic, feels much like a hydrocele, and gives the impression of a cyst. It is impossible to obtain a view of the fundus of the canal, owing to the closure of its cartilagineous portion by the sagging of its superior wall which meets the floor. No discharge is found in the meatus, and on wiping the depths of the canal the cotton applicator remains dry. The examination of the eyes is negative, respiration and pulse are normal. Cerebration is clear.

Operation.—On making the postauricular curvilinear incision there was evacuated a small quantity of pus, together with an ounce or more of pale, straw colored, ropy material resembling in appearance and consistence the white of an egg. As the wound refilled a marked pulsation, transmitted to the fluid from the brain beneath, was to be seen. On introducing the finger into the incision it entered directly into the mastoid cavity, and upon complete exposure the entire structure of the mastoid, including the cortex, was found absent. The bottom of this cavity was formed by the dura covering the anterolateral surface of the cerebellum, that of the sinus, and that of the inferolateral aspect of the temporosphenoidal lobe. Attached to the dura and separating it from the fluid contents in the mastoid cavity, was a thin, delicate, cyst like pellicle which detached with readiness from the meninges, leaving this latter structure of a finely granular, but healthy, red appearance. The posterior canal wall, with the exception of its extreme inner end, had disappeared. The effect of pressure absorption was beautifully illustrated at the posterior root of the zygoma. There the pneumatic structure had disappeared, and the posterior root was represented as a cup shaped depression absolutely smooth; it appeared to have been excavated with a burr. The tegmen tympani was absent, the membrana tympani intact, the tympanum filled with large, pale, flabby granulations. The inner end of the anterior wall of the auditory canal was eroded, and the joint of the inferior maxilla exposed. The Eustachian tube was of enormous size and packed with granulations similar to those occupying the tympanum. From the collection of subperiosteal fluid immediately above the pinna a sinus lead forward over the zygomatic arch into the temporal fossa; from this, material similar to that occupying the cavity of the mastoid was drained. The response of the dura, in the production of the cyst like pellicle to long continued pressure by a fluid of low infectivity was interesting.

The further history of the case was that of an uneventful healing without rise of temperature.

44 West Forty-ninth Street.

THE DANGERS THAT MAY LURK IN ORDINARY MILK, AND THE DUTY OF THE PHYSICIAN TO EDUCATE THE PUBLIC AND THE AUTHORITIES IN THE NECESSITY OF A PURE MILK SUPPLY.*

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E. R. Larned (1), writing in 1903, observes that "to relieve suffering and prolong life is the privilege of the physician, but to prevent disease is his duty," and our title of doctor implies that we are, or ought to be, not only the healers, but also the teachers of those with whom we are brought in contact. Our patients, and the community at large, look to us for instruction and guidance in all matters pertaining to their health. They desire us to heal them when they are sick; but they desire still more to be instructed how to prevent themselves and their families from falling into sickness. An all sufficient reason for our bounden duty in this respect is that physicians are so often more powerless in the cure of disease than they are in its prophylaxis. In none is this so conspicuously true as in the diseases caused and transmitted by impure milk; they are easily

* Read at a meeting in the interest of a pure milk supply, Philadelphia Pædiatric Society, May 8, 1906.

preventible, but are often difficult to cure, and are frequently fatal.

Milk is one of the most important, as well as the cheapest, animal food, and is well adapted to form a large portion of our dietary; it constitutes the daily food of large numbers of the human race, and is the sole nourishment of infants, and, to a great extent, of little children, and of the sick and the feeble. Its consumption is enormous; the city of Philadelphia consumed last year (1905) 120,400,970 quarts, or 330,000 quarts daily. To the average householder it is sufficient if this universal food is brought regularly to his door every morning, if it appears to be free from dirt, and if it contains a fair amount of cream; if it is delivered in glass jars his satisfaction is complete. But he should know that, although milk may support life and promote health, it may also carry and cause disease and death; that it may poison, as well as nourish.

Clearly, it is the duty of the physician to know and to understand what the dangers are that may lurk in milk, that he may advise and instruct the community, so that it will desire and demand, and influence legislators, so that they will provide pure milk for all—for the workingman as well as for the millionaire (Backhaus (2)). I propose, therefore, this evening, even at the risk of being trite and perhaps somewhat wearisome, to briefly recapitulate what some of the dangers of impure milk are. It is well known to all that milk, as it comes from the udder, is practically sterile, but rapidly becomes unclean and germ laden, according to the method of its handling and the care and rapidity with which it is transported. Ordinary market milk is generally a dirty and contaminated fluid; dirty and germ laden to a degree which intelligent and cleanly people would not tolerate in any other food. To this dirt, to these germs, the great mortality of artificially fed infants, which, Groth (Finkelstein (3)) tells us, exceeds by seven times that of breast fed babies, may in large measure be attributed; only a minimum being attributable to chemical, biological, and other differences between human and cow's milk. This is the main reason also why the danger of death from diarrhœal disease is seventy times greater among the bottle fed than among artificially fed children (Harrington (4)). One need only to visit an ordinary dairy farm or milk shop to be convinced of the carelessness with which milk is produced and handled. Dirt gains entrance to the milk from the cow, the stable, the milkers, from uncovered and uncleaned utensils, from flies, during its transportation to the city and its delivery to the consumers. Is it any wonder that ordinary market milk contains from hundreds of thousands to several million bacteria in each drop? Backhaus's (2) experiments demonstrate how readily milk may be contaminated. This observer found that while freshly milked milk contained 6.6 mille bacteria per c.c., the same milk, after passing through six well cleaned vessels, possessed 97.6 mille; and A. H. Stewart (5) has recently shown that apparently well cleansed sterilized bottles and cans are capable of contaminating milk, and urges that farmers and city receiving stations have proper equipments for the thorough cleansing of bottles and milk cans.

Improperly fed cows may furnish milk capable of causing illness, as may the milk of cows to which various remedies and drugs have been administered (Kober (6)). The cow may be diseased, either generally or locally (in the udder and teats). Sore throat from garget in the cow, or diarrhœa from it or other septic conditions of the udder, may occur. Pus, streptococci, and staphylococci are repeatedly found in milk. No farmer would permit a cow with inflamed udder to suckle a calf, yet does not hesitate to sell pus containing milk from such an animal (Larned). Foot and mouth disease has been transmitted through milk, and so has anthrax, according to some authorities; about this latter there appears to be some doubt, although I am sure none of us would care to drink, or recommend to others to drink, milk from an animal suffering from this infection; and the same may be said of cowpox, pleuropneumonia, and tetanus.

Poisons may develop from the growth of bacteria in milk. Numerous instances of this so called ptomaine poisoning, seriously affecting large numbers of people, and even causing death, are on record (Newton and Wallace (7), Furth (8)). That tuberculosis may be acquired in this way, especially in infants and young children, and in the digestive tract, even though infrequently, I think, cannot be questioned. Of the various diarrhœal diseases so prevalent in bottle fed babies, unclean milk is one, although not the only cause; overfeeding, improper feeding, atmospheric conditions (extreme heat) all lend their quota. One cause, however, is the presence of a bacillus found in horse drug, which, with that of the cow, is a frequent ingredient of milk.

Milk may be contaminated with the germs of infectious disease after it leaves the udder of the cow. Up to 1901, 330 epidemics due to infected milk had been recorded (Kober (6), Hamill (9), Freeman (10)). Ninety-nine of these were epidemics of scarlet fever. In 19 of the outbreaks, it is true, the infection was attributed to puerperal fever and inflammatory conditions of the udder of the cow, and were probably not true scarlet fever. Thirty-six outbreaks of diphtheria have been traced to milk. Here, again, a small number—twelve—could be ascribed to diseased conditions of the udder and teats—were, in fact, instances of pseudodiphtheria. Of that omnipresent disease, which decimates Philadelphia, cutting off the flower of its youth, viz., typhoid fever, 195 epidemics had, up to 1901, been reported as caused by milk. In a State which, like Massachusetts, guards its water sheds from infection, impure milk is responsible for more outbreaks of typhoid fever than polluted water; within the past year every important epidemic of this disease in Massachusetts has been traced to insanitary milk (Harrington). Finally, Asiatic cholera, in countries where it prevails, has been disseminated by milk, as have also epidemics of acute enteritis from a similar condition in the cow (Hamill, Freeman).

In view of this formidable array of facts as to the possibilities of milk as a cause of disease and carrier of infection, the duty of the physician seems clear enough. People should know these things, and who can inform them better than

their medical attendant, or the pædiatrist, to whom they bring their children when ill. The difficulty of arousing popular interest in this matter is notorious. Physicians themselves are singularly apathetic. More astonishing still, hospital managers, who willingly furnish their patients with the most expensive drugs and apparatus, are contented to serve these same sick people with milk obtained from the cheapest dealer without any inquiry as to its source. Imagine the effect of this policy on producers and purveyors of milk! Surely the physicians connected with such institutions have a plain duty before them.

One of the greatest obstacles to the gospel of clean milk is the increased cost which its production entails. This is a difficulty which cannot be entirely overcome, I believe, until the State supervises the production of milk. People should know that, like every good thing, good milk costs more than poor. Curiously enough, it is often the rich more than those in moderate circumstances, who are apt to object to high priced milk. Perhaps it is, as Rotch (11) observes, because the poor man, seeing his children, of which he generally has more than his rich brother, sick and often dying from the diseases caused by unclean milk, does not hesitate to get better milk, just as he procures expensive antitoxine when his children are ill with diphtheria. When people complain of the cost of good milk, it is well to explain that the more polluted milk is, the quicker it will spoil, and thus prove a loss to the householder and the vender. This is the source of great waste. On one day in September last 5,000 quarts of spoiled milk were destroyed by one dealer in this city (A. H. Stewart (5)). Because of its appeal to the pocket, this should be an argument of some weight. If, as R. A. Pearson (12) suggests, it has been explained to consumers that good, clean, milk calls for greater intelligence, much harder work, and heavier expenses in its production than ordinary milk, they would, perhaps, in many cases, be willing to pay the advanced price. How the cost may be increased by imperfect inspection of milk is shown by the experience of Chicago, where it was found that as soon as inspection was hampered, the number of watered samples increased immediately, the city actually paying $5.27 a day for water brought in from the suburbs. This is a sufficient answer to the objection to the expense of municipal laboratories (*American Medicine* (13)). As the price will always prove a stumbling block to the use of clean milk, it is the duty of physicians to exert all their influence to bring about an efficient official control of the milk supply. It is the duty of physicians, furthermore, to point out the risks attending the use of sterilized and pasteurized milk. Of sterilized milk it should be understood and explained that its nutritive properties are less than those of fresh milk; that in heating milk to a high degree its biological properties are altered; its natural ferments, as well as valuable antitoxic and immunizing substances, destroyed; that it may cause scurvy, rickets, anæmia, and diarrhœa, especially in young sucklings; and that it and pasteurized milk are but makeshifts, and can in no way take the place of clean, fresh milk. Too often commercially heated milk is but "renovated milk," more dangerous than ordinary raw milk, because of the false sense of security which it produces. Physicians should instruct their patients in the domestic care of milk; that it should be kept cool, covered, and clean; that it is well to filter ordinary milk through cotton before using; that milk bottles should be thoroughly cleansed before returning to the milk man; and that the practice, so prevalent in Philadelphia, of placing empty milk bottles, without stopper or cover, on the doorstep over night is not a cleanly one. Imagine the amount of manure and street dirt these unstoppered bottles must collect during the nine or ten hours they are awaiting the morning rounds of the milk man!

The beneficent work of the milk commissions in this and other cities it is the duty of the intelligent and progressive physician to earnestly support and urge upon the public. It is the profession's reproach that the excellent, painstaking, and self sacrificing work of these commissions has suffered so much from its indifference. Even now in large cities are to be found medical men who are unaware of their existence. If these commissions should receive support from the State or municipality, or be under municipal control (and physicians should endeavor to further this end), much good would be accomplished, and many thousands of lives saved that now perish. What can be achieved in this direction is shown by the work of the Royal Danish Veterinary School in supervising the milk supply of Copenhagen; "at no place," says Larned, "are modern methods in such general use, nor are they controlled with such efficiency;" and in our own country, in the city of Rochester, N. Y., where a system of municipal control of the whole milk supply and of municipal milk depôts for the distribution of milk to the poor has accomplished remarkable results. By the Rochester plan municipal supervision begins at the farms and continues until the milk is delivered to the consumer. In the city of Rochester, according to its health officer, Goler (14), the municipal milk depôts have, in eight years, reduced the infant mortality to 864, as compared with 1,164 during the preceding eight years, notwithstanding that the population has increased 30,000 during the later period. Rochester has a population of 170,000, and consumes 65,000 quarts of milk daily, and what it has been able to accomplish, other and larger cities can, and will accomplish, if we, as physicians, will do our full duty in educating the public and our legislators in this important matter. I have no desire to senselessly decry the present municipal milk supervision in our large cities; for with very few exceptions, there is some supervision of the milk supply in all of the larger cities and towns of the United States (R. A. Pearson (15) and H. E. Alvord (15)), and in Philadelphia the improvement in late years has been most encouraging; but the supervision now in vogue is totally inadequate, and does not begin to meet the requirements of the situation. The intelligent and efficient State and municipal control of the milk supply appears to be the most satisfactory solution of the pure milk problem.

In conclusion, the duty of the physician in pro-

curing for the people pure and healthful milk is so plain that he who runs may read. A great responsibility rests upon us. To paraphrase the words of the late Dr. Goodell, in speaking of quite a different matter, as hygienists, if not as moralists, as physicians, if not as citizens, as guardians of the public health, if not as philanthropists, let us see to it that we take a bold stand for clean milk, that in the end we are not held in strict account for the knowledge we have this evening gained.

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1801 PINE STREET.

THE DANGER OF WEAK SOLUTIONS OF CARBOLIC ACID WHEN USED IN SURGICAL DRESSINGS. A PLEA FOR RESTRICTING THEIR SALE.*

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New York,

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The present law in the State of New York in reference to the sale of carbolic acid forbids druggists to sell solutions stronger than five per cent., except on an order or prescription from a physician. The law as it exists, aims to prevent the would be suicide from obtaining easily a deadly poison. As far as it goes the law is good, and has, I believe, accomplished considerable in diminishing suicide by this means, but it does not take cognizance of the harm that may so easily result when a weak solution of carbolic acid is used as a surgical dressing by those who do not know its dangers. I am perfectly aware that some textbooks (1) advise the application of carbolic lotions and salves up to three per cent., but if any one has doubt as to the harm done by their use, a call at any dispensary which treats surgical cases will surely dispel them.

Even very weak solutions and ointments when applied to terminal parts, such as fingers, toes, and ears, may and often do cause death of tissue and, more rarely, constitutional symptoms. The fact that such weak solutions are anæsthetic renders them the more dangerous, as the effect is painlessly produced. That this danger is real is known to most physicians, but some there are who fail to recognize it, and druggists as a class seem to be altogether oblivious of the possibility of harm resulting from the application of carbolic acid solutions of five per cent. and less.

The literature contains numerous reports of cases in which this agent was responsible for disastrous results. In two cases reported by Fisher (2), in which the fingers were wrapped in bandages wet with carbolic solution (about one and seven-tenths per cent.), there resulted complete gangrene, necessitating amputation; and Douglas Crawford in the *Lancet* (3) reports a case in which two and one-half per cent. carbolic compresses were applied to the legs preparatory to osteotomy with coma resulting five hours after the dressing was applied. The child was revived only after vigorous stimulation.

Case.	At Whose Direction Used.	Strength of Carbolic Acid.	Result.
1	Patient's	One teaspoonful of pure phenol to a cup of water, *i. e.*, about 2 per cent.	Gangrene of skin
2	Physician's	(?)	Complete gangrene
3	Druggist's	Diluted	Superficial gangrene
4	Patient's	"	" "
5	"	"	Dermatitis
6	"	Ointment, strength unknown	"
7	"	Diluted	Superficial gangrene
8	"	"	Extensive gangrene
9	Druggist's	"	Superficial gangrene
10	"	Ointment, strength unknown	" "
11	Patient's	Diluted	Burn, 2d degree
12	"	One teaspoonful pure phenol to one pint of water	Superficial gangrene
13	"	Diluted	Dermatitis
14	Druggist's	Ointment and lotion, strength unknown	Burn, 2d degree
15	"	Ointment	" "
16	Patient's	One teaspoonful pure phenol to one pint of water	" "
17	Physician's	Diluted	Superficial gangrene
18	Patient's	"	Dermatitis
19	Physician's	Ointment, strength unknown	Superficial gangrene
20	Druggist's	" " "	" "
21	"	Diluted	Dermatitis

The majority of the tabulated cases are from the records of the class in surgery, Mount Sinai Dispensary, in charge of Dr. Charles Goodman, to whose courtesy I am indebted for the privilege of reporting them.

Harrington has collected reports of one hundred and thirty-two cases of gangrene following the application of carbolic acid solution (one to three per cent.); of the one hundred and thirty-two patients, eighteen, or fourteen per cent., required amputation. I have notes of twenty-one cases (see table) in which carbolic acid as an ointment or in solution of different strengths had been used for trifling injuries, with results varying from a slight dermatitis to complete gangrene, necessitating amputation. In seven of these cases the solution or ointment was used at the direction of a druggist, in eleven it was used by the patient himself on his own responsibility, and in the three remaining cases, I regret to say that the physician either ordered or applied the remedy himself. Surely a lamentable state of affairs, and one entirely unnecessary. Were the existing law

* Paper read before the Harlem Medical Association, New York, May 2, 1906.

so formulated as to forbid the sale of carbolic acid in any strength, except on a physician's prescription, eighteen of the above twenty-one cases would have been spared the pain, the scars, and mutilation of carbolic acid burns or gangrene of varying degree. Nor is such a law the less necessary because the use of weak carbolic solutions is not in every case followed by bad results. No one can predict in which case bad results will follow. Usually very weak solutions (less than one half per cent.) may be used without fear, but where solutions stronger than one-half per cent. are employed, trouble may ensue if idiosyncrasy is present.

Furthermore, while I desire so to emphasize the danger of this almost universally used antiseptic that the necessity of practically prohibiting its sale even in dilute solutions, unless prescribed by a physician, will be evident, I hope also that some of my colleagues who do not seem properly to appreciate this danger may read this and sin no more. Were such a law as I have outlined honestly enforced, the number of avoidable cases of local carbolic acid poisoning would be very few. I do not wish to be understood as denying to phenol its proper place as an antiseptic in surgery. Its field, however, is very limited, and most decidedly is not as a lotion for application where continuous action is required, except in rare cases. It may be used, and is often recommended, as a topical application in carbuncles, erysipelas, etc., but when so used should never be applied to terminal parts, such as fingers and toes. Applied to the trunk or neck, there is little danger, for much of the blood supply of a given portion of these parts comes from a depth to which the acid cannot penetrate, whereas on the tip of the finger the amount of tissue between the skin and bone is so small that penetration is easy.[1]

Any immediate response in this matter is perhaps too much to expect. Until we as a profession become sufficiently awakened to the necessity of such a law, we must as individuals do our utmost to bring home to every physician and druggist the danger of this remedy. In passing, I think it apropos to venture the opinion that where harm results from the use of carbolic acid as a dressing, when suggested by a druggist, a court of law (in the event of a suit for damages) might not wholly absolve the druggist from blame. Self-interest, if nothing more, should make the druggist more careful in dispensing this solution. If he will but bear the danger in mind, he may still sell his lotion without prejudice to himself or his customer, for in most cases the prospective victim simply asks his druggist for some good lotion to apply to a cut finger or a commencing paronychia. Would not a weak bichloride of mercury or boric acid solution, or liquor Burrowi (colored or not by some cochineal) do service just as well and as profitably as phenol, and without the danger? Or if the intending purchaser has asked for carbolic lotion, or insists on something with a smell, would not one-fifth or even one-tenth per cent. solution of carbolic acid serve the purpose?

[1] There are various theories as to the cause of gangrene after the application of carbolic acid; while that suggested seems to me the most reasonable, I am not in a position to discuss the relative merits of the theories that have been advanced from time to time. Some ascribe the gangrene to thrombosis, others to action on trophic and vascular nerves, and still others believe it is due to a direct chemical action on all the parts. Tight bandaging, while it may help in some cases, is distinctly not a very strong factor in the ætiology.

There is nothing new in all this, at any rate to most physicians. Papers on this topic have been published, to some purpose, I hope, but that there is still a portion of the medical fraternity in need of some reminder in the matter, I have long been convinced, and that there is much room for missionary work among druggists is apparent from a glance at the appended table of cases. The merry work of amputating fingers and toes for carbolic acid poisoning due to a patient's careless use of phenol dressing either at his own or some friend's suggestion, or often at the suggestion of his druggist, or physician, goes on apace. It is about time for those who know and realize the dangers of this sovereign remedy to do something toward the enlightenment of those who do not. When physicians and druggists know and do their duty in the matter, the public will soon learn to embrace some other and less dangerous antiseptic for every day use.

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100 West One Hundred and Seventeenth Street.

A CASE OF ANGEIONEUROTIC ŒDEMA.

By H. Morgenbesser, M. D.,
New York.

A. F., five years old, born in the United States. Her father and mother are living and healthy; five sisters and one brother are living and healthy; no similar condition could be traced in the family. She has never been sick in her life up to the present illness; nor has she ever sustained any injury.

Present History.—The patient was perfectly well up to Sunday, July 8, 1906, when she suddenly began to vomit. The vomitus contained a great deal of mucus and was quite stringy, but no blood was present. A physician was called in and prescribed something which caused the vomiting to cease. The child then felt apparently well until Tuesday evening, July 10th, when the mother noticed that the skin over the middle of the forehead became swollen, then the lids of the left eye became œdematous, later the lids of the right eye became similarly affected. The next organ attacked was the right ear, which, due to the œdema, increased to nearly twice its normal size. This condition lasted until Saturday, July 14th, when the swelling in all these parts subsided only to appear again in the submaxillary region, where it also disappeared after three more days.

Physical Examination.—Inspection showed localized œdema over both eyes, over the frontal bone and right ear, and in the sternocleidomastoid region of the neck. There was also some slight œdema of the distal phalanges of both hands. The œdema was waxy gray in color, did not pit on pressure, but was quite painful on deep pressure. The chest showed heart and lungs normal. The abdomen was also normal, nothing could be felt. The temperature ranged from 100.5° F. the first day to 99.8° F., while the pulse

ranged from 150 to 120. The urine showed traces of albumin, but no sugar or any other abnormal constituent. Microscopically, there were no casts present. Uric acid and triple phosphate crystals were abundant. A diagnosis was then made of angeioneurotic œdema.

Treatment.—Patient was put to bed, put on a milk diet, and six doses of calomel, ¼ grain each, were given at intervals of one hour, with hot applications over œdematous areas. Patient was well in nine days.

I wish to thank Dr. H. Schwarz for his kindness in examining the case with me, corroborating my diagnosis.

350 EAST SEVENTY-EIGHTH STREET.

Therapeutical Notes.

For the Relief of Headache.—*La Presse médicale* has the following formulæ:

℞ Mentholis,
Chloroformi,
Methylis salicylatis, } .....āā 5 grammes;
Adipis lanæ, ...30 grammes.

M. S.: Apply this to the forehead, but do not allow any to get into the eyes.

℞ Ext. cannabis indicæ,.....0.015 gramme.
S. In one pill. Take one or two pills each night.

A Decoction of Quillaja Recommended in Emphysema.—Zickgrat recommends (*Medizinische Woche*, 1904, 222) the use of a decoction of quillaja bark as a gargle in the treatment of emphysema. The various saponins excite the mucous membrane of the throat and provoke an abundant secretion, and also exercise a reflex action on the larynx and the bronchial tubes, producing an abundant liquid secretion which may be expectorated without difficulty and without convulsive effort.

Action of Convallamarine on the Circulation of the Blood.—E. Maurel (*La Tribune médicale*, July 28, 1906) concludes that (1) therapeutical doses act first on the bloodvessels and cause them to contract, and it is only secondarily that they act on the heart. (2) These doses increase the energy of the heart before they diminish the number of the contractions. (3) Fatal doses rapidly induce vasodilatation. It requires doses very much larger than the minimum fatal dose to cause cardiac death. The smaller fatal doses permit the heart to continue beating for a considerable time after the death of the rest of the organism. (4) Even double the minimum fatal dose has no action upon the blood cells.

Alcoholic Cirrhosis with Nephritis and Tuberculous Peritonitis Cured by Zomotherapy.—Henri Desplats (*Journal des sciences médicales de Lille*, July 28, 1906) reports the following case: A man, thirty-two years of age, suffered with alcoholic cirrhosis and ascites; the abdomen was greatly distended, so that he had great difficulty in breathing. The liver extended below the ribs. He had hæmaturia and albuminuria. He was treated by a milk diet, and paracentesis was performed several times and rectal injections were given of an extract of pig's liver made by maceration of 300 grammes of the fresh organ finely minced. These nutritive enemata were given every second day, from February 8th to April 24th, when considerable improvement was noted, and they were suspended. On May 4th the general condition was very good, the ascites had finally disappeared (after fourteen tappings) and did not return. Blood appeared only occasionally in the urine and in small amounts. The patient resumed his work as cab driver, and although he did not change his intemperate habits, he appeared six months later to be in perfect health.

Treatment of Gastric Ulcer.—J. Boas (*Deutsche medizinische Wochenschrift*, through *Medizinische Blätter*, May 26, 1906), after calling attention to the importance of occult hæmorrhages as a signal of alarm calling for prophylactic treatment, states that the principal objects to be attained are (1) to make the small blood losses disappear as soon as possible, and (2) to cure the original lesion. The patient should remain in bed. However, where the blood comes from cancer of the stomach or the bowels, this will not be necessary, except after large hæmorrhages. A strict milk diet is advised, both for occult and manifest bleeding. If after three days the blood still is found in the dejections, he recommends repeated enemata of calcium chloride (in ten to twenty per cent. solution). This is the treatment for gastric ulcer, whether the usual clinical symptoms are present or not. He objects to the use of hot applications (poultices) and the hot Carlsbad water of the Leube-Ziemssen method, and in their place recommends cold compresses, or the ice bag, and cold drinks. He refers to a case in which the hot applications apparently caused hæmatemesis and melæna. The hot applications are only suited to those cases of ulcer which no longer bleed.

The Relation of Cancer to Worms.—Borrel, in a communication to the Académie de médecine (*La Tribune médicale*, July 28, 1906), reported a very interesting observation of cancer occurring in mice, stating that he had seen a veritable epidemic of cancer. In a single colony of mice he had been able to recognize thirty cases of spontaneous tumors. His attention had been especially directed to those animals which had presented secondary tumors of the lung. Nearly always it was possible to discover in the lung tissue, in the neighborhood of the tumors, very small nematode worms, encysted in the tissue or the characteristic chitinous débris in the centre of phagocytic reactions, or in the epithelioid cells adjacent to the tumors. Moreover, Borrel had observed in the rat two cases of tumors associated with cysticercus. One of these tumors affecting the liver had the appearance of a sarcoma. By inoculation he had been able to cause tumors to develop in rats, and also he succeeded in developing other growths by reinoculation of the latter. These inoculations seem to prove that the cysticercus has with it some unknown virus, capable of causing proliferation of the elements of a tumor, and this without the new intervention of the helminth. These notes are published by the author in order to direct the attention of in-

vestigators to the possible relation of intestinal worms to cancers.

The Action of Uric Acid in Tuberculosis.—Maximino Maciel (*Journal de médecine*, May 6, 1906), having made a number of observations, both experimental and clinical, asserts that uric acid stimulates the appetite and increases the cellular nutrition. It is superior to urea because this is not changed in the organism, but is eliminated naturally in the urine, while the uric acid, when administered, does not increase the proportion excreted in the urine, and it must therefore be assimilated. It does, however, increase the proportion of urea, which proves that it gives up some of its nitrogen to the economy. On account of its insolubility, it is unsuited to hypodermic or intravenous administration. Maciel prescribes it by the mouth in *cachets de pain*, in the dose of 4 grammes (one gramme) daily. It may be given in conjunction with other remedies required for special conditions in the given case. Thus far, he has seen only good results from its administration. All the patients subjected to its use have shown a marked amelioration in their condition.

A New Method of Treating Hay Fever.—Renault, in a recent Thèse de Bordeaux (*Revue hebdomadaire de laryngologie, d'otologie et de rhinologie*, July 21, 1906), reviews the methods of treating spasmodic coryza, which he considers to have an arthritic basis. In fourteen cases he had adopted the suggestion of Brindel, and had made interstitial injections of paraffin under the nasal mucous membrane. In all the cases it had brought about a complete cessation of the symptoms. In this affection, according to Brindel, there is excessive vasodilatation of the erectile tissue of the pituitary membrane with more or less œdema. The hydrorrhœa then may be regarded not as a glandular hypersecretion, but as really an escape of the serum of the blood through the meshes of the congested mucosa. It is this view of the pathology which first led Brindel to institute his treatment. He sought by the injection of paraffin to interpose a mechanical obstacle to the flow of the blood into the mucosa. The blood being thus retarded, enters the vessels under lower pressure than before, and in smaller quantity. In consequence, the osmosis ceases, and the hydrorrhœa disappears. This ingenious procedure is indicated, according to Renault, only when the nasal mucous membrane is still retractile. It is contraindicated when there is degeneration and hypertrophy of the mucosa and when certain lesions are present in the nasal chambers, such as spurs, polypi, etc., which through reflex action may themselves explain the occurrence of the attacks of spasmodic coryza.

Is There Any Connection Between Constipation and Warts on the Skin?—Arthur Hall (*The British Journal of Dermatology*, March, 1906), in a short communication, refers to several cases of warts on the surface of the body which had been cured simply by the internal administration of a solution of magnesium sulphate (the mistura alba), and mentions Dr. Chalmers Watson's theory that the particular drug was not essential, but that the free purgation that it produced was the real factor of importance in the treatment. In apparent support of this explanation, Dr. Hall reports a case of a girl of fourteen years with warts on the dorsa of wrists, hands, and fingers, which had been present for several years. They were so numerous as to prevent her from working as domestic servant. She was given magnesium sulphate for a month, but the bowels remained costive. Confection of senna and sulphur were then tried, but equally ineffectively. Then she was given pills of aloin (grain one half) and nux vomica (grain one quarter), two of which were to be taken every night. A week later, the bowels were acting well and the warts appeared to be shrinking a little. The treatment was continued, with progressive improvement. At the end of two months the bowels were acting regularly, and all the warts were gone from the dorsa of the hands, but some still remained on the fingers, and these shrunk up and disappeared later. The reporter did not commit himself to any theory, but desired to note the possible association of warts with constipation. [It is impossible to separate the influence of suggestion from the effects of the remedy in this case. Warts frequently disappear spontaneously.]

A Grave Form of Syphilitic Hypertrophic Cirrhosis of the Liver with Paroxysmal Tachycardia.—Cases of syphilitic hepatic cirrhosis are generally benefited by specific treatment. Even a high degree of cirrhosis has been cured by potassium iodide in a number of cases since the successful result reported by Hérard to the Société médicale des hôpitaux in 1864. Recently Jacob Lertal, Lavastine Laignel, and Tharn have placed on record (*Bulletins et mémoires de la Société médicale des hôpitaux de Paris*, July 26, 1906), a case from the service of Landonzy, in which there was grave insufficiency of the hepatic function, which gave all the appearance of *icterus gravis*. Attacks of paroxysmal tachycardia and dyspepsia, also jaundice, epistaxis, with intense headache and adynamia, gave the case a serious look, and everything pointed to a fatal prognosis when an intensive mercurial treatment was instituted. The patient was fifty-seven years of age. Examination showed enormous enlargement and induration of the liver and spleen. He was given subcutaneous injections of calomel. On the fifth day, he commenced to improve, and this continued until the liver resumed its functions, and he considered himself well, although the liver remained hard. The jaundice had disappeared. The spleen had been reduced greatly in its volume. The patient had also been kept upon a milk diet. The mercurial treatment was continued from July, 1905, to March, 1906. In August and September the patient received eleven injections of calomel, each containing 0.05 gramme. After he had a short rest he had another series of eight injections in October and November. In January, on account of an attack of perisplenitis, the liver again enlarged and became tender under the use of potassium iodide, however, all these symptoms soon disappeared. The general condition has correspondingly improved.

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THE DETECTION OF CARBONIC OXIDE IN THE BLOOD.

As the season of the year is approaching when artificial heat in our living apartments is necessary, and as this is usually derived from the combustion of coal, the number of cases of poisoning by carbonic oxide gas will naturally increase, especially in the large cities. The presence of a notable proportion of this highly poisonous constituent in water gas, which is now so largely used for cooking and heating purposes, also gives present interest to the means of recognizing cases of the too frequently fatal coma arising from this source, whether seen before or after death. The medical examiner, at the autopsy, searches for the characteristic rose colored patches of ecchymosis on the surface of the body, for congestion of the viscera, especially of the lungs and brain, and for certain intestinal lesions. He also usually takes a specimen of the blood to be examined for carbonic oxide, both chemically and spectroscopically.

It is to certain deficiencies in the spectroscopic test that attention has recently been called by Dr. Abrest, who is officially connected with the laboratory of toxicology of the Prefecture of Police of Paris (*Journal de médecine*, May 6th). He points out certain difficulties encountered in making the tests for carbonic oxide, and seeks to dissipate some errors which he has observed in daily practice. In the first place, he affirms that the autopsy, in a case of supposed poisoning by this gas, even when made with the greatest care, is in fact incomplete unless a chemical examination of the blood has been made. He insists that a considerable quantity of the blood must be secured to be actually available for the test. In fact, the quantity must be not less than fifty cubic centimetres (more than an ounce and a half), in order that the chemist may put it under the mercurial tube and extract an appreciable quantity of the gas from it for identification.

The ordinary practice of taking a few drops of blood, in a suspected case, and sending them to the municipal laboratory, in order to determine the presence or absence of carbonic oxide gas by the spectroscope, is entirely inadequate and the results are uncertain and misleading. Theoretically, the spectroscopic test for carbonic oxide hæmoglobin is perfectly satisfactory; in practice, however, it often is a failure for this reason: The familiar test is made with ammonium hydrosulphide, the addition of which causes the two bands of oxyhæmoglobin of normal blood to fuse into one, while in the carbonic oxide hæmoglobin this fusion does not occur under the same circumstances, but the two bands remain separate. When it succeeds, it is very striking; but, as a matter of fact, it cannot be depended upon unless the blood contains a proportion of at least two or three per cent. of the carbonic oxide gas. Unfortunately, in the great majority of cases the proportion is in reality much smaller. Sometimes, it is true, it may be much higher and even amount to 17.8 per cent., but there are other fatal cases in which it is not more than 0.25 per cent. There are a number of causes influencing the quantity of this gas to be found in the blood at the time of death. Among the most important are the duration of exposure to the noxious gas and the time elapsing after exposure, during which the patient has been breathing pure air and eliminating the carbonic oxide from his system. There is also a variable degree of susceptibility to the poison on the part of the individual, some persons succumbing more rapidly than others.

To the medical examiner accustomed to work with the spectroscope, this criticism is unnecessary; but to those members of the profession who resort to it only occasionally the caution may be useful. Expert use of the instrument will avoid errors which would attend its employment by those who are not fully acquainted with its limits of sensibility. But in any case it is evident that when the blood contains only a small percentage of carbonic oxide the spectroscopic test should be supplemented and confirmed by the actual extraction of the gas from the blood. This, however, is the task of the chemist rather than the work of the physician in general prac-

tice or even of the average medical examiner. The spectroscopic test, when applied by the physician, is not useless; but even when positive, is to be regarded as suggestive rather than conclusive; and according to Abrest, it is to be valued chiefly as a means of furnishing information which may subsequently prove useful to the chemist.

THE EFFECTS OF LIGHTNING ON THE EYE.

The temporary blinding effect of a vivid stroke of lightning is familiar to us all. Fortunately, any more lasting disturbance of the visual apparatus on account of a thunderbolt is rare, so rare that M. Gonin, writing in 1904, was able to collect only thirty instances, as we learn from an article contributed by Dr. G. Sourdille to the *Gazette médicale de Nantes* for August 25th. The most frequent of the graver effects of lightning on the eye is said by M. Sourdille to be cataract, which may come on at once or after the lapse of some time. Among the other results are burns of the lids, hyperæmia of the conjunctiva, diffuse opacity of the cornea, laceration of the chorioid, retinal hæmorrhage, papillitis, and retrobulbar optic neuritis, the two latter of which may be followed by atrophy of the optic nerve. There are also functional troubles, such as blepharospasm, muscular paralyses, and amaurosis of greater or less duration.

M. Sourdille has had the opportunity of observing an interesting case of amaurosis induced by lightning. A girl, eight years old, was thrown to the floor by a stroke of lightning and remained unconscious for two hours. She was then seized with violent excitement, delirium, and vomiting. On coming to her senses, she asked when the night would be over, though it was then broad daylight. Thus it was evident that she was completely blind. At the end of a few hours, however, her sight had gradually returned. Such functional troubles, says M. Sourdille, are not always recovered from so rapidly, and traumatic lesions follow a graver course. Iridochorioiditis and lesions of the optic nerve are frequently followed by atrophy and progressive blindness. Cataract rarely undergoes retrogression; it may remain stationary, but generally it becomes complete, and the results of extraction are not always favorable.

The pathogeny of the ophthalmic accidents due to lightning is not clear. Many explanations have been propounded, but they do not elucidate all the known cases. Some authors attribute the ocular lesions to the thermal or chemical action of the luminous rays; others regard them as the consequences of the passage of the current through the tissues. The troubles that are not accompanied by discoverable lesions have been held to be due to nervous shock. In general, the prognosis should be guarded.

THE INDUSTRIAL ELECTRIC CURRENT AND THE EYE.

We have all been gallantly interested in "Central's" ears, and we have duly mourned for the victims of the third rail and of the "live wire." But it seems that, so far as troubles with the eyes are concerned, the industrial electric current need not actually pass through the body. But the frequency of the damage inflicted by it has already, in the few years that electricity has been impressed into the service of our mechanical processes, outstripped the instances of bodily injury by lightning. This we learn from M. Sourdille's article, already referred to. So far as the eye is concerned, it is rather the propinquity of a powerful discharge than its passage through the eye that commonly gives rise to serious effects on the organ of vision. Two notable examples are related by M. Sourdille, and they were so much alike that a summary of one of them will be sufficient for our present purpose.

Before summarizing that instance, however, we will cite M. Sourdille's observation of the incandescent light. He finds that incandescent lighting in private apartments, especially for office use, is capable of exciting visual disturbances. He has observed obstinate conjunctivitis and accommodative asthenopia, mostly in young persons, and the phenomena have disappeared on the discontinuance of the electric light. Personally, he says, although he is endowed with excellent eyes, he cannot work under the incandescent lamp without a noticeable amount of fatigue; and he thinks that the result is not accounted for by the intensity of the light, for a coal oil lamp of superior illuminating power does not give rise to it. He suggests that the trouble may be due to chemical rays or to radiations of the nature of which we are thus far ignorant.

The following is a condensed account of one of the cases in which he observed very severe ophthalmic effects from a strong industrial current. A young chemist, present at an attempt to weld a large ship's shaft with the aid of a voltaic arc produced by a current of from 400 to 600 ampères, with a tension of from 80 to 120 volts, took off his protective glasses for a few seconds.

He was about two feet away from the source of illumination. He immediately felt such sensations in the eyes as compelled him to withdraw from the spot. In spite of this precaution, his eyes troubled him so that he was obliged to go to bed. At the end of two hours he awoke with very violent pains which he likened to those produced by firm pressure with the thumb on the eyeball. There was abundant lacrymation, and he felt as if there were coarse gravel stones rolling under his eyelids. He lighted a candle and found that he was totally blind. During the entire night the pain increased, and relief was obtained only by plunging the eyes into cold water. The next morning the face was as red as in cases of sunstroke, the lids were swollen and contracted, there was extreme photophobia, the pupils were no more than points, the conjunctiva was moderately chemotic, there was slight circumcorneal injection, and there was pain, both spontaneous and on pressure, at the points of exit of the supraorbital nerves. The pain and meiosis made an ophthalmoscopic examination impossible. All these symptoms subsided in the course of a few days, but in the mean time the young man's condition was deplorable.

Such cases as this do not by any means exhaust the list of grave ocular troubles occasioned by the industrial electric current, but at least they serve to put us on our guard against ophthalmic disturbances of electric origin.

SUCCESSIVE CHANCRES.

Last week, in an article entitled A Chancre of Doubtful Situation, we commented on a reported case in which the observer was uncertain as to which of two lesions—one on the penis and the other on the chin—marked the site of his patient's infection with syphilis. We gave it as our impression that in that case it was the penile lesion that was entitled to the distinction. The case is interesting from another point of view, that of the possibility that the indurated nodule on the chin was a "successive chancre," that is, an additional chancre developed during a period in which, there is reason to believe, systemic infection is not yet so intense as to produce immunity. In a publication that has since come to our notice the fact that such a possibility is frequently, or at least not very rarely, realized is convincingly set forth by Dr. Robert W. Taylor. The title of his article is The Development of Multiple and Successive Initial Syphilitic Lesions and the Pathology of Syphilis. It was read at the recent annual meeting of the American Dermatological Association, and is published in the September number of the *Journal of Cutaneous Diseases.*

In his usual thorough and painstaking manner, and with his invariable clearness of perception and exposition, Dr. Taylor goes over the ground of the views that have held sway in regard to syphilitic infection, especially the doctrine that the disease is at first and for a considerable time strictly local, the chancre, its initial product, being temporarily "walled off" by cell proliferation and the system therefore saved for a time from contamination. It was this idea that led to the practice of excising chancres in the expectation of preventing constitutional syphilis. This hope has been shown to be futile, and the theory on which it was founded, though still widely entertained, does not in the least commend itself to Dr. Taylor. "My own convictions on this subject," he says, "are diametrically opposite to those just recited, and it is my conviction that from the start the whole organism is infected. It requires several weeks, however, before the intensity of the infection can be said to be complete." This view, consonant with clinical observation, is strikingly supported by Dr. Taylor's own microscopical studies showing the rapidity with which physical signs of progressive invasion by the poison advance along the course of the bloodvessels leading from the site of a chancre.

It appears well established now that the first token of syphilitic infection may take the form of multiple chancres, and it also seems to be demonstrated that "successive chancres" may follow the earlier lesion, as the result either of self infection or of fresh exposure to a source of contamination, which may be the original diseased person or another one. Complete systemic involvement, however, is not slow of establishment, and consequently the time within which successive infection may take place is limited. Usually it does not occur at a period more remote than ten days after the appearance of the first chancre, but its manifestation at a time considerably later is not very rare. The consecutive chancres are apt to be rather abortive in appearance, but in some instances they have all the distinctive features of a primary sore. An instructive form of the successive chancre—instructive in its bearing on some occurrences in general pathology—is the chancre "by coaptation." It is seen in structures that are constantly brought into contact, such as the two labia of the vulva. Dr. Taylor records several striking cases of multiple and consecutive chancres that have come under his own observation, and the whole article is replete with the soundness of reasoning by which he has always been distinguished.

TETANY MISTAKEN FOR TETANUS.

Mistakes in diagnosis are not always avoidable even when all the means of exploration now at our command are brought into play and the facts elicited are viewed in the light of all our present knowledge. Moreover, diagnostic errors are not confined to practitioners of mediocre ability and slight experience. A striking instance of the truth of this latter statement has lately been furnished by Dr. L. Guinon—striking because he confounded tetany with traumatic tetanus in spite of the fact that he has given sufficient attention to tetanus and its counterfeits to enable him in the past to add materially to our knowledge of pseudotetanus. M. Guinon reports his error in the September number of the *Revue mensuelle des maladies de l'enfance.*

The circumstances were such that M. Guinon's mistake is not at all to be wondered at. In about a fortnight after having received an excoriation over the right internal malleolus, while it was still open, a boy, ten years old, complained all at once that he could not open his mouth. At the same time he could walk only with difficulty, and it was noticed that his eyelids drooped. He was taken to the hospital, and at M. Guinon's first visit he was sitting on his bed playing. He spoke intelligently and laughed as freely as if there had been nothing the matter with him. However, his expression was very unnatural; the muscles of the face seemed to be in a state of contracture, the palpebral fissure was narrowed without ptosis, the nose looked pinched, the commissures of the lips were retracted, and the furrow of the chin was exaggerated. There was trismus to such a degree that the teeth could not be separated more than half an inch, and it was a week before the jaws began to be more freely movable. There was some stiffness of the trunk, but none of the neck. The excoriation on the ankle was not painful, and there was no lymphangeitis connected with it, though the inguinal glands on that side were swollen.

Antitetanic serum was injected at the outset, and its use was continued for a week. The temperature, which had been normal at the time of the boy's admission, soon rose, and in a few days its course was such as to lead to the suspicion of typhoid fever; in fact, it was found that that disease was present in a very mild form, and M. Guinon intimates that the tetany was an incident of the typhoid infection. He adds the shrewd remark that such cases as this one may occasionally have been reported as examples of traumatic tetanus "cured." Disturbances more or less closely resembling true tetanus are not very rare, and it would be strange if they were not sometimes mistaken for that formidable disease. However, such an error is not likely to be productive of any more harmful results than the trifling erythema, etc., that may follow the use of antitoxine.

CHEESE IN THERAPEUTICS.

M. Paul Gallois, of Paris, entertains the theory that all forms of gastroenteritis in infants originate in dyspepsia, which, he thinks, paves the way for bacterial infection. The dyspepsia he attributes to overfeeding, and particularly to the ingestion of too much liquid. Hence he prescribes what he calls a dry diet (*régime sec*) for children who have been weaned. He explains, in the *Bulletin médical* for September 1st, that it was in pursuance of this idea of restricting the amount of liquid allowed that he was led to treat nurslings by substituting for a certain number of the daily nursings meals prepared by mixing a coffeespoonful of Swiss cream cheese with a soupspoonful of milk and sweetening the mixture.

He realizes that cheese is of ill repute as an article of diet for children, and adds that on one occasion his proposal to use it drew a smile of astonishment from one of the women who were present. He gives numerous arguments, however, in favor of its employment. He says that, as we all know, it is very nutritious, being "the quintessence of milk," that the bacteria in which it abounds are not all pathogenic, that it contains ferments which promote digestion, and, indeed, that it is to some extent predigested milk. Whatever we may think of these arguments and of the *régime sec* theory, we must admit that M. Gallois has adduced some clinical evidence of good results having followed the use of cheese in the diarrhœal diseases of infants. One might well hesitate to give ordinary solid cheese to babies, but some of the finer cream cheeses may probably be used cautiously with a certain amount of confidence.

Incidentally, M. Gallois tells us that he has employed with satisfaction a mixture of butter and cheese as a substitute for meat in the diet of persons suffering with Bright's disease. In such cases, we presume, a solid cheese might be quite as acceptable as cream cheese, and its use is no novelty. A mixture of butter and almost any good cheese is palatable and highly nutritious, and we should think it might be preferred by many patients to skimmed milk and some of the other substitutes for meat. Many kinds of cheese are constipating to certain individuals, but

doubtless it is quite practicable to correct this action; indeed, it often abates if the use of cheese is persisted in.

Obituary.

LEROY MILTON YALE, M. D.,

OF NEW YORK.

Dr. Yale's sudden death, at the age of sixty-five, removes one of the most respected members of the New York profession. He was favorably known as an orthopædic surgeon and was earnest in the promotion of the care of children, having at one time been the editor of a magazine called *Babyhood*. He had a decided artistic bent, and produced many meritorious etchings.

PHILIP SKINNER WALES, M. D.,

OF THE NAVY.

At the time of his death, which occurred in Paris, Dr. Wales was a medical director in the navy, on the retired list. For four years, from 1880 to 1884, he was the surgeon general of the navy. His naval service covered a long period, beginning in 1856, though by far the greater part of it was spent in shore duty. Apart from his official work, Dr. Wales achieved distinction in rectal surgery.

News Items.

NEW YORK CITY AND STATE

Changes of Address.—On October 1st, Dr. J. W. Gleitsmann, to the Sydenham, 616 Madison Avenue, New York. Dr. Joseph Ferguson, to 118 Quincy Street, Brooklyn. Dr. B. Friedman, to 321 East Fourth Street, New York.

A New City Hospital for Lockport, N. Y.—On September 10th the Common Council of Lockport directed the city clerk to advertise for bids for a new city hospital, the bids to close on the 24th inst. It is proposed to spend $15,000 on the structure. The city has appropriated $5,000 for a site and $5,000 toward a building. The late Augustus Keep leaves another $5,000 for the purpose.

The Medical Society of the County of Chautauqua will hold its triannual meeting at Fredonia on Tuesday, September 25th. The programme for the meeting, after a short business session, includes a dinner, an automobile ride through the grape country to Van Buren Point, a street car ride to Brocton, and a supper at Brocton or Mayville. Ladies are invited.

The Syracuse Academy of Medicine.—The following programme was arranged for a meeting held on Tuesday, September 18th: Report of a Case of Anasarca in the Newly Born, by Dr. William VanLengen; Treatment of Diabetes, with Report of Cases, by Dr. W. D. Alsever; Duodenal Ulcer Treated by Gastroenterostomy, with Presentation of the Patient, by Dr. M. M. Lucid, Cortland, N. Y.; A Report from the Health Committee on the Inspection of Skaneateles Lake.

The Medical Society of the County of Kings.—On Tuesday evening, September 18th, this society held a symposium on the water supply of the city. The programme included the following papers: The Water Supply of New York, by Charles N. Chadwick, Commissioner of Water Supply of New York; The Underground Water Resources of Long Island, by Prof. Isaiah Bowman, department of geology, Yale University. The meeting was in charge of the committee on public health, Dr. Elias H. Bartley, chairman.

St. Mary's Hospital Medical Staff.—At the annual meeting of the medical staff of St. Mary's Hospital, Jamaica, L. I., held on September 18th, the following officers were elected for the ensuing year: President, Henri M. Auger, of Jamaica; vice-president, Dr. William T. Scovil, of Richmond Hill; secretary, Dr. Austin J. Blanchard, of Jamaica. Dr. Henry MacDonald, of Morris Park, was added to the list of visiting physicians on the regular staff, and Dr. J. C. Tease, of Flushing, was made an associate physician.

The Ilion, N. Y., Emergency Hospital.—At a meeting of representative citizens held in the village hall at Ilion, on September 6th, the matter of accepting an anonymously proffered gift of $25,000 for the erection of a hospital was considered. The matter was freely discussed and a vote was taken. Of the fifty persons present forty-nine were in favor of the project. A board of directors was appointed and articles of incorporation were prepared which provide that the hospital shall be known by the above given title.

Tribute to the Late Dr. E. D. Ferguson, of Troy.—At a special meeting of the board of directors of the Samaritan Hospital, held September 10, 1906, the following minute was unanimously adopted relating to the death of Dr. E. D. Ferguson, chairman of the executive committee, and chief of staff: There is an Eastern adage that when the house is finished the master dies. Nothing is to be so dreaded, said the early Egyptians, as a hope realized. The dreamy but searching fancy of the ancient East finds color of fact in the death of him whose loss we deplore to-day. He was in truth the master builder of this institution. And we recall that only a few short weeks since he told us that his builder's task was practically completed; that the house was finished—the foundations deep and lasting, the superstructure solid and stable, the idea behind the fact lofty and imperishable. The work of course was to go on; there must be further growth, enlargement, branching out. But these were in the nature of additions—the main fact and its assured perpetuation were accomplished. And as it had all been the joy of his strength, the pride of his life, the glory of his advancing years, the "baby of his old age," as he himself whimsically declared—surely in this his hope had been realized; and then, as the adage says, came death. Was it untimely? Who shall dare to aver it? It came to him, as every one who glories in the splendid struggle of life would have it come—in the saddle, with lance at rest, with visor down, with every pulse and sinew and nerve enlisted in the fray,

"Obeying the voice at eve obeyed at prime."

This unflagging zeal, this scorn of rest and of the allurements of pleasure, this passionate energy which pushed him into the fighting line at every point made up the motives of his life. "A few more years—five or six, perhaps," he had said of late, and he would step aside—the calm of retrospect to displace the tireless labor which had spanned his life. We may well believe now that knowingly and purposely he named a period well in advance of the expected hour when

"The God of Bounds
Who sets to seas a shore,
Should come to him in his fatal rounds and say
'No more.'"

Death never becomes a commonplace. The mystery of all time which no genius has ever fathomed, the misty curtain which no human eye has pierced—the righteous man can meet them unmoved for himself—but not for his friends, not for those he loves. The death of those we cherish is one of the few absolutely irreparable losses which humanity is called upon to bear. In the death of this big, brave, strong man, with his instincts for leadership, his splendid intellect, his great professional ability, his rugged character, his undaunted courage, the directors of this institution are conscious of a loss which to many may well appear irreparable. To individuals that will be so indeed. But, as we know, to ideas a broader law applies. As he himself declared, this great work, of which he was the founder, must go on; time and the inevitable law of healing shall work their way; and from the ashes of this man's noble conception there shall develop and become perpetuated a splendid memorial to his life work, dearer we believe to him than any eulogy.

"No further seek his merits to disclose,
Nor draw his frailties from their dread abode.
There they alike in trembling hope repose,
The bosom of his Father and his God."

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and

deaths reported for the two weeks ending September 15, 1906:

	September 15.		September 8.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	134	18	139	13
Smallpox	2	..	2	..
Varicella	6	..	9	..
Measles	53	2	54	3
Scarlet fever	74	4	46	3
Whooping cough	38	7	30	9
Diphtheria	184	19	125	16
Tuberculosis pulmonalis	351	150	329	168
Cerebrospinal meningitis	14	5	10	12
	856	205	744	224

Society Meetings for the Coming Week:

MONDAY, *September 24th.*—Medical Society of the County of New York; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement; Baltimore Medical Association.

TUESDAY, *September 25th.*—New York Dermatological Society (private); Metropolitan Medical Society of New York City (private); Buffalo Academy of Medicine (Section in Obstetrics and Gynæcology); Richmond, Va., Academy of Medicine and Surgery; Rome, N. Y., Medical Society; Boston Society of Medical Sciences (private).

WEDNESDAY, *September 26th.*—New York Pathological Society; American Microscopical Society of the City of New York; Philadelphia County Medical Society; Auburn, N. Y., City Medical Association; Berkshire, Mass., District Medical Society (Pittsfield).

THURSDAY, *September 27th.*—New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Mass., Society for Medical Improvement (private); Pathological Society of Philadelphia (conversational); Church Hill Medical Society of Richmond, Va.; Brooklyn Society for Neurology.

FRIDAY, *September 28th.*—Academy of Pathological Science, New York; New York Society of German Physicians; Yorkville Medical Association, New York (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

PHILADELPHIA AND THE MIDDLE STATES.

Personal.—Dr. Alfred Gordon has removed to 1430 Pine Street, Philadelphia.

Bequests.—By the will of Annie E. Hamilton the Hahnemann Hospital and the Wills Eye Hospital each receive $500.

City Hospital for Pittsburgh.—Apropos of the demand for a municipal hospital in Pittsburgh the Homeopathic Hospital has been offered to the city for $700,000 and the old St. Paul's Orphan Asylum for $150,000. Nothing can be done this year, since there is no money for this purpose.

Health Commissioners Meet.—The Health Commissioners of New York, Pennsylvania, and New Jersey, and the State Sewage Commission of the last named State will meet in Atlantic City shortly to take up the matter of the purification of the streams running through or between these States. New York will be represented by Dr. E. H. Porter, and Pennsylvania by Dr. Samuel G. Dixon. New Jersey's Sewage Commission will be in attendance.

Scientific Society Meetings in Philadelphia for the Week Ending September 29, 1906.—Monday, September 24th, Mineralogical and Geological Section, Academy of Natural Sciences. Tuesday, September 25th, Philadelphia Neurological Society. Wednesday, September 26th, Philadelphia County Medical Society. Thursday, September 27th, Pathological Society; Entomological Section, Academy of Natural Sciences. Friday, September 28th, South Branch, Philadelphia County Medical Society; Northern Medical Association.

The Medical Society of the State of Pennsylvania.—At the annual meeting held at Bedford Springs, on September 11th-13th, Reading was selected for the place of meeting on September 23-26, 1907. The following officers were elected for the coming year: President, Dr. Isaac C. Gable, York; vice-presidents, Dr. Charles H. Emmerling, Pittsburgh; Dr. W. B. Ansley, Saltsburg; Dr. P. R. Koons, Mechanicsburg, and Dr. H. M. Neale, Upper Lehigh; secretary, Dr. Cyrus Lee Stevens, Athens; assistant secretary, Dr. T. B. Appel, Lancaster; treasurer, Dr. G. W. Wagoner, Johnstown. The delegates to the 1907 meeting of the American Medical Association are Dr. Adolph Koenig, Pittsburgh; Dr. Israel Cleaver, Reading; Dr. W. T. Williams, Mt. Carmel, and Dr. Samuel Wolfe, Philadelphia. A lively discussion took place over the proposition to ask the State to care for all chronic inebriates, since these unfortunates were at present condemned to the jail or the poorhouse, where they receive neither proper care nor adequate medical attention. The matter was referred to the House of Delegates and later a committee was appointed to draft a bill.

The Health of Philadelphia.—During the week ending September 8th, the following cases of transmissible disease were reported to the bureau of health:

	Cases.	Deaths.
Malarial fever	2	0
Typhoid fever	105	12
Scarlet fever	12	0
Diphtheria	59	8
Cerebrospinal meningitis	5	1
Measles	8	0
Whooping cough	33	13
Tuberculosis of the lungs	79	57
Pneumonia	20	10
Puerperal fever	1	2
Septicæmia	1	0
Cancer	20	22

The following deaths from transmissible diseases were also reported to the bureau of health: Tuberculosis, other than tuberculosis of the lungs, 6; cholera morbus, 1; diarrhœa and enteritis, under two years of age, 70. The infant mortality was 159: under one year of age 149, and between one and two years of age 29. The whole number of deaths was 489, corresponding to an annual death rate in a thousand of 17.31, in an estimated population of 1,469,126. There were 43 stillbirths, 21 females and 22 males. No unusual meteorological phenomena were observed.

BOSTON AND NEW ENGLAND

The Laconia (N. H.) Hospital.—Mrs. S. W. Rollins, of Meredith, N. H., has given $1,500 to this hospital, to endow a free bed in memory of her late husband.

The Mortality of Connecticut.—According to the State Board of Health's *Monthly Bulletin* for August, 1906, the total number of deaths during the month was 1,639. This was 102 more than in July, and 222 more than in August of last year, and 271 more than the average number of deaths during August for the five years preceding. The death rate was 19.8 for the large towns, for the small towns 18.7, and for the whole State 19.5. The deaths reported from infectious diseases were 231, being 14.1 per cent. of the total mortality.

The Franklin District (Mass.) Medical Society held a meeting at Northfield on Tuesday, September 11th. Members of the *Windham County (Conn.) Medical Society,* of the *Cheshire County Medical Society,* and of the *Connecticut River Valley Medical Association* were present by invitation. The following papers were read: Nontuberculous Joint Diseases, by Dr. R. W. Lovett, of Boston; Specialism in Medicine, by Dr. George H. Gorham, of Brattleboro, Vt.; Blood Pressure as a Factor in Heart Disease, by Dr. Horace D. Arnold, of Boston; The Relief of Insomnia, by Dr. S. E. Lawton, of Brattleboro, Vt.

The Mortality of Boston.—The total number of deaths reported to the board of health for the week ending September 8th, was 228, against 200 the corresponding week last year, showing an increase of 28 deaths, and making the death rate for the week 19.74. Of this number 116 were males and 112 were females; 222 were white and 6 colored; 145 were born in the United States and 76 in foreign countries, and 7 unknown; 39 were of American parentage, 158 of foreign parentage, and 31 unknown. The number of cases and deaths from infectious diseases reported for the week was as follows: Diphtheria, 27 cases and 1 death; scarlatina, 11 cases and no deaths; typhoid fever, 49 cases and 5 deaths; measles, 1 case and no deaths; tuberculosis, 24 cases and 15 deaths. The deaths from pneumonia were 12, whooping cough 2, heart disease 27, bronchitis 3, and marasmus 6. There were 8 deaths from violent causes. The number of children who died under one year of age was 87, the number under 5 years of age 96. The number of persons who died over 60 years of age was 46. The deaths in public institutions numbered 77.

Dedication of the New Buildings of the Harvard Medical School.—The following preliminary announcement has been made of the dedicatory exercises which are to take

place on Tuesday, September 25th, and Wednesday, September 26th: At 2 p.m. on Tuesday, at the new buildings, the completion of the buildings and the progress of the endowment will be reported and the buildings accepted by the corporation. After short addresses by representatives of the medical faculty, the president of the university will formally dedicate the buildings, which will be opened for inspection. On Wednesday, at the university in Cambridge, at 10.30 a.m., members of the governing boards and faculties, delegates and invited guests will assemble at Massachusetts Hall and proceed under escort of the alumni and undergraduates of the medical school to Sanders Theatre, where at 11 a.m. there will be held an academic session, including addresses by the president of the university, and Dr. William H. Welch, of Johns Hopkins University, and conferring of honorary degrees. At 1 p.m. the president and fellows will receive delegates of other institutions at Phillips Brooks House. At 2 p.m. the triennial dinner of the Harvard Medical Alumni Association will be held in Memorial Hall. The dinner will be followed by speaking.

BALTIMORE AND THE SOUTH.

The Kentucky State Medical Association will hold its annual meeting at Owensboro on October 10th, 11th, and 12th, under the presidency of Dr. C. Z. Aud, of Cecilia. Dr. James B. Bullitt, of Louisville, is secretary of the association.

The Nashville (Tenn.) Academy of Medicine.—Application for a charter has been filed in the office of the register of Davidson county by this academy. The incorporators are Dr. M. M. Collins, Dr. G. C. Savage, Dr. L. E. Burch, Dr. A. B. Cooke, Dr. W. R. Sifford, Dr H. M. Tigert, and Dr. C. A. Robertson. The interchange of ideas upon and the general furtherance of the science of medicine are given as the purpose of the organization.

The Medical Association of the Southwest, which was organized in July, 1906, and comprises the States of Missouri, Kansas, Oklahoma, Indian Territory, Arkansas, and Texas, held a meeting at Monte Ne, Ark., on September 12th and 13th, under the presidency of Dr. J. T. Clegg, of Siloam Springs, Ark. The principal paper was by Dr. J. D. Griffith, of Kansas City, Mo., on the subject, Phlegmon. The society was entertained by a banquet and a ball.

The Medical Society of the Missouri Valley.—At the nineteenth annual meeting of this society held at Council Bluffs, Iowa, on September 6th and 7th, the election of officers resulted as follows: President, Dr. O. B. Campbell, St. Joseph, Mo.; first vice-president, Dr. W. F. Milroy, of Omaha; second vice-president, Dr. C. O. Thienhaus, Milwaukee; treasurer, Dr. Donald Macrae, Sr., of Council Bluffs, and secretary, Dr. Charles Wood Fasset, of St. Joseph, Mo., reelected. It was decided to hold the semi-annual meeting on the third Thursday in March, 1907, in Omaha.

The St. Louis Medical Society held dedicatory exercises of the new medical auditorium attached to the society's building, on September 15th. The programme was as follows: Introductory remarks by Dr. George Homan, president; announcements by Dr. J. C. Morfit; Building Committee report by Dr. A. Kieffer; address, Earlier Years, by Dr. LeGrand Atwood; report of Finance Committee, by Dr. R. M. Funkhouser; address, The Medical Profession of St. Louis To-day, by Dr. Warren B. Outten; report of Committee on Business Affairs, by Dr. Pinckney French, and an address by Dr. W. G. Moore, on The Future of the Medical Profession of St. Louis.

The Mortality of Baltimore.—The report of the Health Department for the week ending September 8th showed a total of 183 deaths, as compared with 193 the corresponding week of last year, 220 in 1904, and 175 in 1903. The annual death rate in 1,000 of population was: Whole, 16.31; white, 14.50; colored, 26. The principal causes of death were:

Typhoid fever	8	Diarrhœa (under 2 years of age)	18
Whooping cough	2	Bright's disease	11
Diphtheria	2	Congenital debility	10
Membranous croup	1	Lack of care	2
Consumption	24	Old age	4
Cancer	12	Suicide	1
Apoplexy	5	Homicide	1
Organic heart diseases	11	Accidents	17
Bronchitis	2		
Pneumonia	6		

The following number of cases of infectious diseases were reported, as compared with the corresponding week of last year:

	1905.	1906.		1905.	1906.
Diphtheria	14	25	Measles	4	3
Pseudomembranous croup	1	..	Whooping cough	5	5
Scarlet fever	8	7	Chickenpox	2	..
Typhoid fever	48	43	Consumption	20	15

CHICAGO AND THE WEST.

The Wayne County (Mich.) Medical Society.—The following programme was arranged for a meeting held at Detroit, on Monday evening, September 10th: The Value of the County Society to the Older Practitioner, Dr. Leartus Connor; The Value of the County Society to the Younger Practitioner, Dr. James E. Davis; The Value of the County Society to the Community, Dr. Guy L. Kiefer; The Value of the County Society to the Medical Profession, Dr. F. B. Tibbals. Dr. T. A. McGraw, Dr. H. D. Jenks, Dr. E. H. Hayward, and Dr. S. G. Miner were to take part in the discussion that followed.

The Chicago Lying-In Hospital and Dispensary has in prospect a new hospital building, to cost $150,000 to $200,000. It has purchased from the Old Peoples' Home the vacant land at the northwest corner of Vincennes Avenue and Fifty-first Street, for $52,000, to be used as a site. The land comprises a tract 274 x 163 feet bounded by Vincennes Avenue and Washington Park Court, Fifty-first Street and North Fiftieth Place. This land was recently purchased by the Old People's Home, to be used for a site for a new building for that institution, but that has been given up. The Lying-In Hospital is about twelve years old, and is now located at 294 South Ashland Avenue. It is the intention to construct a building just as soon as the funds can be raised. It will be of brick and stone, and will have a capacity of about sixty beds. Frederic A. Delano, president of the Wabash Railroad, is president of the association, and Dr. Joseph B. De Lee is medical director. This property is immediately across the street from the Home of the Friendless.

Statement of Mortality in Chicago for the Week Ending September 15, 1906, compared with the preceding week and with the corresponding week of 1905. Death rates computed on United States Census Bureau's figures of midyear population—2,049,185 for 1906, 1,990,750 for 1905:

	Sept. 15, 1906.	Sept. 8, 1906.	Sept. 16. 1905.
Total deaths, all causes	548	515	514
Annual death rate in 1,000	13.94	13.10	13.46
Sexes—			
Males	308	295	282
Females	240	220	232
Ages—			
Under 1 year of age	128	127	118
Between 1 and 5 years	50	61	69
Between 5 and 20 years of age	39	41	34
Between 20 and 60 years of age	232	203	195
Over 60 years of age	99	83	98
Important causes of death—			
Apoplexy	11	9	10
Bright's disease	43	37	34
Bronchitis	3	6	6
Consumption	55	49	55
Cancer	34	19	26
Convulsions	7	8	8
Diphtheria	6	10	9
Heart diseases	41	39	48
Intestinal diseases, acute	110	113	113
Measles	2	1	0
Nervous diseases	20	15	17
Pneumonia	30	29	34
Scarlet fever	6	7	0
Smallpox	0	0	1
Suicide	8	6	7
Sunstroke	4	1	0
Typhoid fever	13	10	4
Violence (other than suicide)	31	46	32
Whooping cough	6	7	5
All other causes	118	103	105

GENERAL.

A Loving Cup Presented to Dr. Geikie, of Toronto.—Dr. W. B. Geikie, formerly dean of Trinity Medical College, was recently made the recipient of a loving cup by a number of old graduates of Trinity. The graduates held a pleasant supper at the St. Charles café, at which Dr. Geikie was an honored guest, the presentation being made by Dr. Teskey, who spoke of the love and respect in which their former dean was held. The loving cup bore the inscription "To our venerable dean, by Trinity medical delegates attending the British Medical Association, 1906."

Pith of Current Literature.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

September 13, 1906.

1. A Contribution to the Chemisty of the Bacterial Cell and a Study of the Effects of Some of the Split Products on Animals, By VICTOR C. VAUGHAN.
2. Artificial Nauheim Baths in Chronic Heart Cases, By PHILIP KING BROWN.
3. Systemic Infection Through the Tonsils, By J. L. GOODALE.
4. The Problem of Venereal Prophylaxis; Some Remedial Suggestions Relating to It, By A. L. WOLBARST.

2. Artificial Nauheim Baths in Chronic Heart Cases.—Brown gives the history of twelve patients treated for functional and organic heart cases with artificial Nauheim baths. With the help of Professor Rogers he had reproduced as nearly as possible the components of springs No. 7 and 12 at Nauheim, and treated with his baths patients in whom the heart muscle acts insufficiently, either from dilatation, poor blood supply, anæmias, or arteriosclerosis with changes in the muscle, poisoning, acute or chronic, and notably tobacco poisoning, and fatty changes of moderate degree. The author lays special stress upon the fact that judiciously given resisted movements lessen the pulse rate in patients without elevation of temperature, but with rapid heart action, except possibly in extremely advanced cases of interstitial myocarditis. He does not think that the resisted movements are essential, and they are certainly not as lasting in their effects as is the bath. They are often very tiresome to the patient, and are dangerous in bad cases unless given by a person who understands fully the purposes of them and who realizes that every case is a law unto itself. As a rule, in his experience it has been best to give them an hour or two before the bath. When this is not possible, he has found it wisest to wait a number of hours after the bath. On the subject of massage in connection with the treatments, he states that he has found it of advantage, particularly when the temperature of the bath was below 90°, in securing a prompt reaction from the sensation of cold, which patients with sensitive skins frequently have, as a result of the stimulation of the skin. It is necessary that patient be put back into a warm bed and that the attendant should take pains to rub the extremities vigorously and even the body, if there be sensation of cold.

3. Systemic Infection Through the Tonsils.—Goodale enumerates the following phenomena of infection through the tonsils: 1. Three established observations, namely, emigration of phagocytic leucocytes, the penetration of inorganic or, at least, nonliving matter, and the arrest of the lacunar bacteria at the lining mucous membrane. In economic terms we might say that there is an outward passage of emigrants, an admission of merchandise, and a turning back of undesirable foreigners at the port of entry. Next comes what we assume: It seems probable that the secretions of the mouth compose largely the fluid borne away from the tonsil to the adjacent lymph glands. It is further probable that the fluid borne away from the tonsils in the efferent lymph channels has entered the organ through the epithelium of the crypts as truly as fluid leaving a lymph gland has come to it through the afferent channels. The emigration of leucocytes from the tonsil into the crypts against this inflowing stream of buccal fluid seems most reasonably explained by a positive chemotaxis. In this condition, the pathogenic microorganism may be found in great numbers in the crypts, which are distended with polynuclear leucocytes, actively engaged in phagocytosis. Bacteria probably enter the system only rarely through the tonsil. Nevertheless, they are known to do so in certain instances, and such a penetration is probably more frequent than has hitherto been suspected. It would seem probable that a condition of faulty drainage from the crypts would afford a given infectious organism better opportunity to remain in contact with the lacunar epithelium, possibly multiplying upon the detritus there found, and upon a favorable opportunity of becoming drawn into the tonsillar tissue with the current of buccal fluid.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

September 15, 1906.

1. The Art of Medicine, By EDWARD HORNIBROOK.
2. The Dietetics of Obesity, By ALFRED C. CROFTAN.
3. The Treatment of Progressive Atrophy of the Optic Nerve Due to Acquired Syphilis by Subconjunctival and Intravaginal Injections of Sublimate of Mercury, By CHARLES STEDMAN BULL.
4. Neoplasms of the Colon. Report of Sixteen Cases, By A. F. JONAS.
5. The Surgical Conception of Sigmoid Pathology, By H. D. NILES.
6. Treatment of Ulcer of the Stomach, with a Record of Cases, By HENRY F. HEWES.
7. Ætiology and Diagnosis of Gastric and Duodenal Ulcer, By FRANK BILLINGS.
8. Gastric and Duodenal Ulcers. When do they Require Surgical Treatment and what Procedures are Necessary, By W. L. RODMAN.
9. The Medical Treatment of Duodenal and Gastric Ulcer, By ALEXANDER LAMBERT.
10. Cerebral Decompression (*To be concluded*), By WILLIAM G. SPILLER and CHARLES H. FRAZIER.

2. The Dietetics of Obesity.—Croftan reminds us that the methods at our disposal for reducing obesity are chiefly dietetic. Second in importance is the regulation of the muscular exercise. These two means, singly or combined, usually suffice to accomplish the desired purpose, for which a decrease of the intake of fat forming pabulum and an increase of its destruction by exercise the fat contact of the body must need dwindle. These measures may to advantage be enforced by certain hydrotherapeutical and medicinal means, the latter finding their chief sphere of application, however, in the symptomatic treatment of the complications of obesity. The first step in instituting a reduction cure should be taken to determine the normal caloric requirement of the individual, if he is not obese. A table is given from which the approximate caloric requirement can be obtained. The diet should then be arranged in such a way that the proper amount of calories is furnished, but if the patient does not lose weight on such a diet, then it is necessary to reduce the caloric intake. The diet in reduction cures should be arranged in such a way that the individual receives an amount of albuminous food, incorporating at least sixty to eighty grammes of albumin, necessary in order to maintain nitrogen equilibrium and to protect the tissue albumins. The remaining number of calories may be furnished either in the form of fats or carbohydrates. The distribution of meals is often of importance, the best plan being to give three meals during the day, with two or three small meals between. Of import is also the restriction of the intake of liquids. The author adds a list of special articles of food, when they should be allowed, and when prohibited, such as alcohol, meats, milk, soups and bouillon, or beef teas, vegetables, fruits, flower, bread, mineral waters, etc.

3. Treatment of Progressive Atrophy of the Optic Nerve Due to Acquired Syphilis.—Bull concludes that posterior subconjunctival injections of sublimate may be given with but little pain if the sublimate injection is preceded by the injection of cocaine. The conjunctiva should be incised and carefully separated from the episcleral tissue, and the injection made far back toward the apex of the orbit. The eye need not be bandaged after the injection, but cold applications should be made for half an hour. This method of treatment of cases of atrophy of the optic nerve has, in the author's hands, proved of no more value than the usual

routine treatment of mercury, potassium iodide, and strychnine, and offers no encouragement for its continued use.

4. **Neoplasms of the Colon.**—Jonas reviews sixteen cases of neoplasms of the colon, all but one to be classified as malignant, eleven were adenocarcinoma, one papilloma, and one myofibroma. Such neoplasms of the colon when compared with abdominal growths in general are not common. While they usually begin as primary growth of the colon, they are not infrequently secondary, and may have originated in the mesenterium or the appendix vermiformis, in the uterus or its annexa. In diagnosticating such a case rectal and vaginal exploration are necessary, but an important sign is the peristaltic wave. If operative interference is deferred until the clinical signs are positive, there is scarcely hope to eradicate all the pathological structures.

5. **The Surgical Conception of Sigmoid Pathology.**—Niles states that in his opinion there is one method of examining the sigmoid which deserves special mention. Inspection, palpation, and percussion, before, during, and after inflation of the bowel with air or distention with water may be of the greatest value in determining whether or not the lumen is narrowed by stricture, angulation, or distortion, and in this way we may even determine the degree and location of any stenosis. Pressure on the distended bowel will often enable us to locate the point of tenderness which otherwise might not be discovered. A tired point of tenderness without stenosis would point to the probability of an ulcer which might cicatrize spontaneously. Narrowing of the lumen of the bowel with or without tenderness would indicate a permanent lesion or a progressive pathological process that might in time become a menace to life or health. The essential principle of treatment of sigmoid ulcer, like that of a gastric ulcer, is rest. How best to secure that rest with the least distress and the greatest assurance of safety to the patient no one may as yet presume to state dogmatically. The starvation plan, irrigations from below, or continuous currents of aqueous solutions from above, through an opening in the colon; or in the presence of chronic stenosis or threatened occlusion, iliosigmoidostomy, excision of the ulcer, or exsection of the diseased portion of the gut, are all procedures that may be considered.

6. **Treatment of Ulcer of the Stomach, with a Record of Cases.**—Hewes says that in cases of simple, uncomplicated ulcer medical treatment offers an efficient, though not an absolutely certain, means of cure. The efficiency of the treatment as regards the after results or permanent cure is dependent to a large extent on its thoroughness. Surgical treatment of simple ulcer is capable of providing an efficient means of cure for the disease, while the after results or permanent cures is quite as good. The argument for surgical treatment in simple ulcer lies in the fact of the considerable number of recurrences which occur in medical cases, and in the deaths which result from such recurrence. In cases of chronic ulcer complicated with disturbance of the ability of the stomach to empty its contents into the duodenum, causing permanent gastrectasis, medical treatment gives very unsatisfactory results as regards the cure of the combined condition. Patients may, in many instances, regain comfort as regard symptoms, health, strength, weight, and ability to work, and may keep this gain as long as treatment is continued, but permanent cure, that is absence of stasis and symptoms of discomfort for an indefinite period after cessation of treatment is, however, rarely accomplished. Surgical treatment, on the other hand, gives excellent results as regards permanent cure. The only argument against this procedure lies in the fact that the chances of an establishment of a fair condition of health and comfort under a continued medical treatment are fairly good, and that death under such conditions is a very rare occurrence, while under surgical treatment, though the chances of cure are excellent, there is always the risk of death as the result of operation.

7, 8, 9. **Gastric and Duodenal Ulcers.**—Billings speaks of the ætiology of chronic ulcers of the stomach and duodenum, and says that they follow nutritional disturbance of a limited area of the mucosa, resulting in the destruction of this circumscribed region by the gastric juice. The gastric juice is the destructive agent and, therefore, plays the most important rôle in the causation of ulcer of the stomach and duodenum. The cause of the condition which permits the gastric juice to attack a part of the mucous surface of the stomach or duodenum is not altogether clear. Probably several conditions may be important factors, vascular disease with thrombus or embolism, hyperacidity of the gastric contents, chlorosis, traumatism, stasis of the stomach contents with decomposition, bacterial infection, etc. In speaking of diagnosis, the author says that in a classic case of ulcer there are three chief diagnostic signs. These are, in their order: Pain, which is usually felt in localized area and is aggravated by a palpation and by food; hæmatemesis or melena; hyperchlorhydria and the some time evidence of gastric stagnation. But chronic ulcer is often latent, and if so, one or all of the signs enumerated may be absent. Duodenal ulcer is not unfrequently associated with gastric ulcer, and its ætiology is probably the same.—Rodman remarks that the surgical opinion has crystallized on some phases of ulcer, is crystallizing upon others, and in some phases is still chaotic. The treatment of such complications as perforation and subphrenic abscess admits of no discussion whatsoever, and may definitely be put to one side. Both must be met by prompt operative procedure, and it is not a question of whether to operate, but how. So far as hæmorrhage is concerned, there is room for doubt, and the variety of ulcer, its acuteness of chronicity, the amount of the hæmorrhage, its recurring nature, and the size of the vessel involved must be considered before a conclusion can finally and rightly be made. There is a greater difference of opinion between internists and surgeons as to the treatment of nonperforating, nonhæmorrhagic ulcers with disabling adhesions and other gastric disturbances, purely mechanical in nature, following in their wake. But operation to avail ought to be done early, and the earlier the better.—Lambert takes up the medical treatment of duodenal and gastric ulcers, both having the same medical treatment. It consists of physical rest; rectal feeding; gastric feeding which should be begun before the rectum grows intolerant; and Lenhartz protein diet. But we should always remember the danger of relapse or a recurrence of the ulcer, the after treatment should be therefore prophylactic, in diet and the mode of life. Of the drug measures Lambert mentions the bismuth cure, as described by Fleiner, and the olive oil cure of Cohnheim. Besides these two there is used silver nitrate, iron perchlorid, and alkalies. The serious complications are perforation and hæmorrhage. Perforation is always a surgical condition, and hæmorrhages only when they are repeated, little, unceasing hæmorrhages, while a simple profuse hæmorrhage is not a surgical indication.

MEDICAL RECORD.

September 15, 1906.

1. How May the Medical and Teaching Professions Cooperate to Improve the Moral, Mental, and Physical Condition of the Young? By S. A. KNOPF.
2. Clinical Observations Concerning the Nasal Passages and the Relation they Bear to the Organs of Sight and Hearing. By ALICE G. BRYANT.
3. A New Axis Traction Apparatus. By ARTHUR C. JACOBSON.

4. The Results from the Bloodless Reduction of Congenital Hip Dislocation, By WALTER G. STERN.
5. An Unrecognized Ætiological Factor in the Summer Diarrhœas of Infants, By JAMES LAWSON WALSH.

2. Clinical Observations Concerning the Nasal Passages and the Relation They Bear to the Organs of Sight and Hearing.—Bryant states that among the ocular disturbances arising from nasal affections may be enumerated the following: Ephiphora; œdema of the lids; dacryocystitis; blepharospasm; strabismus; myopia; asthenopia; lacrymation; photophobia; scintillating scotoma; narrowing of visual fields; exophthalmos; diplopia, lacrymal abscess; persistent pain in eyeball; ophthalmia; corneal ulcer; catarrhal conjunctivitis; phlyctenular conjunctivitis; eczematous keratitis; diseases of the optic nerve (neuritis or atrophy); retrobulbar neuritis. What relation do the eye and lacrymal duct bear to the nasal passages and their accessory cavities and cells? The author answers this question by saying that anatomically the maxillary antrum forms the floor of the orbit, the frontal sinus partly aids in forming the roof, and the ethmoidal cells are closely associated with the lacrymal duct, and have been known to surround the duct. The sphenoidal cavity—or the sphenoidal cavity plus the posterior ethmoidal cells—is in relation with the optic nerve and the ophthalmic artery. We are entering here upon one of the most interesting and attractive of subjects connected with the eye and nose. The field of research along these lines will develop new problems and new conditions laden with great possibilities and promising rich findings, and there is probably no field wherein the reward will be greater. The disturbances of vision and development of blindness produced by diseases of the accessory nasal cavities and cells are of grave import. The ophthalmologist and the rhinologist will be more closely associated in the future in their united endeavors to solve these weighty problems. Ear statistics tell us that sixty per cent. of all ear diseases are due to a faulty condition in the nose or throat. Again, the importance of caring for the nasal and nasopharyngeal tract, having catarrhal troubles attended to, enlarged tonsils, and adenoids removed. It is of great import that no examination of a child should be considered complete until the eye, ear, nose, and throat have been thoroughly examined.

3. A New Axis Traction Apparatus.—Jacobson presents a device which is to place the forcep's operation on a more scientific plane in that it enables us to employ measured, steady, and precise axis traction, accomplishing delivery in appropriate cases with a minimum of force and with no expenditure of physical energy on the part of the accoucheur. The mechanism is described by the author as follows: The apparatus is composed of a clamp, which attaches to the edge of a table; an outer case, enclosing a worm and gear (which multiply the power); two rods, the lower one telescoping, joined to the clamp by universal joints; a crank handle for operating the power producing mechanism; a hand wheel at the outer end of the telescoping rod for controlling the transit of the outer end of the apparatus through the orbit which it must describe, when in operation, around the universal joints as pivotal points; a steel tape, which may be replaced by another if kinked without taking things apart, and which winds up on a drum upon which it is held and around which it is guided by a metal case contaning an aperture into which the tape passes and which does not itself revolve; a small axle upon which the gear revolves, and a dynamometer, one of the needles of which is pushed along as an index by the needle proper, remaining at the maximum point reached during the operation for later reference. This dynamometer can be read down to one pound. The apparatus is constructed chiefly of an aluminum composition, weighs about five pounds, and may be taken apart for carrying about. The Tarnier instrument being applied in a high or median case in which some difficulty in delivery is anticipated, attach the dynamometer to the traction rods of the forceps, connect the tape with the dynamometer, lower or raise the apparatus to the proper point by means of the hand wheel, align the tractor in its longitudinal axis with the forceps handles; have the patient held in the usual position by two assistants, the buttocks projecting somewhat over the edge of the table with the median line of the body, the vulva and the clamp kept in the same plane, and then begin to apply the traction by means of the crank handle, the long axis of the instrument being kept always in the same plane as the forceps handles, according as the latter deviate from the median line. Run up a moderate amount of traction slowly for a number of times. Tractions should last about one minute only when at their optimum, and one should take at least twenty minutes to bring the head down to the pelvic floor. The occiput must be anterior, the head well flexed, the bladder and rectum empty, the cervix fully dilated, the membranes ruptured, the forceps operations clearly indicated, the diagnosis of position and posture positive, and the diameters such as are considered not prohibitive of axis traction. Among the advantages which the author enumerates in thirteen points may be mentioned: Accurate measurement of traction. Perfectly steady pull. Traction being steady and precise. Physical exertion on the part of the obstetrician practically obviated; all forceps deliveries rendered easy, and the terrors of the high forceps operation greatly mitigated. Manipulation of instrument easy; mechanism simple. Slipping of forceps fraught with no danger, as in the case of manual traction, since the power producing mechanism is at once automatically compromised, so to speak, and traction ceases. The author states that the whole matter is in an experimental stage.

4. The Results from the Bloodless Reduction of Congenital Hip Dislocation.—Stern reports fifteen cases in which he was successful with Lorenz's method of reducing congenital hip dislocation. He gives the following statistics which he collected from the literature: The number of hips reported as successfully operated upon since 1900, 2,593. Ideal results, restitutiones completæ, 48.98 per cent.; anatomical restitutions, 41.76 per cent., 1,084; excellent functional results, 7.22 per cent., 187. Good function from transpositions, 39.98 per cent., 1,036. Failure, redislocation, bad function, 12.10 per cent., 314. Discrepancy between failures and good results (about 1 per cent.) is due to inaccuracy of many of the reports. These figures, gathered from operators scattered all over the world, from Athens to San Francisco, are about the same as first given out by Lorenz as his own experience. They come from opponents as well as from adherents to the bloodless method, and consequently fall far below the actual experience of individual operators. Looking at the results from a "functional" standpoint alone and letting them speak either for good or bad results, we have 2,593 cases, with 2,307, or 88.96 per cent., of good resulting function.

5. An Unrecognized Ætiological Factor in the Summer Diarrhœas of Infants.—Walsh calls our attention to one point which he thinks has so far been overlooked, and that is the fact that nine tenths of the diarrhœas of the cow's milk fed babies are due to a laxative property, contained in the grasses, grains, and weeds on which the cows feed in the pasture during the summer season, and which is secreted in their milk. The mortality curve keeps pace with the growing grasses, beginning in May and gradually increasing until it reaches its maximum when these grasses are matured in July; then the mortality curve gradually declines with drying and dying of the grasses during August, September, and October. During these later

months the pasture is not so plentiful as in the two months previous. The stock are turned in on the stubble of the wheat, oats, barley, cornstalks, etc., also the recently threshed straw stacks, which contain an abundance of new grain which is likewise, in the new state, very cathartic. The babies most affected with the summer complaint are in the first two years of life and their main food supply is cow's milk. They get the full physiological and often the toxic effect of the aperient properties in the milk from these grass fed cows.

LYON MEDICAL.

September 2, 1906.

Parenchymatous Goître Threatening Suffocation, By GENTIL.

Parenchymatous Goitre Threatening Suffocation.—Gentil reports the case of a woman, fifty years old, who had had a goître since the age of fifteen. At the age of forty the goître began to increase in size, and when she came under observation it was very large, had pressed the trachea over to one side, and had compressed not only the trachea, but also the right recurrent laryngeal nerve and the vessels of the neck. The right lobe, which weighed 450 grammes, was removed. The result of the operation was very good.

LA PRESSE MEDICALE.

August 29, 1906.

1. Le Coup de Pression (Caisson Disease), By PAUL CARNOT.
2. Action of the X Rays on the Blood, By R. ROMME.

1. Caisson Disease.—Carnot gives an excellent account of the troubles which assail workmen who labor under the pressure of several atmospheres. Preventive treatment consists, as he thinks, in a rigorous selection of the workmen, a slow and gradual increase of the pressure, and an abridgement of the hours of labor, directly proportioned to the amount of pressure.

MUENCHENER MEDICINISCHE WOCHENSCHRIFT.

August 21, 1906.

1. The Use of Pessaries, By M. HOFMEIER.
2. The Neutrophile Blood Pictures in Naturally and Artificially Nourished Infants, By ESSER.
3. Cultivation of the Typhus Bacilli from the Blood by Means of the Gall Culture, By H. CONRADI.
4. Stasis Hyperæmia in the Treatment of Purulent Otitis, By HASSLAUER.
5. A Case of Abortion Per Rectum with Good Result, By K. MARTIN.
6. A Procedure to Obtain Sediment from Sputum with Hydrogen Peroxide, By SACHS-MÜKE.
7. A New Instrument for Lumbar Anæsthesia, By BENNO R. V. ARLT.
8. An Apparatus for the Rapid and Very Cheap Preparation of Sterile Bandage and Tampon Material, By ALEXANDER SCHMIDT.
9. The Prognosis and Treatment of Cholelithiasis in the Light of Statistics and Experience (*Concluded*), By ADOLF RITTER.
10. A Contribution to the Physiology and Pathology of Vertical Visual Movements (*Concluded*), By H. STEINERT and A. BIELSCHOWSKY.
11. The History of Lumbar Anæsthesia, By BOCKENHEIMER.
12. Reply to Bockenheimer's Article, By AUGUST BIER.
13. Theodor Puschmann and the Problems of the History of Medicine, By KARL SUDHOFF.

1. Use of Pessaries.—Hofmeier considers that in many gynæcological cases there is no other method of treatment equal to the use of pessaries. But it must be strongly impressed upon the woman who wears a pessary that it must be looked after from time to time if she would avoid very bad results.

4. Hyperæmia Treatment of Otitis.—Hasslauer reports thirty-six cases of acute inflammation of the middle ear treated by means of Bier's hyperæmia stasis. In three cases Stenger's lymphatic stasis was simultaneously employed. Nearly one half were cases of chronic purulent otitis media with acute exacerbation, the rest were acute, and sixteen of these were met with before the tympanic membrane had been perforated. The results obtained were excellent.

5. Abortion Per Rectum.—Martin reports a case of extrauterine gestation sac which ruptured into the large intestine. A five months' fœtus with cord and placenta was passed from the rectum, and the patient recovered.

10. Physiology and Pathology of Vertical Visual Movements.—Steinert and Bielschowsky, after a very thorough analysis of the case narrated in the last number, report another case, that of a man, forty-two years of age, who had a sudden attack of diplopia followed six weeks later by a left sided hemiplegia. The next day he came under observation. At first it was difficult to test the eyes because of the patient's general condition. He said that there was diplopia in all directions. The movements of the eyes seemed to be limited, yet only when he looked to the right and upward could a lagging behind of the right eye be detected. The image seen by the right eye was higher than that seen by the left, and its upper end inclined toward the left. After about a month the diplopia improved and a paresis of the right superior rectus alone could be made out as constant and certain. An attempt on the part of the patient to look upward caused only a slight upward movement of the eye, but a little motion of convergence, but when the eyes were fixed upon and following a moving object they made an extensive excursion upward, as they did also when the eyes were fixed on a near object, and the head was bent forward while fixation was maintained. Later a slight paresis of the left superior rectus also appeared. There was a slight anisocoria. When the light was focussed directly upon it the right pupil reacted slowly, but the consensual pupillary reaction was prompt, as was also that to convergence. There was a temporal hemiachromatopsia of the right eye. The fundus of the left eye was normal. In that of the right the papilla was somewhat blurred, while above it were some little hæmorrhages and yellowish foci in the retina. The patient died from cardiac weakness. On autopsy an old focus of softening was found in the region of the internal capsule.

August 28, 1906.

1. Alcohol and Neuroses, By L. LÖWENFELD.
2. Studies with a New Inhibition Body, By WOLFGANG WEICHARDT.
3. Is There an Intestinal Origin of Anthracosis of the Lungs? By WALTER H. SCHULTZE.
4. The Course of the Intramuscular Nerve Tracts and their Importance in Tendon Plastic Work, By GUSTAV ALBERT WOLLENBERG.
5. Seven Operative Cases of Hyperplastic Stenosing Ileocæcal Tuberculosis, By H. BAUM.
6. The Curability and Treatment of Tuberculous Meningitis, By C. RIEBOLD.
7. The Occurrence of Retinal Hæmorrhages in Miliary Tuberculosis, By HERMANN MARX.
8. Seven Cases of Epidemic Cerebrospinal Meningitis, By E. KRÖBER.
9. Cerebrospinal Meningitis in One Batallion at Munich During January and February, 1906, By DIEUDONNÉ, WÖSCHER, *and* WÜRDINGER.
10. Epileptiform Spasms in Diabetes Mellitus, By ALFONS STAUDER.
11. Sajodin, a Preparation of Iodine, By FRITZ JUNKER.
12. Alcoholism in Munich, By BOCKE.
13. African Physicians, By BERNHARD STRUCK.

3. Intestinal Origin of Anthracosis.—Schultze ascertained by experiment that after intraperitoneal injections of fluid containing particles of coal, and also after admixture of coal dust in the food, particles of coal could be found in the lungs. But a true anthracosis of the lungs was not produced by the former, nor by the latter when the food was introduced into the stomach through an artificial opening, while it was pro-

duced when the food was taken in the usual way through the mouth. He believes that anthracosis is due to the inhalation of the particles of coal dust.

4. **Plastic Repair of Tendons.**—Wollenberg gives these practical points in regard to the plastic repair of tendons. The split portion must not be too small. The split must not go higher than perhaps the middle of the belly of the muscle. Shortened ends should be used only in muscles in which the principal nerve tracts run longitudinally.

6. **Curability and Treatment of Tuberculous Meningitis.**—Riebold reports two cases of tuberculous meningitis, one of which recovered under treatment by daily lumbar puncture which evidently exercised a favorable influence over the course of the disease.

10. **Epileptiform Spasms in Diabetes Mellitus.**—Stauder reports the case of a man, fifty-three years of age, who died of diabetes mellitus. Toward the end of his life he had suffered from frequent epileptiform convulsions, which could not be explained by any pathological condition found at the autopsy.

GAZZETTA DEGLI OSPEDALI E DELLE CLINICHE.

August 19, 1906.

1. A Case of Comminuted Fracture of the Cranial Vault, By Ugo Basso.
2. The Solanaceæ and Glucose in the Treatment of Hyperacidity, By Roberto Rebizzi.
3. The Hæmatogenous Power of Manganese, By Guido Piccinini.

1. **Comminuted Fracture of the Cranium.**—Basso's case occurred in a man, aged twenty-eight, who sustained a comminuted fracture in the left parietal region a rectangular piece of bone having been pushed in so that its outer surface corresponded to the level of the inner plate of the skull. The fragments of bone, including the depressed piece, were removed and an opening in the dura through which the brain protruded was closed by a network of catgut strands, meant to take the place of the missing dura. Although the brain in this case had been contused, compressed, and had protruded from the wound, the patient made a good recovery.

2. **Glucose and Atropine in Hyperchlorhydria.**—Rebizzi treated patients with hyperchlorhydria with glucose and with atropine. The latter is sure, because it inhibits the secretion of the stomach, the former has been found by Clemm to diminish the gastric secretion, especially the flow of hydrochloric acid. The glucose was given in the form of a syrup containing two parts of sugar to one part of water, of which from 200 to 250 grammes were taken during the day. Atropine was given in the form of the sulphate or else in a mixture composed of equal parts of the tinctures of belladonna, of strammonium, and of giusquiama (gelsemium?), twenty drops of the mixture ($6^2/_3$ drops of gelsemium?) being given twice daily. The diet was chiefly of meat, with a little milk and bread. In two cases of gastric ulcer the diet was exclusively of milk.

August 26, 1906.

1. The Syndrome of the Cauda Equina, By Ettore Tedeschi.
2. Infectious Aneurysms of the Hepatic Artery, By Ferruccio Schupfer.
3. Contribution to the Histology of the Testicle in Cases of Incomplete Descent of the Same, By Ugo Basso.
4. Venereal Buboes in the Royal Army, By Pugliesi.

3. **Atrophy of Undescended Testes.**—Basso finds that the incompletely descended testis presents varying degrees of atrophy which may involve the entire organ or may be limited to isolated areas of the same. Spermatogenesis can go on in these organs, but it appears that spermatogenesis occurs only in those undescended testes which have not suffered a material reduction in size.

4. **Venereal Buboes in the Italian Army.**—Pugliesi does not agree with Colombini, who maintains that the virus of bubonic infection from venereal sores is attenuated in warm weather, and shows that in the Southern provinces of Italy buboes are very frequent. The summer months also give a considerable number of buboes as compared to the winter, but he attributes the frequency of buboes in October, which has by far the highest number of any month in the year, to the increased chances of exposure, owing to the increase of sexual activity among soldiers in the fall after the heated term is over. He favors the treatment by incision or puncture and injection of iodoform or bichloride as soon as the smallest focus of suppuration can be detected. In more advanced cases the suppurating glands should be thoroughly removed, and the abscess scraped with a Volkmann spoon.

LA RIFORMA MEDICA.

August 18, 1906.

1. Cancroprecipitins and their Application in the Diagnosis of Gastric Cancer, By Dario Maragliano.
2. Clinical Investigations on the Endovesical Separation of the Urine of Each Kidney, By Domenico Taddei.
3. Two Cases of Hæmorrhagic Encephalitis, By Giacomo Valdonio.

1. **Cancroprecipitins in the Early Diagnosis of Gastric Cancer.**—Maragliano's procedure is as follows: A patient in whom the diagnosis of cancer of the stomach is certain is selected, and his stomach carefully washed late at night before retiring. The next morning the fasting stomach is washed with some physiological salt solution, and the contents is filtered. If the filtrate contains proteid materials as testified by the ferrocyanide reaction it is adapted for the diagnostic work. From three to ten c.c. of the juice thus collected are injected into rabbits twice a week until the animals have received five injections. Then their serum is drawn from a vein in the ear as usual, and is used for the actual test. The serum is now subjected to a process of fractional precipitation. A solution of human serum diluted with thirty parts of physiological salt solution; a solution of human gastric juice so diluted that it still gives a proteid reaction with ferrocyanide and a solution of human gastric juice from a case of gastritis washed while the patient is fasting in the morning. This latter solution must be neutral and must give a proteid reaction with ferrocyanide. A mixture of these three solutions is used to precipitate the antibodies in the serum which do not correspond to cancer. One third of this mixture is added to two thirds of the immune serum of the rabbit, and is allowed to stand for a day or two. The resulting clear liquid left after filtering off the precipitate reacts only with cancerous gastric juice. In order to be sure that the product does not contain any other precipitins it may be placed in contact for another twenty-four hours with the residue of the serum, and no turbidity should be seen. The actual test of the suspected gastric juice is made as follows. The juice is obtained by expressing or washing with salt solution from the fasting patient in the morning. It should have a neutral reaction and should contain proteids. To a certain amount of the test serum some of the gastric juice is added carefully so that the liquids are superimposed. Within from two to five hours a white opaque ring is noted at the point of contact if there is cancer in the stomach examined. The practical value of this test as yet is in abeyance, but it is probable that it has at least the value that the Widal reaction has in typhoid fever.

2. **Separation of the Urine.**—According to Taddei, the separator of Luys is superior to that of Cathelin, as evidenced by practical comparative tests. In order to be sure that there is an actual separation of

the urine of each kidney, one should inject a coloring solution into one half of the bladder. The observation of the differences in the periodicity and the appearance of the streams from the two kidneys also assists in determining whether there is an actual separation.

August 25, 1906.

1. The Protective Action of the Liver Against the Toxine of Cholera, By GUSTAVO PADOA.
2. The Significance of the Spirochæta Pallida in Syphilis, By R. CAMPANA.
3. The Formation of Antibodies as the Result of the Ingestion of Vegetable Glutens, By G. CASTRONUOVO.
4. The Presence of Lead in Ice Cream, By ALESSANDRO BALDONI.

1. **Protective Action of Liver in Cholera.**—Padoa, in previous articles, studied the relation of the liver to typhoid diphtheria, colon bacillus, and other toxines. He now presents experimental studies on the protective effect of the liver upon the cholera toxine. His conclusions are that the protective power of the liver against the toxine of cholera is very evident, especially in the experimental injection of cholera toxines into the portal vein, which were not followed by marked changes in the liver, the protective action of this organ, preserving it from destruction.

2. **Significance of the Spirochæta in Syphilis.**—Campana experimented with inoculations of material from various syphilitic lesions upon blood serum agar, with a view of findings growths of the *Spirochæta pallida* (which he calls the Spirochæta of Hoffmann, for some reason omitting the principal name connected with it, that of Schaudinn). He is very sceptical about the true meaning of the spirochæta. Spiral formations occur as the result of the coagulation of the albuminous secretions on the slide, which can be mistaken for the spirochæta. Also the chromatin of tissue cells often is found in spiral formations, especially about the nucleus. These spirals of chromatin stain deeply, while the protoplasm stains lightly, and they represent the condition of chromatin fibres resulting from movements of the nucleus arrested in death. Levaditi's agglutinations of spirochætæ in the cells also are probably chromatin fibres. In the walls of vessels elastic fibres have been mistaken for spirochætæ. Another source of error are the mulberry shaped red blood cells which take the stain only at their peripheries, and the stained lines are spiral shaped. Similar illusions may be produced experimentally by placing minute droplets of egg albumen and water on slides, and making them roll about until the material is subdivided into spheroidal fragments under a cover glass. If stained this material shows spiral outlines at the peripheries of the fragments. Culture experiments with a variety of specimens from syphilitic lesions were entirely negative, so far as the spirochæta is concerned, though streptococci, staphylococci, colon bacilli, etc., were found.

4. **Lead in Ice Cream.**—Baldoni finds considerable amounts of lead in ice cream, fruit ices, etc., as sold in Rome. Gautier has calculated that every one takes about half a milligramme of lead daily in his food. This amount should not be increased, as lead poisoning easily occurs, owing to the difficulty in eliminating the metal. He attributes many of the disturbances of digestion occurring during the summer when ice cream, fruit ices, sorbets, etc., are consumed in larger quantities to the lead contained in these articles. The linings of the receptacles in which ice cream is made often consist of an alloy of tin and lead. The ingredients of ice cream dissolve, but in addition to this in turning the mass in the freezer a certain amount of the lining of the vessel is rubbed into the cream. This was proved conclusively by the writer, who found that particles of tin and copper were precipitated at the bottom of glass vessels in which he melted ice cream. On filtering the liquid these particles also were found on the filter. He destroyed the organic portions of the cream by means of fuming nitric acid and by electrolysis, and recovered the lead. In each portion of ice cream he calculates there is about 0.69 milligrammes of lead. This is about the normal daily dose of lead taken in the food, and thus eating a portion of ice cream doubles the normal amount. This he believes is a serious matter.

ROUSSKY VRATCH.

August 12, 1906.

1. The Differentiation of Human Blood from that of Animals by the Crystals of Mathæmoglobin and of Fat in Medicolegal Investigations (*To be concluded*), By A. V. GRIGORIEFF.
2. Changes in the Ova in Atresia of the Graafian Follicles, By V. J. ROUBASCHKINE.
3. Clinical Observations on Digalen (*To be continued*), By Z. TH. ORLOVSKI.
4. An Epidemic of Jaundice in Tomsk. By P. A. LOMOVITSKI.

4. **Epidemic of Jaundice.**—Lomovitski found that during the year 1905 there were an unusual number of cases of acute jaundice in the city of Tomsk. While in other years less than one per cent. of all patients were jaundiced, in 1905 nearly three per cent. were so affected. Nearly one and a half per cent. of the entire population of the city was attacked with jaundice in the sixteen months, beginning in September, 1904. In over ten per cent. of the cases there were more than one case in the same house. In two houses six cases in each occurred; in three houses five cases each. The type of jaundice varied to a great extent, some of the cases being very mild, while others were severe and even fatal. All cases had some fever, but in most instances it was slight. The severe cases had occured exclusively in women, especially pregnant women, or after childbirth. None of the men died, and the mortality among women was 1.1 per cent. A large percentage of the fatal cases occurred in puerperal women. As there was an increase during this epidemic of cases of acute yellow atrophy of the liver in the city, the author thinks that there may have been a connection between the two conditions. A collection of the recorded epidemics of jaundice till 1888 will be found in Hemrig's work (Volkmann, *Sammlung klinischer Vorträge*, 1888, No. 8).

ANNALS OF SURGERY.

August, 1906.

1. On the Use of the Masland Saw for Opening the Cranial Vault, By H. C. MASLAND.
2. On the Use of the Temporal Fascia to Cover in Cranial Defects, By C. BECK.
3. Acute Septic Infection of the Throat and Neck. Ludwig's Anzina, By G. C. DAVIS.
4. Total Laryngectomy for Carcinoma. Report of a Recent Successful Case, By A. H. BOGART.
5. The Treatment of Diffuse Suppurative Peritonitis Following Appendicitis, By L. W. HOTCHKISS.
6. A Review of Fifteen Hundred Operations on the Gallbladder and Bile Passages, with Especial Reference to the Mortality, By W. J. MAYO.
7. Solitary Abscess of the Liver. A Contribution to the Pathology, Diagnosis and Treatment of this Disease Based on the Study of Eighteen Cases, By C. A. ELSBERG.
8. The Treatment of Gastric and Duodenal Ulcers and Benign Obstructions of the Pylorus, By A. MACLAREN.
9. Volvulus of the Small Intestine in Typhoid Fever Simulating Perforation, By J. B. ROBERTS.
10. Myofibroma of the Large Intestine, By W. L. ESTES.
11. The Operative Treatment of Cancer of the Large Intestine Causing Dangerous Intestinal Obstruction, By H. W. CUSHING.

12. Individual Excision and Suture in Operating for the Removal of Hæmorrhoids, By L. S. PILCHER.
13. The Treatment of Ectopic Vesicæ, By F. TRENDELENBURG.
14. Congenital Protrusion of Heart, Stomach, and Spleen. Case of Celosoma, By C. H. WINTSCH.
15. Chewing Gum Nucleus of Vesical Calculus, By E. B. KENNER.
16. Dislocation of the Metatarsal Bones, By L. W. ELY.

1. Saw for Opening the Cranial Vault.—Masland attributes the following advantages for his instrument: The osteoplastic flap can be made any size or shape. The time required to make the cut is very short. With the use of the outside guard it is impossible to cut too deeply. Hæmorrhage is obviated especially when the inside guard is used. The incision is only one millimetre in width, whatever the thickness of the skull. Perfect bony support is secured for the returned flap of bone, thus giving perfect bone protection to the brain. There is no vibration of the instrument, there is a comfortable grasp for the hand, without tension, thus permitting full utilization of the sense of touch. The inside guard can be immediately detached and the saw at once withdrawn from the cut. The construction of the saw is so simple that there should be no mishap from its use. It can be easily taken apart, cleansed, and put together again. It is believed that its use will open a new field in successful and more perfect surgery of the brain.

3. Acute Septic Infection of the Throat and Neck.—Davis reminds us that this disease, known also as Ludwig's angina, involves the mouth, submandibular and parotid regions. Its pathology and treatment are not yet entirely mastered. It is often fatal. It was described as to its gross manifestations by Ludwig in 1836. It is probably a mixed infection of the most complex nature, and may be caused by the staphylococcus, streptococcus, pneumococcus, or a mixture of various forms, including a gas producing bacillus. It starts from some lesion in the mouth or throat, often from the teeth. In some cases the focus of inflammation involves the tonsil, epiglottis, and larynx. Œdema of the glottis may require tracheotomy and may cause death. It spreads along the connective tissues by direct continuity. It may follow the cervical tissues into the mediastinum and cause septic pneumonia. It runs its course in six to twelve days. It is primarily a local disease, but becomes general after a few days. In making the diagnosis it must be differentiated from those diseases which are local from beginning to end. The hard, bone like character of the swelling is almost pathognomonic, and this is associated with swelling of the floor of the mouth, pushing the tongue upward, and difficult in breathing and swallowing. Under anæsthesia with ethyl chloride, ether, or chloroform an incision should be made in the median line between the symphysis and the hyoid bone and carried through all the tissues to the mouth. There is hæmorrhage from such an incision when made early, and drainage will be efficient.

5. Diffuse Suppurative Peritonitis Following Appendicitis.—Hotchkins thinks the subject of treatment in diffuse peritonitis one of the most unsettled in surgery. The utter impossibility of draining the general peritoneal cavity, and the nature of the peritoneal reaction to drainage are not generally understood. The irritation of the peritonæum by foreign substances is the signal for the entrance into the peritoneal cavity of a large number of phagocytes. If the endothelium of the peritonæum is uninjured, bacteria and other substances can be safely disposed of by the lymphatics of the crura and central tendon of the diaphragm, where most of the peritoneal absorbents are situated. Injured endothelium means opened bloodvessels and possible fatal septic absorption. In most cases the safety of the patient in peritonitis is favored not only by the endothelium, but by a protective fibrinous deposit which limits absorption into the peritoneal bloodvessels and prevents the egress of germs from the lumen of the intestine. Twenty-eight cases are collected by the author for analysis under the following conditions: 1. In all cases there was free pus, and its limits were not generally definable. 2. Ability to wash pus from the pelvis, splenic pouch, and lower abdomen was taken as evidence that the peritonæum in these regions was involved. 3. Large secondary encapsulated pelvic collections of pus were not included. Of the twenty-eight cases, five were fatal. Success in the other cases was attributed to rapid removal of the cause with as little disturbance as possible, avoidance of drainage, and reliance upon the great natural powers of the inflamed peritonæum to cope with the infection.

6. A Review of Fifteen Hundred Operations Upon the Gallbladder and Bile Passages.—Mayo analyzes the work of his brother and himself in this field between 1891 and 1906. He considers the three most important considerations to be the mortality, the permanence of cure, and the disability arising from the operation. The mortality in the 1,500 operations was 4.43 per cent. This includes death from acute perforations with septic peritonitis, malignant disease, pulmonary embolus, myocarditis, and various chronic conditions. Of the 845 cholecystostomies the mortality was 2.13 per cent. This is the normal and the safest operation. Future trouble after this operation may come when the cystic duct is obstructed, the gallbladder taking no part in the biliary circulation, and when it is thick walled and functionless. In common duct operations a functionating gallbladder should not be removed except for direct indication. Of 319 cholecystectomies 3.13 per cent. were fatal. The authors prefer this operation when the organ can be easily removed, and the disease is confined to it. Of 207 operations upon the common duct the mortality was 2.9 per cent. in cases in which there were no immediately active symptoms, 16 per cent. when there was active infection in the common duct and in the ducts of the liver, 34 per cent. when there was complete obstruction of the common duct, and $33^1/_3$ per cent. when there was malignant disease. In eighty-six of the 1,500 cases there was involvement of the pancreas and eight were fatal. The lesson from this experience was that early operations were most likely to be successful.

7. Solitary Abscess of the Liver.—Elsberg divides the subject into the following groups: 1. Tropical abscess following tropical dysentery, associated with the amœba coli, and in some cases following dysentery due to Shiga's bacillus. 2. Traumatic abscess, either as a secondary infection from hæmorrhage into the liver, or by direct infection from the surface of the body. 3. Pyæmic abscess associated with systemic pyæmia. With this may be associated a bacteriæmia. 4. Liver abscess secondary to various abdominal affections, the infection being probably carried to the liver by the portal vein. Eighteen cases are narrated of which five were fatal. In fifteen of them the abscess was located in the upper part of the right lobe of the liver. The characteristic symptoms were pain, fever, enlargement of the liver, and emaciation; and in all the cases in which a blood count was made there was a leucocytosis. The treatment is primarily aspiration of the liver, and when pus has been discovered, an operation as promptly as possible.

REVUE DE CHIRURGIE.

August, 1906.

1. Luxation of the Thumb Complicated with Protrusion of the Bones, By COUTEAUD.

2. Total Resection of the Saphenous Veins in the Treatment of Superficial Varices of the Lower Limbs, By TERRIER and ALGLAVE.
3. Treatment of Cancer of the Rectum, By M. DU PAN.

1. **Luxation of the Thumb Complicated with Protrusion of the Bones.**—Couteaud draws the following conclusions: The treatment of dislocation of the thumb complicated with protrusion of the bones will vary with the nature of the case. Amputation should never be performed, an imperfect hand is much better than an artificial one. Resection is far preferable to amputation. Reduction is preferable to resection, except in cases of great deformity. Resection of the dislocated bones of the carpus will be necessary. Resection of the thumb at a later period will be the ultimate resource. A firm splint should be the sole immobilizing apparatus at first. Prolonged antiseptic baths should be practiced. Exercise and massage of the joints should be instituted as early as possible.

3. **Treatment of Cancer of the Rectum.**—Du Pan concludes his paper as follows: 1. Heredity, sedentary occupation, habitual constipation, hæmorrhoids, and traumatisms do not have the ætiological influence that has generally been ascribed to them. 2. Cancer of the rectum develops more rapidly prior to the fortieth year than at later periods of life, and usually takes the colloid form at that period. Its prognosis is bad. 3. Its insidious beginning is one of the chief obstacles to the improvement in the ultimate result of operative measures, an early diagnosis being of rare occurrence. This shows the importance of rectal examinations in all rectal disorders. 4. The average duration of the disease in nonoperated cases is twelve months from the beginning of the symptoms. In operated cases the average duration is fifty-six months. 5. Immobility of the tumor is the sole contraindication to a radical operation. 6. Preliminary colostomy should be avoided if possible. Only in cases of severe ileus should it be practised. 7. The coccygeal operation of Kocher should not be confused with the perineal and sacral methods. Kocher's method is recommended as the most effective and desirable. 8. The diseased segment having been removed the end of the intestine should be secured to the anus, the mucous membrane of the latter having been dissected away. 9. The peritonæum should be carefully sutured, and not tamponned or drained. 10. The aim of the subsequent treatment should be the avoidance of infection. Should infection appear, irrigation and drainage must be rigorously carried out. 11. The operative mortality with the author has been 14.58 per cent. Ether should be used as the anæsthetic. 12. Recurrence took place in 39.7 per cent. of his cases, usually in the circumrectal tissue.

REVUE DE MEDECINE

August, 1906.

1. The Poisons of the Digestive Tube in its Normal Condition, By H. ROGER and M. GARNIER.
2. The Nature, the Production, and the Significance of the Urinary Ether Sulphates, By H. LABBÉ and G. VITRY.
3. The Pulmonary Adenopathies. Anatomical, Clinical, and Radioscopic Study. By M. PIÉRY and A. JACQUES.

1. **The Poisons of the Digestive Tube.**—Roger and Garnier narrate the results of an experimental study upon this subject. They found by comparing the effects produced by the contents of the stomach, small intestine, and large intestine that the extracts obtained from the small intestine were remarkable from the constancy of their effects and their toxic dose, while the variability of those from the stomach and large intestine was much greater. They denote by the term *enterotoxia* the quantity of poison necessary to kill a rabbit weighing one kilogramme by intravenous injection. A necessary condition is that the animal should die at the conclusion of the experiment. With dogs as well as with rabbits it was found that the extract derived from the stomach was not sufficiently toxic to cause immediate death. The toxic power of the extract derived from the contents of the stomach was found somewhat more virulent than that from the stomach. The toxic power of the contents of the large intestine, notwithstanding the conditions of putrefaction involved, was less marked than that relating to the small intestine.

2. **The Nature, the Significance, and the Production of the Urinary Ethereal Sulphates.**—Labbé and Vitry find the following conclusions: 1. In a normal subject the quantity of these substances eliminated by the urine directly depends upon the quantity of albumenoid substances in the diet. In most cases there is a direct proportion. 2. The quantity of albumenoids ingested being constant, their quality will have great bearing upon the quantity of sulphates eliminated. 3. There is no actual relation of proportion between the ethereal sulphates and the alimentary albumens simply as ingested, but rather when they have been digested and assimilated. 4. The influence of fatty substances ingested daily with the food upon the production of the sulphates is slight unless the quantity ingested is large, when it causes diminution in their production. 5. The influence of the hydrocarbons ingested with the daily diet is manifest only in the presence of large quantities of albuminoid substances. If a considerable quantity of farinaceous material is added to the diet, there is an increase in the ethereal sulphates eliminated. 6. The authors have not been able to detect the antiputrid effect of fresh cheese and of the lactose which it contains in the formation of these urinary sulphates. If the quantity of albumin ingested in a given case exceeds that which is assimilable it remains undigested, and the relation of proportion between albumen ingested and ethereal sulphates eliminated disappears.

3. **The Pulmonary Adenopathies.** — Piéry and Jacques conclude as follows: 1. Anatomical and radioscopic investigations show a difference between pulmonary adenopathies and those of the mediastinum and trachea. Only the first of these will inform us as to the condition of the lung. 2. In every form of pulmonary infection, whether tuberculous or otherwise, according as the pulmonary glands are found greatly developed, hypertrophied, and numerous, so will the pulmonary process be found more intense. 3. In order to make a satisfactory radioscopic examination of the glands there must be a movable ampulla, a good diaphragm, and rays of average penetration. 4. While tracheal adenopathies require an oblique lateral examination, pulmonary adenopathies call for one that is anteroposterior. They will be found on either side and at a certain distance from the vertebral column. They are much more frequent on the right side and are better seen by an anterior examination of the body. 5. The appearance of these adenopathies differs according as the lesion is chronic or recent. The image may be classified as follows: 1. Homogeneous band. This is observed when the glands are inflamed and hypertrophied and may be seen in every pulmonary disease, whether tuberculous or nontuberculous. 2. Moniliform bad, with black spots upon a dark base. This is seen in abortive and fibrocaseous tuberculosis with repeated attacks. 3. Dark rounded spots, with limited contours. This is observed in cases of latent tuberculosis. 6. Radioscopic examination enables one to make a diagnosis of pulmonary adenopathy which would otherwise be overlooked. It enables one to foretell the method by which the disease will progress by determining the process which will be taken by the bacilli, or by enabling one to differentiate between progressive and stationary lesions.

THE PRACTITIONER

September, 1906.

1. Angina Pectoris, By G. A. Gibson.
2. An Improved Method of Putting Up Fractured Clavicals, By T. D. Manning.
3. On the Diagnosis of Abdominal Tumors in Relation to Pregnancy, By W. E. Fothergill.
4. Asphyxia Neonatorum. Its Causes and Treatment. A Discussion on the Many Theories and Practices of the Present Day, By J. S. Sheill.
5. On the Use of Rubber Gloves in Abdominal Operations, By F. E. Taylor.
6. A Case of Infantilism, By W. B. Ransom.
7. Synopsis of Recent Progress in Otology, By R. Lake.
8. The Estimation of the Functional Value of the Kidneys, By J. W. T. Walker.
9. History of a Diphtheria Outbreak (Complicated with Vincent's Angina) at the Lambeth Parochial Schools, West Norwood, May to July, 1905, By J. Priestley.
10. The Nature and Treatment of Angina Pectoris. By H. Barber.

1. **Angina Pectoris.**—Gibson observes that the great fact in this disease is the existence of pain around which the attendant phenomena are grouped. It usually radiates to one or both shoulders and arms. There are usually repeated paroxysms induced by exertion or by digestive conditions. Other sensations are faintness, weakness, and breathlessness. Objectively there are pallor or cyanosis, immobility or contortions, dry or moist skin. The vascular tension varies within wide limits, and there may be an increased flow of urine and saliva. The disease probably depends upon impairment of the function contractility. In the treatment of the disease it is necessary to determine whether there are underlying conditions inducing or influencing the symptoms. The drugs which are usually serviceable are those which lessen vascular resistance, especially the nitrites and the iodides. Amyl and butyl nitrite, ethyl iodide, alcohol, ammonia, and morphine are recommended, also heat to the chest and artificial respiration. Careful regulation of the diet must always be considered from a prophylactic standpoint.

3. **On the Diagnosis of Abdominal Tumors in Relation to Pregnancy.**—Fothergill states that it is clear that pregnancy, either ectopic or uterine, may easily be mistaken for a new growth, since in many cases of pregnancy there is no absolute proof of its existence. It is possible to mistake a pregnancy for a tumor, it is easy and not at all unusual to mistake a new growth for a pregnant uterus. One of the most frequent causes of erroneous diagnosis is the habit of taking the diagnosis from the patient in place of making a careful examination, an anæsthetic being used if there is any uncertainty in the case. The coexistence of pregnancy and uterine or ovarian tumor requires unusual care in examination, and skill in diagnosis. The use of the sound in such examinations is not recommended, as it is very apt to be of no value in determining the situation and may do serious harm by the injury to the mucous membrane, and subsequent inflammation which it causes.

4. **Asphyxia Neonatorum.**—Sheill divides the causes of this accident into various categories. Thus as to the cord it may be knotted, twisted, or looped. As to the mother there may be sudden death, fever, eclampsia, hæmorrhage, poisoning, obstruction in the placental vessels. As to the fœtus, there may be immaturity, syphilis, dropsy, tumors, etc. Other causes may be delayed labor, prolapse of the cord, placenta prævia, too profound narcosis. Prophylactic treatment will include the correction of malpresentation, replacement of prolapsed cord, prevention of premature rupture of the membranes, careful use of the forceps and of the anæsthetic, careful delivery of the after coming head. In fatal cases one may find grooves and fractures of the fœtal skull, engorgement of the lungs and air passages, and injuries of the brain, meninges, and liver. The prognosis in a given case depends upon the efficiency and promptitude of the treatment, and upon the original cause of the accident. If the lungs have not been fully inflated death may result from atelectasis or aspiration pneumonia. As to treatment, efforts should be directed to establishing or improving the working of the respiratory and circulatory systems, and to preventing the fall of the body temperature below the normal. The methods of artificial respiration of Schultze, Silvester, Marshall Hall, and Byrd are described and commented upon.

5. **On the Use of Rubber Gloves in Abdominal Operations.**—Taylor mentions three possible extraneous sources of infection during the performance of an abdominal operation: (1) The hands of the surgeon and his assistants. (2) The skin through which the incision must be made. (3) The instruments employed. With rubber gloves the hands can be covered with an impermeable material which can be sterilized by boiling without interfering with the manipulative dexterity of the surgeon. The outside of the glove should never be subjected to friction from the bare hand in drawing it on. The glove covered hands should be frequently rinsed during an operation, in sterile salt solution, not only when soiled, but in order to keep it moist. If a glove is pricked or torn during an operation, the injury should at once be repaired by a finger stall, or a fresh pair of gloves should be used. The author thinks that the use of gloves signifies diminished morbidity and complications after abdominal operations, even though the influence upon mortality may not be directly demonstrable.

7. **Synopsis of Recent Progress in Otology.**—Lake thinks some striking advances in this field have been made within the present year. He remarks the increased use of the tuning fork for diagnosis and prognosis, the researches into the pathology of ear disease, and the use of such measures as vibratory massage. He points out the extreme difficulty of researches into the pathological anatomy and the elucidation of symptoms in ear disease, excluding those which have their origin in the effects of suppurative conditions. Microscopical examination of the structures of the ear is seldom made after death, and when such an opportunity does occur the disease is not limited to a small part of the labyrinth or its capsule, but has become general and diffuse. This necessitates the formation of hypotheses. Suppurative disease of the labyrinth has only received due consideration in recent years. Bier's method of treatment in acute ear disease is mentioned as a decided advance, and consists in producing artificial hyperæmia by compressing the superficial veins by means of a rubber bandage around the neck.

8. **The Estimation of the Functional Value of the Kidneys.**—Walker quotes the following as Albanan's conclusions: 1. Careful examination shows that the two kidneys produce a different quantity of urine, and that the concentration of each kidney in urea, chlorides, and phosphoric acid is in inverse ratio to the quantity. 2. In twenty-five per cent. of all cases the urea shows a difference of concentration of one gramme per litre, and it may exceed 6.5 grammes. 3. In a third of all cases the difference between the chlorides exceeds fifty centigrammes per litre and may reach five grammes. 4. When one compares two successive examinations of each kidney collected during the same space of time the differences are found to diminish. 5. In the same time there is compensation between the two kidneys by the increased concentration of the less abundant urine. 6. In successive periods of time the concentration is more complete, and is made up by the concentration and the quantity of the fluid, or by one of these factors alone. 7. The function of the kidneys is more equal when it is compared over a long space of

time. 8. Any comparative examination of the two kidneys, in which the urine was collected during a less time than an hour, is not sufficient to estimate, even with considerable differences, the real comparative value of the two glands.

Proceedings of Societies.

AMERICAN SURGICAL ASSOCIATION.

Annual Meeting, held in Cleveland, Ohio, May 30 and 31 and June 1, 1906.

(*Continued from page 570.*)

The President, Dr. ALBERT VANDER VEER, of Albany, N. Y., in the chair.

A Series of Cases of Malignant Growths, with a Clinical Study of the Possibilities of Carcinoma and Sarcoma Appearing in the Same Patient.—This was the title of the president's address, by Dr. ALBERT VANDER VEER, of Albany, N. Y. For many years he had had in mind the possibility of the duality of malignant diseases as to carcinoma and sarcoma presenting themselves in the same patient and as to the genesis of many cases appearing in one family. With these thoughts in mind, he presented the following observations:

He had first been attracted to this subject by the case of Mrs. P. R., æt. fifty-seven, who presented herself on March 20, 1870, with acute carcinoma of the left breast, and while being prepared for operation, was suddenly seized with a convulsion, ending in immediate death. An autopsy revealed a tumor from the dura, extending outward, ulcerating nearly through the cranium, which had caused deep pressure upon the brain substance. No other growths were found in the brain, and, aside from the left breast, all the other organs were in a healthy condition. A microscopical examination made of the brain tumor at the time, together with the macroscopical appearance, classed it as a sarcoma. The microscopical examination of the tumor from the breast was positively that of acute scirrhus, or carcinoma.

Years passed by, and, though many cases were observed, giving all the phases of malignant growths, yet no picture presented itself like that carried in his mind of carcinoma and sarcoma appearing in the same individual. In May, 1880, he was called to see Miss C. J., æt. fifty. She had passed her menopause without any complications, but for nearly two years had noticed a growth in her left breast, which she had shown to no one until then, when the ulcerative odor had attracted attention, and, on examination by her physician, he found a carcinoma far advanced. There were large masses in the axilla and in the supraclavicular and infraclavicular spaces. No operation was possible, and the patient died on June 10th from sepsis. There was no autopsy. Her family history was of interest. Her father, æt. seventy-three, had recently died from an extensive and long standing epithelioma of the lip and face which had involved the glands of the neck. He had never permitted treatment of any kind. He had previously lost a brother, at the age of fifty-six years, with some form of malignant disease of the foot, after a long illness. Otherwise, Miss J.'s family history seemed excellent. Her mother, æt. seventy, was in good health and gave a good family history, but died later from some kidney complication.

Some time after the death of the first and eldest sister, he was called to see the second sister, Miss D. J., æt. fifty-three, with a good personal history, who a few months previously had noticed a tumor in her left breast. On examination it was plainly a case of movable acute carcinoma without axillary complications. An immediate operation was advised and agreed to. The operation was very thorough, extending far up in the axilla, but not removing the pectoral muscle. She remained well for about fifteen months, when a few nodules appeared in the cicatrix, which ulcerated, giving her little annoyance, but within a short time, on September 9, 1886, she died from metastases to the liver and stomach. No autopsy was held. Examination of the tumor removed classed it as a case of acute scirrhus. The lessening of her sufferings, as compared with her sister's case, made a very profound impression upon her family and friends.

In May, 1889, he saw Mrs. E. J., aged fifty, a fourth sister, married, the mother of one child, whom she had nursed for a few months without any mammary complications. Several weeks previous to his visit she had noticed a tumor in her left breast, associated with sharp, lancinating pains, retraction of the nipple, and all the symptoms which she had noticed in her sisters' cases. She was greatly disturbed, but with her husband, readily agreed to a prompt operation, which he made equally thorough as in the last case, doing it at the home of the patient. She remained well until January, 1903, when he was again summoned to see her, as she had a few days previously called her physician's attention to marked abdominal pain. Upon examination it was very evident she was suffering from an ovarian cyst. She entered the Albany Hospital at once and at the operation a multilocular cyst was found connected with the left ovary. Examination of the tumor removed demonstrated it to be an ovarian cyst with secondary papillomatous and carcinomatous degeneration. The right ovary and appendix were normal. Following this operation, Mrs. J. gained greatly in health and flesh and made a European trip. In May, 1904, he was again called to see her. Two weeks previously she had begun to suffer with severe abdominal pain; the abdomen was tender to the touch and there was some slight nausea. She entered the Albany Hospital on January 25, 1904, and after preparation he operated on the morning of the 26th. Incision revealed a large cyst connected with the right ovary. This was aspirated, but the cyst wall was found so thoroughly adherent to the surrounding tissues, including the appendix, the head of the cæcum, and the small intestine, that it was found impossible to remove it entirely. The greater portion was excised and a laboratory examination revealed the same general characteristics as those of the previous tumor of the left ovary. She was discharged from the hospital on February 19, 1904, and improved after this, being quite comfortable until within two weeks of her death, which occurred on October 20, 1904. There was no autopsy, but there was every evidence of the mesenteric glands and stomach being involved. The breast scars showed no return of the growth, and in every way she had enjoyed perfect use of her arm.

In April, 1897, he saw in consultation Mr. H. J., æt. fifty-six, husband of Mrs. E. J., who presented a good family history. He gave a record of an enlargement of the right testicle, sarcomatous in character, as was later confirmed by the pathologist. A thorough operation was done for the removal of the diseased organ, and the man remained well for years. There was no return of the growth in the cicatrix, or any metastasis, as shown at the autopsy. Mr. J. died in May, 1900, of arteriosclerosis and great dilatation of the heart.

In September, 1897, he had seen the third sister in this family, Mrs. F. J., æt. fifty-one, the mother of six children. At that time she called his attention to a sore she had noticed under the right breast, in the flexure of the skin, which had existed for several months, and which frightened her greatly. It had all the appearances of a true epithelioma. She begged not to have the knife used, and he treated it with Vienna

caustic and arsenic acid paste. The ulcer healed kindly and she remained well, passing her menopause without any growths appearing elsewhere. From May, 1903, he had this same patient, Mrs. F. J., under observation for prolapse of the uterus, with a constant leucorrhœal discharge, occasionally tinged with blood. He made a number of careful examinations and was unable to make out any malignant growths. Under the use of douches and a rubber ring pessary she was made very comfortable. She begged of him not to mention an operation, saying she was "too old," and then "you know what our family history is." In October, 1905, she noticed a small tumor in the left breast. After examination he had not the courage to tell her his worst fears; however, he kept close watch of the growth and on January 10, 1906, insisted upon an immediate operation. Passively she consented, and the operation was done at the Albany Hospital three days later. She was then sixty years of age. He did a thorough dilatation and curetting of the uterus, repaired the perinæum, removed several hæmorrhoids, and, while she was under ether, made a complete examination of the pelvis and abdomen. There was no abnormal condition present. He then removed the left breast and the contents of the axilla. Microscopical examination showed the case to be one of carcinoma, with metastasis to the lymph nodes, and chronic endotrachelitis, with papilomatous proliferation of the surface epithelium. The patient made a good recovery, normal in every respect.

In May, 1896, Miss G. J., daughter of Mrs. F. J., the third sister, met with a severe accident, accompanied with concussion of the brain. She, however, made a good recovery. Later she passed through a severe attack of typhoid fever She had always been a strong, bright, active girl, fond of outdoor sports. Not long after her convalescence she had epileptic seizures, at times very serious. She lingered some years, and died on May 15, 1900, with marked symptoms of tumor of the brain. He had transferred this patient to the care of a specialist, was away from home at the time of her death, and had been unable to get a copy of the post mortem notes; however, he had been told that the case was considered to be one of sarcoma of the brain or a glioma.

In the study of these cases the thought of house infection was to be considered. The first two sisters were born in the house where the uncle had passed much of his time when suffering from malignant growth of the foot. The last two were born in the house and lived where the father was attacked with epithelioma of the lip and face, and was ill for a long time. Each of the houses referred to was old at the time of the birth of these children. One was yet standing, but in neither had he been able to learn of any more or other cases of malignancy. It was somewhat interesting to note that, in the four sisters, it was the left breast implicated in each case. He had a record of and had seen a number of cases of carcinoma of the breast in women who had nonmalignant fibroids of the uterus, and after an operation for the former, malignancy did not develop in the latter. He had also operated for both conditions when the strength of the patient would admit, always bearing in mind the sympathy between these organs in malignancy of either.

As far as possible, the writer had looked up the literature, which was exceedingly meagre, bearing on the subject of this paper, and presented extracts (having in mind the ætiology, pathology, and possible prophylaxis) from the admirable work of Professor Jensen, of Copenhagen.

Some Experiences in Intracranial Surgery.—Mr. Charles A. Ballance, of London, England, said that surgical intervention was at present the only remedy for certain intracranial diseases, but only too generally the same apathy prevailed in adopting this remedy as had been prevalent some twenty-five years ago in operating for analogous diseases in the abdomen. He offered some remarks suggested by his own experience in operating for tumor of the brain, abscess of the brain, subdural hæmatocele, meningitis, and internal hydrocephalus.

Prominent among the obstacles to a successful operation for intracranial disease, and particularly for brain tumor, was the difficulty of making a precise diagnosis at an early stage of the disease. The diagnosis of intracranial disease was, speaking generally, a far more complex problem than that of intraabdominal disease, and, moreover, within the skull an exploratory operation could not be conducted in the same rapid and complete manner and with so little serious risk as in the abdomen. The maxim that a diagnosis must precede an operation was true only of those diseases the signs, symptoms, and course of which were fully comprehended. When the early clinical manifestations of a disease were ill understood and when danger attended delay, the surgeon was content to act upon a provisional diagnosis. Many lives were thus saved and the diagnosis became perfected.

Another point of practical interest was that a highly cellular tumor of the brain was not necessarily very malignant. This was true not of brain tumors only, but of tumors of other parts of the body; thus, a large cellular carcinoma mammæ might prove less malignant than a small atrophic scirrhus with few cellular elements.

In 1903 he had drained a large gliomatous cyst in the left frontal lobe of a man under the care of Sir William Gowers. The symptoms were relieved, but recurred two years later. He then removed a large mass of tumor from the same region. The patient left the hospital well and proposed to resume his work.

He drew attention to the bulging of the occipital fossa in cerebellar tumor in childhood. In 1889 he removed a tumor from the cerebellum of a child, aged three years and a half. The main localizing sign was a bulging of the occipital fossa. Last year a boy, six years and a half old, was admitted to his ward in the Great Ormond Street Children's Hospital, with signs of cerebellar tumor. The right cerebellar region was slightly more prominent. This sign, anatomical in this case, led to exploration on the wrong side. The symptoms were equivocal. Shortly, these were: Paroxysmal headache, vomiting, and cerebellar gait; unsteadiness in standing, but without marked tendency to fall to one side more than to the other; deviation to the right in walking and in running; incoordination of the limbs to an equal extent on the two sides; and optic neuritis on both sides, most marked on the left. The attitude of the head was that described by Batten as corresponding to left cerebellar tumor, but it was well known that the attitude of the head was not conclusive as to the site of the disease. This case presented an interesting study in its demonstration of how an erroneous first impression worked out to a false conclusion and in this particular instance to ultimate disaster, as, although the cyst was drained at a second operation, the child did not survive.

In the ward were two other cases: A boy, aged four years and ten months, whose left occipital fossa bulged considerably. There was incoordination of the left upper limb. A large tuberculous tumor was removed. The child is now well. A girl, aged seven years and ten months, had no bulging of the occipital region. No regional diagnosis was possible. The right cerebellar region was first explored; then the left. A large tuberculous tumor was removed. The patient made good progress for three months. Death then occurred

suddenly from hæmorrhage, possibly scorbutic in origin, tearing up the whole left cerebral hemisphere.

To prove that an operation for cerebellar tumor in the adult might be completely successful, he mentioned that in 1894 he had removed an encapsulated fibrosarcoma from the right cerebellar fossa of a woman, aged forty-nine years, and she was alive and well now.

It was now generally recognized that an abscess in the brain should be treated like an abscess elsewhere. In most cases of slowly spreading infection from chronic disease adhesions occurred at the site of infection, binding together dura, arachnoid, pia, and cortex.

In subdural hæmatocele, satisfactory results were obtained by removing the cysts. In a case of his, already published, a cyst, 7 by 4½ by 1½ inches, was successfully removed. He had since met with three other cases. In one of Prescott Hewitt's cases the patient, a boy, received a blow on the head from a cricket ball. He lived for fifteen years, during which time he suffered from intermittent insanity.

Meningitis serosa often arose when pus collected outside the dura, as, for example, in some cases of acute mastoid suppuration. The symptoms were: Rise of temperature, slowing of the pulse, sluggish pulse, nausea, and drowsiness. All these symptoms might be promptly relieved by lumbar puncture. The withdrawal of fluid might prevent the meningitis from going on to suppuration, just as the removal of fluid from the pleura by the aspirator relieved the lung from pressure and might prevent the pleurisy from going on to empyema.

Internal hydrocephalus was met with in infants as a congenital condition or as the result of posterior basal meningitis; the congenital form had resulted from intrauterine meningitis. There were two methods of dealing with hydrocephalus: 1. Intradural drainage. This could be carried out through the lateral angle of the anterior fontanelle, or the descending cornu of the lateral ventricle on the right side might be opened by the ingenious method of Keen. A fine tube, bent at a right angle, made of gold and iridium or of pure platinum, should be used. 2. Ligature of both carotids. The secretion of fluid might be lessened by ligature of one or both common carotid arteries. This could safely be done in hydrocephalic infants in whom the blood supply to the brain stem was of much more relative importance than that to the cerebral substance and the chorioid plexus. He had had successful cases by both these methods.

He had published a case in which the removal of tuberculous disease of the temporal bone had cured incipient infection of the meninges, as shown by headache, vomiting, and squint. He was convinced that the treatment of intracranial disease had been too long encrusted with conventionality. Cases of brain disease requiring surgical relief were numerous and widely distributed, but those who operated in them, especially on brain tumors, were few and far between. Not very long ago the same was true of acute abdominal diseases, but now the surgery of acute abdominal disease was successfully practised by the great body of surgeons. Until this stage in the history of brain tumors had been reached many remediable cases must go unrelieved.

A Year's Experience in Intestinal Surgery.—Dr. JOHN B. DEAVER, of Philadelphia, said the forty patients whose cases formed the text of his remarks had been operated on at the German Hospital and the Children's Hospital of the Mary J. Drexel Home since January 1, 1905. These cases comprised twelve simple enteroenterostomies; eleven intestinal resections, with enteroenterostomy; one enterotomy; two colostomies; seven enterorrhaphies for various forms of fæcal fistula; one suture of a typhoid perforation; one reduction by manipulation of an intussusception; and two instances in which strangulating bands or adhesions were divided, besides three other (atypical) operations —a total of forty-six operations on forty patients.

There were thirteen cases of intestinal carcinoma, all in the large bowel. The cæcum was dissected in four cases, the hepatic flexure of the colon in two, and there was one case each in which the part affected was the transverse colon, the splenic flexure of the colon, and the rectum; while there were four patients in whom the sigmoid was the seat of malignant disease. Five of these thirteen patients died—those patients in whom the splenic flexure and the rectum were involved, one of those with the cæcum affected, and two of those in whom the sigmoid flexure was diseased. The eight remaining patients recovered from the primary operation and were relieved temporarily, but of the four successful cases in which the patients were seen sufficiently early for a radical operation to be done, two had symptoms of recurrence about eight months later, and were again temporarily relieved by a further operation, and in the case of two others, on whom a radical operation was done, sufficient time had not elapsed since the operation to permit of their being considered in this connection.

The Treatment of Congenital Dislocation of the Hip. —Dr. E. H. BRADFORD, of Boston, said that in a large number of cases of congenital dislocation of the hip a complete cure could be accomplished by manipulative reduction. In difficult cases efficient mechanical reduction was of assistance. In certain cases, owing to a distorted capsule, the femoral head was not placed deep in the acetabulum or was kept from the bottom of the acetabulum by a capsular fold, and relapse took place. Under these circumstances the surgeon could by incision of the capsule widen the capsular constriction, place the capsular flaps around the head and neck, and secure the head of the femur until cicatrization had formed a retaining capsule about the reduced head. The operation was a somewhat difficult one and was apt to be imperfectly done. It was a serious one, but was capable of giving most satisfactory results in cases where failure or imperfect result was otherwise inevitable.

It was manifest that in a relaxed capsule much depended on the after treatment. If the capsule was loose, the head would drop out if not held in place until the tissues had become reformed, so that they held the head firmly. A certain number of relapses were due to this. From the experience at the Boston Children's Hospital it appeared that the position of the limb after reduction and the after treatment depended largely upon the anatomical condition of the joint and upon whether there was a strong projecting acetabular lip. Within this was a zona orbicularis, and precise rules could not be laid down further than that the head should be placed well in the socket and kept there until it was firm in its improved position, and not kept long enough in a distorted position for the tissues to become too stiff or nonelastic. If the head was not properly reduced, it was inadvisable, in the hope of benefit from delay, to postpone attempts at other measures of relief, i. e., incision or a repeated manipulation.

The Open Treatment of Fractures.—Dr. EDWARD MARTIN, of Philadelphia, said that the wounds necessitated by the open treatment of fracture were more prone to suppurate than those made in other operations. This was partly because foreign bodies, often of considerable size, were buried in the wound, but mainly because, as a result of prolonged manipulation, rough handling, and the use of tools ill adapted to the purpose, there was left at the end of the operation a large amount of tissue so hopelessly devitalized that an abundant culture material was provided for even the slight

infection which inevitably took place during the course of the most carefully conducted operation.

Of the many ingenious devices employed for permanently fixing broken bone ends in their proper relation to each other, chromicized catgut, wire, screws, and silver plates were the most serviceable. If the surgeon could be assured of a perfectly sterile No. 3 catgut, so largely deprived of chromic acid as not to prove irritating to the tissues, this would be the material of choice in all cases where suture or encircling ligature was applicable.

Screws were extremely serviceable in that they represented foreign bodies of moderate size, were readily applied, and would often hold the bones in perfect apposition. They were especially applicable to the repair of oblique fractures of long bones. In fractures of the extremities of these bones the cancellous tissue gave a grip so feeble as to make their use of little service unless they were driven through and through. The proper application of a screw implied the selection of an almost cylindrical instrument with a deep thread cut clear to the head, and of such length as to pass completely through the bone at right angles to the line of fracture, but not beyond. Screws selected from the carpenter's tool box and the majority of those sold by surgical instrument makers were ill adapted to the purposes of bone surgery, since the thread was lacking where it was most useful and the pronounced conical shape greatly and uselessly increased the difficulty of driving the screw home. The easy application of the screw was dependent on the proper selection of a drill and the use of a clamp so devised that the bones, having been placed in accurate apposition, were immovably held while the drill was being used and the screws were being driven home. The drill should be of such size that it bored a hole through both fragments the full length of the screw and of a diameter slightly greater than its core. When but one of the two fragments was adequately drilled, as the screw was driven in it pushed the bones apart in place of bringing them together. The same result followed after having used the drill to a proper depth when the relation of the fragments to each other was changed; this frequently happened when the bones were loosely held in the bottom of the wound by the fingers of an assistant. This should be obviated by the use of bone clamps, which should be powerful enough to hold the largest bone in their grasp. Those he exhibited served the purpose well, as did the forceps devised by Arbuthnot Lane. The drilling should be done either by an electric or foot engine. The use of any other instrument not only was awkward and tedious, but exposed the patient to the danger of serious trauma. When wire or gut was to be passed through drill holes, the instrument should be provided with an eye near its cutting end, through which, when it had been driven completely through the bone, could be passed a guiding thread. McCurdy accomplished the same purpose by a notch placed just above the end of the instrument.

The silver plate found its most useful application in transverse fractures. Its proper fitting was made easy by the use of grasping instruments which not only held the two bones in accurate apposition one with the other, but also secured the plate firmly in place while the holes were being bored and the screws applied. The starting of the screws in the drill holes, particularly in the treatment of broken small bones, such as the ulna, clavicle, or fibula, or when the fragments to be held in apposition lay at the bottom of a deep wound, was greatly facilitated by a screw driver which firmly held the screw in a jaw devised for the purpose until it was fixed in its drill hole. Such an instrument he exhibited.

The open treatment of simple fracture should not be regarded as an emergency operation, and, considering the fact that nine out of every ten adults who sustained a fracture of the shaft of the femur exhibited as a result of conservative treatment permanent deformity and crippling, it would seem desirable to practise a formal operation more frequently than was now done.

Some Experiences in Thyreoidectomy, Partial and Complete.—Dr. Francis J. Shepherd, of Montreal, said his first operation was in 1883. In the first twenty-five cases he employed the method of Socin, viz., enucleation, but, meeting with two severe cases of secondary hæmorrhage, he gave up this method in the larger tumors for excision.

In speaking of the relation of the recurrent laryngeal nerve to this operation, he stated that only once in about 100 operations had he wounded the nerve. He mentioned that paralysis of one nerve due to pressure of the tumor was quite common, and in his experience it was on the side opposite to that of the largest development of the tumor.

He dwelt on the importance of having the larynx examined before an operation, for if one cord was found paralyzed the operator would necessarily be more careful of the other. The amount of hæmorrhage during the operation might be considerable, and it was waste of time to try to secure the bleeding points, for the bleeding veins were very friable. In cases of free bleeding he rapidly turned out the whole tumor and secured the superior and inferior thyreoid arteries. He had met with several cases of anomalous gland, where the upper cornua almost met behind, surrounding the trachea and œsophagus, and one case where the gland grew between the trachea and œsophagus.

The indications for operation in simple goître the operator considered to be as follows: 1. Progressively increasing size of the tumor. 2. Rapid growth, with dyspnœa. 3. Narrowing of the trachea. 4. Difficulty in swallowing. 5. Alteration of the voice. 6. Tachycardia and increasing nervousness. 7. Inconvenience and deformity due to the size of the tumor.

As regarded anæsthesia, he always used general anæsthesia. He began with chloroform, then took up ether, and now used equal parts of ether and chloroform. So far, he had had no death and no alarming symptoms. He thought the dangers from general anæsthesia had been much exaggerated, and that in a few years more thyreoidectomies would be performed under general anæsthesia than at present.

He had operated in seven malignant cases, with one permanent recovery, and agreed with Bloodgood that where carcinoma infiltrated no cure followed extirpation. He had had no deaths in simple goîtres, though he had had two following operation in exophthalmic goître. In operating, Dr. Shepherd preferred the straight incision internal to the sternomastoid, and he tied the superior thyreoid before turning out the gland; then the inferior thyreoid and the recurrent nerve were looked for and identified. After the operation he used a drainage tube for twenty-four hours, and sometimes, if there had been much oozing, he packed the wound with iodoform gauze. High temperature occurred after the operation in sixty to eighty per cent. He had seen only one case of myxœdema following extirpation of the gland, and this was in a case of malignant disease. The dangers of the operation were stated to be shock, hæmorrhage, injury to the recurrent nerve, infection, pneumonia, heart failure, etc. In only one case had tracheotomy had to be performed. As he intended reading another paper on the surgical treatment of exophthalmic goître, this subject would not be considered.

(*To be concluded.*)

Book Notices.

Vital Questions. By HENRY DWIGHT CHAPIN, M. D. New York: Thomas Y. Crowell & Co., 1905. Pp. 189.

In an attractive way the author has undertaken a thoughtful and judicial consideration of some of the problems of society. The question of opportunity is considered in an essay on inequality, and the author hopes that more equable health will equalize opportunity. The question of survival of the unfit is solved by prevention and permanent isolation. Poverty is discussed as a question of subsistence. The child, health, education, success, happiness, religion, and death are the topics of other essays, and the volume is well worth perusal.

Prontuario di posologia dei rimedi piu usati nella terapia infantile. Dott. ANTENORE CONELLI. Milan: Ulrico Hoepli, 1906. 12mo, pp. 186.

This is a dose book covering the most important remedies employed in pædiatric practice. It fills a want frequently felt by physicians who have a great deal to do with children. After a brief introduction dealing with general principles, the remedies are considered in alphabetical order. Under each are given the synonyms, properties, therapeutic action, incompatibilities, daily doses for different ages, and modes of administration. In some instances antidotes and other matters of interest are noted in connection with a remedy. The daily average doses under one year, from one to three years, from three to five, from five to ten, and from ten to fifteen years, are given separately for each remedy. This arrangement is very practical and makes the book a handy one for reference.

Principia Therapeutica. By HARRINGTON SAINSBURY, M. D., F. R. C. P., Fellow of the Physiological Society, Physician to the Royal Free Hospital, etc. London: Methuen & Co., 1906. Pp. xi-244. (Price, 7s. 6d.)

This is a series of essays of great merit. They are, indeed, gems. The therapeutical thread on which they are strung is not so thick as a ship's cable, but it will do. The stately quaintness of diction assumed fits the scholarly matter of the essays and seems to us particularly attractive, though the occasional cropping out of some prevalent monstrosities of expression mars it, as when the author says: "The case which died so unaccountably." The book is as far removed as possible from the *vade mecum,* and probably it will not be rated high by those who set small store by books that are not an instant guide as to practical points. Nevertheless, it ought to be read by such men, for it might do them much needed good. In our opinion, it deserves to rank with the best writings of Dr. William Osler.

A Practical Treatise on Fractures and Dislocations. By LEWIS A. STIMSON, B. A., M. D. (Yalen.), Professor of Surgery in Cornell University Medical College, New York; Surgeon to the New York and Hudson Street Hospitals, etc. Fourth Edition, Revised and Enlarged, with Three Hundred and Thirty-one Illustrations and Forty-six Plates in Monotint. New York: Lea Brothers & Co. Pp. xxii-844.

In the five years that have passed since the publication of the third edition of this work the x ray has added much that is interesting and something that is practical to our knowledge of forms of fracture in or near joints. The application of that method of examination is so general that more accurate diagnoses are made, and a large amount of material has been added to the literature of the rarer forms of injury. The author has availed himself of this to give a systematic description of these unusual fractures and dislocations, and he has added to the sections on fractures of the lower end of the humerus in the young and on the operative reduction of old dislocations. A number of x ray illustrations have been added, and new illustrations have been substituted for those in the former edition.

The Practice of Pædiatrics. In Original Contributions by American and English Authors. Edited by WALTER LESTER CARR, A. M., M. D., Consulting Physician to the French Hospital, New York, etc. Illustrated with 199 Engravings and 32 Plates. Philadelphia: Lea Brothers & Co., 1906.

This excellent work is a volume of the *Practitioner's Library,* and its character is correctly indicated by its title page, where it is frankly stated to be a work for practitioners of medicine. It makes no attempt to fill the office of textbook for undergraduates. It is essentially a work on the diseases of children, the line between pædiatrics and general medicine being carefully drawn. Reading of the book soon makes it evident that a special effort has been made in two directions—to present clear and correct clinical pictures and to outline the best modern methods of treatment. The pages devoted to treatment are in most sections very satisfactory, and adequate attention is given to general measures of management and diet in disease. Rather more than the usual space is given to prophylaxis and the measures designed to prevent the spread of the communicable diseases.

The most noteworthy feature of the book is the attention given to disease in the clinical manifestations. Sufficient space is devoted to ætiology and pathology to furnish a comprehensive knowledge of each disease, but one finds no extended discussion of debated questions or unsettled points. The clinical pictures are unusually good. This feature is so noticeable in most sections that it must have been impressed very forcibly upon the writers by the editor. In the consideration of many diseases a description of "clinical types" is given. This, in addition to the usual section on symptomatology, presents an exceedingly clean cut and comprehensive aspect of a disease. It is stated that each author was allowed to give his own observations of disease and to present the treatment that in his experience had resulted in the greatest success. This has certainly resulted in a very practical book, for a judicious infusion of the personal element adds greatly to the value of medical writing.

Lack of unity, the overrunning of space by some authors, and a number of weak chapters are common faults of works of this character. In other words, the editorial control is hampered. In the present case very little criticism can be offered in this direction. The book is well balanced and very homogeneous, and shows extremely good editorial management and control. The various chapters all come well up to the standard in scientific and literary quality, and some are of a high order.

The work well covers the field of pædiatrics. Ample space has been given to infant feeding, to diseases of the alimentary tract, to disorders of nutrition, circulation, and respiration, and to the contagious diseases. It is impossible in this place to review the special work of the various authors. One naturally turns first to the section on infant feeding as, perhaps, the most important and difficult in a work on pædiatrics. He is not disappointed, for he finds all the information the practitioner needs and little or nothing that he does not need. The section is definite and clear and in full accord with the most recent and rational teaching. The practitioner can use it because he can understand it. It is practical. In fact, the book as a whole is practical, authoritative, and good.

Miscellany.

Chronic Appendicitis.—Dr. Oberndorfer has never observed a normal appendix after the age of forty. After this period there is a tendency to the formation of connective tissue in the submucosa, which afterwards extends to the mucosa. In one third of the cases obliteration occurs, owing to the destruction of the mucosa and muscular coat, while in others this is prevented by the contained material—mucus, desquamated epithelium, and bacteria. Fœcal matter rarely enters the appendix, and the so called fœcal calculi consist of other substances. In his opinion these processes are of inflammatory origin and are due to the agency of bacteria or other toxines upon the mucous membrane. —*The International Journal of Surgery.*

Legal Control of Prostitution and the Spread of Venereal Diseases.—M. Muller publishes statistics bearing on the sanitary control of prostitution as to the garrison at Metz, *Münchener Medizinische Wochenschrift,* No. 42, 1905, which are of great public interest, and to which our sanitary advisers should pay particular attention. In the German army venereal diseases are most carefully and thoroughly looked after and cared for with minute detailed records of every case. The city of Metz is a garrison town with a garrison of 24,000 troops in a city of only 80,000 people. The present regulations as to prostitutes provide for the systematic microscopical examination of the secretions. The present proportion of gonorrhœa is now reduced to twelve per cent., since microscopical examination was introduced, which was twenty-five per cent. prior to its introduction. The proportion of syphilis has averaged about four per cent. for the last ten years at Metz. Should we not give more heed to the superior care taken by the German emperor of his army? We seem to have inherited a prejudice against the use of safeguards, which rests on no basis of reason at all in this respect, because we regard immorality an evil. We have adopted the heresy of believing it wrong to regulate the prostitutes and enforcing regulations to protect both themselves and their patrons, as so great an offense against public morals, that we leave the health of the masses of our people to the appalling effects of a disease we could easily minimize.—*The Medico-Legal Journal,* June, 1906.

Postoperative Comfort.—Le Boutillier (*Annals of Surgery,* July, 1906) thinks the ordinary pain and discomfort after operations can be and should be reduced. The items are relief of thirst and pain, procuring more rest, stimulating more freely, feeding more and earlier, and attention to the posture of the patient. For thirst an enema of hot saline solution should be given just after an operation, with whiskey added if necessary. This may be repeated every three hours or until the pulse is satisfactory. Fluid by mouth, of moderate temperature, may be given in five or six hours after the operation, and in considerable quantity. For stimulation, in addition to the enemata, inject hypodermically strychina $^1/_{50}$ grain every three hours, from twelve to thirty-six hours. For pain morphine may be given before the effect of the anæsthetic has passed off, and it may be given even in peritonitis. Laxatives need not be given as routine treatment, but only when indicated. The rectal tube is advised. The position of the patient may be frequently changed when mechanical conditions permit. No single position should be insisted upon. Dressings should be removed painlessly or nearly so. If there is close adhesion to the tissues an anæsthetic should be given. Rest by sleep should be encouraged, with disturbance only at long intervals. Food, even solid food, should be given as soon as the stomach and intestines are ready for it.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending September 14, 1906:

Smallpox—United States.

Places.	Date.	Cases.	Deaths.
Louisiana—New Orleans	Aug. 26-Sept. 1	3	
North Dakota—State	July 1-31	8	

Smallpox—Insular.

Philippine Islands—Manila	July 21-28	1	

Smallpox—Foreign.

Argentina—Buenos Ayres	June 1-30		177
Brazil—Bahia	July 28-Aug. 11	6	2
Brazil—Pernambuco	July 15-31		4
Gibraltar	Aug. 19-26	1	
Italy—General	Aug. 8-16	3	
Panama—Colon	Aug. 19	3	
Turkey—Constantinople	Aug. 12-19		1

Yellow Fever—Foreign.

Cuba—Havana	Aug. 10	1	
Guatemala—Gualan		2	1

Cholera—Insular.

Philippine Islands—Manila	July 14-28	126	115
Philippine Islands—Provinces	July 14-28	968	704

Plague—Foreign.

Australia—Cairns	July 14-21	1	
Australia—Sydney	July 7-14	1	1
Brazil—Bahia	July 28-Aug. 4	1	1
Brazil—Rio de Janeiro	July 8-15	2	
Egypt—Alexandria	Aug. 10-14	3	2
Egypt—Port Said	Aug. 11	2	
Egypt—Suez	Aug. 11-16	3	2
Egypt—Garbieh Province	Aug. 13	1	1
India—General	July 14-21	959	796
Japan—Formosa	Aug. 1-10	3	6

Public Health and Marine Hospital Service:

List of Changes of Station and Duties of Commissioned and Noncommissioned Officers of the Public Health and Marine Hospital Service, for the seven days ending September 12, 1906:

EARLE, B. H., Passed Assistant Surgeon. Relieved from duty at Columbia River Quarantine Station and directed to proceed to Charleston, S. C., and assume command of the Service.

FOGARTY, J. N., Acting Assistant Surgeon. Granted leave of absence for seven days.

GEDDINGS, H. D., Assistant Surgeon General. Granted leave of absence from September 15 to 30, 1906, both days inclusive.

GODFREY, JOHN, Surgeon. Directed to report to chairman of board of medical officers, Washington, D. C., September 13, 1906, for physical examination.

JACKSON, J. M., JR., Acting Assistant Surgeon. Granted leave of absence for ten days, from August 14, 1906.

JACKSON, J. M., JR., Acting Assistant Surgeon. Granted leave of absence for four days, from September 2, 1906.

KIMMET, W. A., Acting Assistant Surgeon. Granted leave of absence for thirty days, from September 10, 1906.

MCCONNELL, A. P., Acting Assistant Surgeon. Granted four days' leave of absence, from September 10, 1906.

SAWTELLE, H. W., Surgeon. Placed on "waiting orders," to date from September 5, 1906.

SMITH, F. C., Assistant Surgeon. Granted leave of absence for two days, from September 4, 1906, under Paragraph 191 of the Regulations.

WERTENBAKER, C. P., Surgeon. Granted leave of absence for seven days, from September 15, 1906.

WICKES, H. W., Passed Assistant Surgeon. Granted two days' leave of absence, from September 11, 1906.

Appointments.

Dr. William W. Miller, of Tennessee, commissioned (recess) as Assistant Surgeon, Public Health and Marine Hospital Service, September 4, 1906.

Dr. Robert A. C. Wallenberg, of Michigan, commissioned (recess) as Assistant Surgeon, Public Health and Marine Hospital Service, September 4, 1906.

Board Convened.

A board of officers was convened to meet at the Bureau, Washington, D. C., September 13, 1906. to determine whether or not the physical condition of Surgeon John Godfrey is such as to entitle him to "waiting orders." Detail for the board: Assistant Surgeon General H. D. Geddings, chairman; Assistant Surgeon General J. M. Eager; Assistant Surgeon General J. W. Kerr, Recorder.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, for the week ending September 15, 1906:

ASHFORD, B. K., Captain and Assistant Surgeon. Ordered to accompany Second Battalion, Corps of Engineers, from Camp of Instruction, Mt. Gretna, Pa., to Washington Barracks, D. C.

BRECHEMIN, LOUIS, JR., First Lieutenant and Assistant Surgeon. Ordered to proceed from Camp of Instruction, American Lake, Wash., to Seattle, Wash., for duty on the transport *Buford, en route* to Honolulu, H. T.

CRABTREE, GEORGE H., Captain and Assistant Surgeon. Advanced to the rank of captain, from September 5, 1906

LEWIS, WILLIAM F., Captain and Assistant Surgeon. Ordered to proceed from Chicago, Ill., to Fort Sheridan, Ill., for temporary duty.

LYSTER, THEODORE C., Captain and Assistant Surgeon. Left Ancon, Canal Zone, Isthmus of Panama, *en route* to the United States, on leave of absence.

MURRAY, ALEXANDER, First Lieutenant and Assistant Surgeon. Granted ten days' leave of absence.

NOBLE, R. E., First Lieutenant and Assistant Surgeon. Leave of absence further extended twenty-one days.

RAGAN, CHARLES, First Lieutenant and Assistant Surgeon. Leave of absence granted in S. O. 65, September 3, 1906, Army and Navy General Hospital, Hot Springs, Ark., is extended five days.

TORNEY, GEORGE H., Lieutenant Colonel and Deputy Surgeon General. Having completed the duty for which he was ordered to Washington, D. C., will return to his station.

WALES, PHILIP G., Major and Surgeon. Upon the expiration of his present leave of absence, ordered to Fort Wayne, Mich., for duty.

WOODALL, WILLIAM P., First Lieutenant and Assistant Surgeon. Granted ten days' leave of absence.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending September 15, 1906:

BELL, W. H., Surgeon. Detached from the *Nevada* and ordered home to await orders.

FARWELL, W. G., Assistant Surgeon. Detached from the *Worden* and ordered to the *Connecticut*.

GEIGER, A. J., Passed Assistant Surgeon. Ordered to the Naval Hospital, Mare Island, Cal.

HIBBOTT, C. T., Medical Inspector. Ordered to the U. S. R. S. *Franklin*.

HUFF, E. P., Acting Assistant Surgeon. Ordered to the Naval Hospital, New York, N. Y.

IDEN, J. H., Passed Assistant Surgeon. Detached from the *Florida* and ordered home to await orders.

LEE, A. E., Assistant Surgeon. Detached from the Naval Hospital, Mare Island, Cal., and ordered to the Medical School, Washington, D. C.

LONGABAUGH, A. R. I., Acting Asistant Surgeon. Ordered to the Naval Medical School, Washington, D. C.

LUMSDEN, G. F., Surgeon. Detached from the *Minneapolis*, when out of commission, and ordered home to await orders.

MEARS, J. B., Assistant Surgeon. Detached from the *Minneapolis* and ordered to the *Worden*.

MINTER, J. M., Assistant Surgeon. Ordered to the Naval Hospital, Norfolk, Va.

MOORE, J. M., Surgeon. Detached from the *Puritan*, when out of commission, and ordered to the *Franklin*, Navy Yard, Norfolk, Va.

MUNGER, C. B., Assistant Surgeon. Ordered to the Naval Station, Guam, P. I.

PAYNE, J. H., JR., Passed Assistant Surgeon. Detached from the *Arkansas* and ordered home to await orders.

PERCY, H. T., Surgeon. Detached from the Naval Hospital, Yokohama, Japan, and ordered home to await orders.

SCHALLER, W. F., Assistant Surgeon. Ordered to the Naval Medical School, Washington, D. C.

STEELE, J. M., Medical Inspector. Ordered to the Naval Recruiting Office, Cleveland, Ohio.

WENTWORTH, A. R., Surgeon. Ordered to the U. S. S. *Louisiana*.

Births, Marriages and Deaths.

Born.

MULLAN.—In Brooklyn, N. Y., on Friday, August 24th, to Dr. Eugene H. Mullan, U. S. Marine Hospital Service, and Mrs. Mullan, a daughter.

PURNELL.—In Berlin, Maryland, on Monday, September 3rd, to Dr. H. S. Purnell, U. S. Army, and Mrs. Purnell, a son.

Married.

BESHOAR—SHANLEY.—In Trinidad, Colorado, on Thursday, September 6th, Dr. Ben Beshoar and Miss Fay Shanley.

CROWELL—CHURCH.—In Syracuse, N. Y., on Thursday, September 6th, Dr. Lewis C. Crowell and Mrs. Jennie B. Church.

EGERT—CLARKE.—In Utica, N. Y., on Thursday, September 6th, Dr. Philip Merriman Egert and Miss Allie Adelia Clarke.

FITZPATRICK—MAGUIRE.—In Boston, on Wednesday, September 5th, Dr. John J. Fitzpatrick, of Charleston, and Miss Annie Maguire.

JESSUP—LUTZE.—In Trenton, N. J., on Saturday, September 8th, Dr. Alexander Jessup and Miss May Lutze.

MCCOMBS—PRATT.—In Carlisle, Pennsylvania, on Saturday, September 8th, Dr. Robert S. McCombs and Miss Richenda Pratt.

WOODBURY—FREMONT.—In Manila, Philippine Islands, on Wednesday, September 12th, Dr. Frank T. Woodbury, U. S. Army, and Mrs. Caroline Townsend Fremont.

Died.

DUNBAR.—In Swanton, Vermont, on Thursday, September 6th, Dr. Frank H. Dunbar, aged thirty-seven years

EVANS.—In Belair, Maryland, on Saturday, September 1st, Dr. W. Rowland Evans.

FERGUSON.—In Troy, N. Y., on Saturday, September 8th, Dr. Everard D. Ferguson, aged sixty-three years.

FLECKENSTINE.—In Louisville, on Thursday, September 6th, Dr. Mary E. Fleckenstine.

HAMILTON.—In Philadelphia, on Wednesday, September 5th, Dr. William C. Hamilton, aged sixty-three years.

PAGE.—In Oswego, N. Y., on Monday, September 10th, Dr. M. E. Page, aged forty years.

PERKINS.—In Ream's Station, Virginia, on Tuesday, September 4th, Dr. E. W. Perkins, aged sixty-eight years.

REAM.—In Yreka, California, on Saturday, September 1st, Dr. Daniel Ream, aged eighty-six years.

SHELDON.—In Syracuse, N. Y., on Friday, September 7th, Dr. Jay W. Sheldon, aged sixty-nine years.

VARICK.—In Morsemere, N. J., on Saturday, September 8th, Dr. William Wilson Varick, aged fifty-nine years.

WALRADT.—In Albany, N. Y., on Thursday, September 6th, Dr. W. D. Walradt, of Castleton.

WARD.—In Jamestown, N. Y., on Sunday, September 9th, Dr. A. F. Ward, aged seventy years.

YALE.—In Quissett, Massachusetts, on Wednesday, September 12th, Dr. LeRoy Milton Yale, aged sixty-five years.

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Original Communications.

A CASE OF MYOCLONUS EPILEPSY, WITH AUTOPSY.

BY CHARLES W. BURR, M. D.,

Philadelphia,

Professor of Mental Diseases in the University of Pennsylvania.

I presented the patient, whose case I now report in full, at the meeting of the Philadelphia Neurological Society, January 24th, 1904. At that time he showed the following symptoms: Major and minor epilepsy; occasional attacks of delirium occurring only after a convulsion; paroxysmal, general, clonic muscular spasm, sometimes lasting for days, and some mental deficiency not profound enough to be called imbecility. The history of the case is as follows:

I first saw the boy in April, 1896. He was then nine years old. His mother stated that he was healthy until he was sixteen months old, at which time he had an epileptic convulsion. Several months later he had a second. He then was entirely well for several years after which the convulsions recurred. He has never been free from them since. They do not recur with any regularity. He may have several in one day, or may go several weeks and indeed months without any. The mother in describing them gave the typical symptoms of major epilepsy. She also said that for a long time he had been constantly "making faces," and had had attacks in which for hours at a time his body would shake and jerk, and he would be unable to walk on account of the violence of the movements. In these attacks there was no loss of consciousness, stertorous breathing, biting of the tongue, or frothing at the mouth. They did not resemble in any way the epileptic convulsions. For several years she had also noticed that he would at times become confused for a moment and stop talking or drop anything he had in his hands but not fall down.

As he walked into my office in 1896, I thought he was suffering from habit spasm. He grimaced and shrugged the shoulders constantly. While I talked to him he had several attacks of minor epilepsy, momentary unconsciousness with slight general convulsive movements. Lateral nystagmus was present. Examination revealed nothing more. He was a bright, intelligent boy. He had no palsy, was not ataxic and the reflexes were normal. From the history and my observation I diagnosticated epilepsy.

I did not see him again until April, 1904, eight years after my first examination, when he was brought to the Philadelphia General Hospital. One day on going into the ward I saw a youth in bed throwing himself violently about, shouting and crying incoherently. When I examined him I found the following condition: He was confused and excited. He would begin to answer a question properly, but in a moment or two would wander and talk incoherently. He had no idea that he was in a hospital, but thought he was at home. He said that he had just come in from a walk whereas he had been in bed several days. He also said that the evening before while out walking a physician had seized him, taken him to a building and after cutting his chest, back, and hands had sewed the cuts up again. He pointed to the imaginary wounds. He maintained that the milk given to him was poisoned. His flight of ideas was very rapid and incoherent. A sound, a word, a gesture of a bystander, the passing of a nurse, anything would distract his attention from what he was speaking of, and turn his thoughts into a new channel. Along with these mental symptoms there were violent, general, choreiform movements. I thought, not recollecting that I had seen him eight years before, that he was suffering from chorea insaniens. In three days his condition had completely changed. The choreiform movements had ceased. He was entirely conscious and mentally clear. The only sign of physical disease present was lateral nystagmus in both eyes when he looked to either side.

His mother gave the following further statement about his previous history and present illness. His parents are living and well. A sister and brother are in good health. Another sister has epilepsy. A brother and sister died in infancy. His birth was difficult, and he weighed twenty pounds (?). Instruments were not used. He has had peculiar twitchings of the eyes since birth, and the hands began to twitch when he commenced to go to school. He was bright when at school, but stopped at the age of thirteen by the advice of a physician on account of the epilepsy. His mother can always tell when an epileptic convulsion is coming on, because for several days before he jerks and shakes all over, and becomes mentally dull or excited. Immediately before an epileptic convulsion he screams, arms and legs jerk, he froths at the mouth, bites his tongue, the head is turned to one side and the eyes roll. He is unconscious during the attack, and often empties the bladder. The paroxysm lasts two or three minutes and is followed by deep sleep for several hours. Many of the convulsions occur at night. Two weeks before he was brought to the hospital he had an epileptic convulsion, after which he became very dull and had such violent jerking movements (myoclonus) of the arms and legs for several days that he could not walk or feed himself. Then the epileptic convulsions recurred and he had several daily. The day before his removal to the hospital he became delirious. He thought he was to be operated upon and arrested. He was very noisy. Before several of the fits he spoke of seeing colored balls.

Examination, three days after admission: He is a pale, emaciated youth. He walks well and uses his hands without difficulty. The pupils are normal in size, and react well to light and with accommodation. There is lateral nystagmus on looking to either side. (This symptom has been present at every examination.) The

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knee jerk is normal. The chin, biceps tendon, and triceps jerks are present. There is no ankle or patellar clonus. The plantar jerk is normal. Tactile sensibility is normal on the arms, legs, and face. The posterior part of the skull is asymmetrical, the right side of the occiput protruding more than the left. There are scars on either side of the tongue.

Dr. Charles A. Oliver examined his eyes and reported. "There is hypermetropia with astigmatism, and improper muscle equilibrium. The eye grounds are healthy in every detail. Vision is brought to normal with glasses. Accommodative acts are correct for character and degree of refractive error. The left pupil is larger. The irides are mobile to light stimulus and act promptly to efforts for accommodation and convergence. Exterior ocular motion is good in all directions. The fields of vision for white, red, and green are somewhat diminished, especially in the left eye."

His condition, both mentally and physically, varied very much from time to time while in the hospital. He had about a dozen convulsions which were surely epileptic. Attacks of minor epilepsy occurred frequently. Sometimes he was entirely free for several days from any myoclonic spasm, but as a rule there was more or less twitching of the face, resembling habit spasm. Sometimes when the face was quiet there were slight occasional, irregular jerkings in, say, a leg or an arm. These were especially prone to occur if he attempted to do anything. For the greater part of the time he had general myoclonic spasms, involving the entire voluntary muscular system.. The severity of the movements varied greatly. At the worst he could not walk or even stand, and would toss violently about the bed for many hours. He could not feed himself, and it was not easy for anyone else to feed him, his head jerked so violently. When he attempted to talk he stuttered and spluttered badly. The movements were sometimes increased by attempts at voluntary movement, sometimes momentarily decreased and then increased. Several times while walking he was thrown violently to the ground by a sudden increase in the severity of the movements, bruising himself badly about the head. The myoclonus became general and severe, either suddenly or slowly. Even when he was relatively quiet voluntary movements were jerky and awkward. Thus, in order to pick up an object he had to suddenly pounce upon it or he would miss it, or he was compelled to support the arm upon the table, and then stretch forth the hand. The movements were a true spasmodic jerking and not an ataxia or athetosis. Not only were the large muscles of the shoulders, trunk, and hips affected, but also the smaller muscles of the face, forearms and calves. There were no fibrillary twitchings. Frequently after the movements had continued several days they would cease, leaving him too weak to walk. Even when he was relatively quiet his gait was lurching. At first I thought the myoclonus always followed a fit, but I was mistaken. It immediately preceded or followed a fit or occurred at any time between. An epileptic fit might occur also during the continuance of the myoclonus. All movements ceased during sleep.

It is difficult to accurately describe his mental state. He was very childish and emotional for his age, and was not all like the bright, intelligent boy whom I had seen eight years before. At times, especially for several hours after an epileptic fit, he was emotionally depressed and slow at comprehending questions. At other times he was peevish and fretful. Briefly his mental state was one of epileptic weakmindedness. His general condition barring his underweight was good. The heart and lungs were normal, and he had no indications of disease of the kidneys.

I have never before seen any one who presented exactly the symptoms this boy showed, and I have had not a little difficulty in reaching a diagnosis. To dismiss the matter by calling the disease hysteria is easy, but I am sure, incorrect. Hysteria does not begin at sixteen months and continue for many years thereafter. It is true that there was contraction of the visual fields, but there was no reversal. He never had hysterical palsy or anæsthesia. Nystagmus existed for many years. That he had epilepsy, both major and minor, is certain. Notwithstanding the dramatic appearance of the attacks of delirium they were surely a post epileptic phenomenon and not hysterical. On the other hand the boy was emotional and hysterical in disposition. His entire mental and emotional nature had changed since I first knew him. This was partly no doubt the result of puberty and adolescence, but it was in a large degree the effect of the disease. In other words, his emotional instability was the result and not the cause of his illness.

One of the physicians who saw the boy suggested electric chorea (Dubini's disease) in explanation of the myoclonus, but the picture of that disease is entirely different. It has an acute onset, with pain in the head, neck, or spine, followed by short, rapid, muscular spasms, similar to those occurring when electricity is applied to the muscles. They begin in one arm or the face, and extend later to the leg of the same side, and finally become general. Unilateral, and it may be general, epileptiform convulsions occur. Later palsy comes on, first appearing in the part in which spasm first appeared. Still later muscular wasting and changes in electrical excitability occur. The skin is hypersensitive. The temperature may be increased and pain is present. Death results in days or months from heart failure or coma. Few patients recover. Hysteria also will scarcely explain the myoclonus. It is of course true that many types of spasmodic muscular disturbance occur in and are characteristic of hysteria, but they do not begin in childhood and continue for years. Again, they are always associated with other symptoms of hysteria. The fact that a sister also has epilepsy is of importance in reaching a decision as to the nature of the disease. It is doubtful if the electric chorea of Henoch, which was also thought of, is a distinct disease. It seems to include on the one hand habit spasm and on the other the myoclonus described by Friedreich. We can exclude postparalytic epilepsy and so called chorea resulting from injury at birth with ease. Taking all things into consideration, the case is best classified as one of myoclonus epilepsy, as described originally by Unverricht and very recently by Clark and Prout in the *American Journal of Insanity* for 1902.

Some months after I showed the patient to the society he died of acute pulmonary tuberculosis, and examination by Dr. McCarthy and myself revealed the following: The posterior fossa of the skull was markedly asymmetrical, the right side being much smaller and much more shallow than the left. The posterior lacerated foramen was absent, the lateral sinus terminating in an abnormally large mastoid foramen. The right cerebellar hemisphere was distinctly smaller than the left. The pia arachnoid over the surface of the cerebellum was thickened and white in color over the right lobe. This was most marked along the anterior margin and the superior surface. The pia arachnoid showed some thickening with whitish color over the right prefrontal lobe. The cerebrum was of normal

size and on section showed no abnormality to the naked eye.

The spinal cord, stained by the hæmatoxylin eosin, Van Gieson, iron hæmatoxylin, Weigert's elastic, and Nissl stains, proved to be entirely normal. Examination of sections from the right prefrontal lobe, showed proliferation of the connective tissue cells of the pia arachnoid. The cortex beneath showed marked congestion with perivascular areas wider than normal. There was no cortical sclerosis. The motor area stained normally with the Nissl, Van Gieson, and sheath stains. There were very few, and in some areas no tangential fibres. Sections from the occipital region on both sides were normal. Sections from the cerebellum were stained by the hæmatoxylin eosin, Van Giesen hæmatoxylin, Weigert's elastic, and Nissl stains. In the left lobe the pia arachnoid was markedly thickened and composed mainly of dense fibrous tissue with comparatively few cellular elements. In the cortex there was perivascular sclerosis. An area staining red by the Van Giesen method surrounded the blood-vessels in the granular layer of the cortex. The cells of Purkinje, immediately beneath the surface, were comparatively few in number and those that remained were shrunken and stained deeply by the Van Giesen, hæmatoxylin eosin, and Nissl stains. The entire area of tissue in which the cells of Purkinje lay had undergone a refractive change. The Purkinje cells of the deeper layers showed a perfectly normal structure. By the Nissl method, the cells in the superficial recticular areas contained a few dendrites. Very few of the cells contained nuclei, and in such cells no chromophilic elements could be seen. The same condition was present in a less degree, in the right lobe. Microscopical examination of the basal ganglia (optic thalamus and caudate nucleus) showed nothing abnormal. There were no evidences of any tuberculous process in the nervous system.

To sum up the pathological conditions, the most marked lesions were smallness of the right cerebellar hemisphere, decrease in the number of the cells of Purkinje in both lobes, and thickening of the pia arachnoid. I believe these changes, together with the obliteration of the right posterior lacerated foramen, to have been caused by disease during intrauterine life or soon after birth. The lesions found do not explain all the symptoms, and in fact no localized disease could produce all the symptoms the boy suffered. It is probable that some of the parts of the brain which seemed histologically normal were really poorly developed and unfit to properly carry on function. I am inclined to believe that the cerebellar changes instead of being the sole cause of the boy's condition were simply a part of a general process resulting in the production of a poorly developed brain, the abnormity in the cerebellum being sufficient to cause visible lesion, while in other parts it was not. The absence of any morbid changes in the cells of the motor cortex and in the spinal cord is interesting. The decrease in the tangential fibres may have had some influence in the production of the muscular symptoms.

1327 Spruce Street.

OBSERVATIONS IN THE TROPICS.

By Louis L. Seaman, M. D.,
New York.

(*Written on board steamer, Mozambique Channel.*)

Africa, the tropic home of so many microorganisms deadly to mankind, is to the American physician a veritable *terra incognita,* except as reported by European investigators. It is eight years since any United States man-of-war has even visited Zanzibar, the most important port on the East African coast. So at Lisbon, when Dr. Nicholas Senn suggested an extension of our voyage that should circumnavigate the dark continent and penetrate its interior as far as possible in the limited time at our disposal, I accepted with avidity. It offered an admirable opportunity for a personal study of the diseases found in the hospitals of the countries visited, and to learn what was being done by the corps of medical officers and scientists Germany has sent here to battle with the pests which have proved so fatal to foreigners as well as to natives. As many of these enemies of humanity are the same as infest the Philippines and our other tropical possessions a cursory account of some of the main features of our visit may prove of interest to the readers of the *Journal.*

Our first port, after leaving the Red Sea and Aden, was the old Portuguese city of Mombasa, about three degrees south of the equator. In the fifteenth century, when discovered by Vasco da Gama on his famous voyage to the East Indies and shortly after the discovery of America by Columbus, it was inhabited by Arabs, Hindus, and native Somali and Swahili tribes, all of whom are still found in its population of about 20,000. There are also about one hundred Europeans. The Portuguese promptly captured the city and erected a formidable fortress, on the magnificent coral bluff that faces the sea. It still stands as a monument of their prowess and engineering skill, and is used by the British garrison as a barracks, as well as the principal military prison of the protectorate. During its historic career it once withstood a siege of three years, and when its garrison, supposed by its besiegers to number several hundred, finally capitulated, and its gates were opened, only five soldiers were found alive within. The others had succumbed, to what is now believed, was bubonic plague. The flag of Zanzibar still floats from its citadel, but the present sultan is only a weak tool of Great Britain, tolerated merely as a matter of policy, and the day is not distant when the union jack will replace it in the breeze. In one corner of the fortress is an ancient grape vine still in bearing, and said, by the commanding officer, to be over three hundred years old—older even than the celebrated one in Hampton Court, England.

The city has two hospitals, one, military, under the charge of Dr. Goldie, with accommodations for half a dozen officers, or white citizens who are admitted as pay patients. At the time of our visit there were but two, one suffering with pneumonia, the other with malaria. The other hospital scarcely deserved such an appellation. It consisted of a series of low, extremely primitive barracks or sheds, containing forty beds (wooden cots with rough rope netting), and is under the supervision of Dr. Leys. Its location, however, in a beautiful grove of mangos, left little to be desired. These trees grow here to perfection, and to enormous proportions, one which we measured, in the native town, having a spread of branches over one hundred and thirty feet. Nearly all the characteristic diseases of the tropics are at times admitted to this hospital, chronic malaria being the most common. A few cases of leprosy are found, but elephantiasis is comparatively rare. Ulcers of the legs and feet are frequent, and tuberculosis of the lungs, and all forms of venereal diseases have increased since the advent of the whites, the latter to a distressing extent. Few sec-

ondary evidences of syphilis are seen, however, the native seemingly to be almost immune to the constitutional affections. Occasional cases of beriberi occur—one was present—but carcinoma and appendicitis are unheard of in the land. Keloid is frequent, due to infected scars or infected insects, but typhoid fever is unknown, probably because of the universal use of cistern water which is carefully protected. Relapsing fever, due to the bite of a tick that frequents the mud houses of the natives, is common, and black water fever, an aggravated form of neglected malaria, is occasionally seen, its prognosis always being serious.

The most fatal disease of the protectorate is pneumonia. Ankylostomiasis is often met with, and its treatment with thymol has proved unsatisfactory, the remedy occasionally producing fatal collapse. The suggestion of a change to beta naphthol, as used with such gratifying results by the United States Puerto Rican Commission, was received with thanks and promises of a fair trial.

But the limited appropriation made by the home government for the maintenance of these institutions, only sixty dollars gold per month for both, including also a polyclinic where an average of fifty patients are treated daily by Dr. Leys or his assistant, is wholly inadequate, and constitutes a serious reflection on the governmental authorities.

Mombasa is destined to become a maritime port of great importance in view of its fine harbor and its connection by rail with Lake Victoria Nyanza, and the rich Uganda district, as well as serving as the gateway for the trade of the Congo and the Sudan. Nothing in the way of original investigation or preventive medicine is being done there, although the anopheles, the "jigger," the tick, and some varieties of the tsetse fly are found in abundance. The sleeping sickness has not been seen here, however, owing to the noninfection of the insect. Its ravages have thus far been chiefly confined to a belt of territory nearer Nyanza, where the fatality amongst the natives has been alarming (over 200,000 deaths have been reported), almost depopulating vast districts. Few four footed beasts can survive its infection. Horses, mules, cattle, antelope, zebra, and wild buffalo die in countless numbers. The donkey and the goat alone are immune. The zone of its depredations is rapidly increasing, and it is for that reason principally that the German government has sent Professor Koch here to study its habits and discover, if possible, some method for its extinction.

Our next port was Tanga, in German East Africa, a native city of the Swahili tribe, containing a mixed population of Hindus and Arabs, and about one hundred whites. It is a military post, where at present few others than German officers are found, who command the native troops, imported from New Guinea, the Sudan, and Somaliland, and a small number of Zulus and Swahilis. A railroad, one hundred miles of which are completed, extends toward the hinterland. Rubber, beeswax, mangrove bark, and a little cotton form the principal exports, but the commerce is small; less than formerly, owing to the insurrection of the natives, which has been in progress since last July, and which has only just been suppressed. The military hospital, erected and maintained by the imperial government, is a modern, up to date, imposing structure, constructed to meet tropical conditions, and commands a fine view of the ocean. Its capacious veranda has a breath of luxury and comfort. Dr. Ollwig, its chief officer, is an enthusiastic Africander, having spent twelve years here, with but two short vacations, and is regarded as the best authority on malarial diseases living. He is conducting elaborate bacteriological experiments and making special investigations in the prophylaxis of malaria. In the pavilions for native patients near by we saw many cases of keloid, ankylostoma, bilhartzia, malaria, and specific diseases, but no physician we have yet visited has ever seen a victim of carcinoma in Africa.

Dar es Salaum, however, boasts of the finest hospital in Africa, erected on the sea coast at a cost of over one hundred thousand dollars and maintained like the one at Tanga, by the German government. It is surrounded by a botanical garden of selected tropical plants and is under the direction of Dr. Exner, a surgeon of the imperial army, assisted by a competent staff and nurses, trained in Germany. The operating room is complete in all requirements for strict aseptic and antiseptic surgery, and is supplied with a liberal armamentarium. A room, specially devoted to microscopical examinations of blood, is the busiest spot in the institution, the actual work being largely performed by the staff of nurses, who have been specially trained for this work. Malaria in its great variety of forms is receiving the greatest attention, and much prophylactic work is being accomplished. The windows and doors of all malarial wards, or private rooms where it is treated, are carefully protected by fine aluminum wire double screen doors. Military officers and government officials are treated gratis; other Europeans are charged nominal prices. It has an admirably equipped bacteriological laboratory, and is the headquarters of Dr. Meixnor, staff surgeon of the imperial army, who controls the entire Department of Sanitation of the East African German Colony.

There is another hospital near the barracks of the native troops which is in marked contrast to the one just described, and where the natives are treated by Dr. Gross, also an army surgeon, and his assistants. About a hundred patients, men and women, are gathered here, in low, one story, stone barracks, where the strictest economy is practiced amid surroundings exceedingly primitive. No operating room or trained nurses are found here, although the type of cases are far more severe and the numbers greater than in the Military Hospital. Some were suffering from bullet and other wounds received in the war, one septic case requiring amputation below the knee, the result of an infected wound.

The lock system is in vogue here for prostitutes, fifteen of whom were found in one of the so called "wards," where they are kept under observation until free from infection, after which they are given a certificate to that effect and are allowed to renew their trade.

On May 25th we reached Zanzibar, a coral island of the Indian Ocean, now a protectorate of Great Britain, with a population of about 150,000, nearly half of whom are residents of the capitol. The island is perpetually clothed in tropical verdure, where the mango, the orange, cocoanut, banana and clove grow in splendid perfection. Ninety-five per

cent. of the world's crop of cloves is shipped from this port, and nearly all the tribes of East Africa, with the Goanese, Hindus, Arab, and Cinghalese, are represented in its people. As may naturally be expected in a tropic land of rich vegetation, abundant rains and an atmosphere surcharged with moisture, where the anopheles thrives in countless myriads, the prevailing disease is malaria; and few foreigners can resist its invasion for over a year, although it generally yields readily to quinine after five or six days. The remittent type is most frequent. Dr. Friedrickson, who is in charge of the principal hospital, is an old resident of the island and has written much of its diseases. We spent a most interesting morning listening to his narration of cases and visiting his wards. He states the natives are immune from black water fever, and it occurs but rarely among foreigners. The same may be said of hepatitis and dysentery, although beriberi is endemic and often terminates fatally. As at all seaports, venereal diseases prevail largely, and syphilis assumes severe types. Leprosy and elephantiasis are common among the Hindus, Arabs, and Africans, and phthisis pulmonalis occurs with great frequency.

If any of the eight varieties of the tsetse fly are found in Zanzibar they are certainly not yet infected, as no cases of the sleeping disease has originated on its shores. Two patients were imported from the mainland, and trypanosomes were found before death, the parasites being discovered in the spinal fluid in one instance and in the blood of the other. There is also a small military hospital on the island, supported by the sultan, and under the charge of Dr. MacDonald. It is not restricted to military patients, as all classes, including women and children, are admitted. Last year an epidemic of bubonic plague occurred, and stringent measures are being enforced to prevent its recurrence. In the bacteriological laboratory attached to the hospital an average of over two hundred dead rats, collected from all parts of the city, are examined microscopically every day, many of which are still found infected, and a vigorous campaign is being carried on for their extinction.

The government also supports an institution some miles from the city for the segregation and care of the leper population, of whom forty-seven are now under treatment. The sexes are represented in about equal numbers, and the tuberculous and anæsthetic forms of the disease occur with equal frequency.

247 Fifth Avenue.

GUNSHOT WOUNDS OF THE SPINAL CORD. A PLEA FOR EARLY MYELORRHAPHY, WITH REPORT OF A CASE OF BULLET WOUND THROUGH THE LIVER, SPINAL COLUMN, AND CORD. LAPAROTOMY, LAMINECTOMY, RECOVERY.*

By Irving S. Haynes, Ph. B., M. D.,
New York,
Professor of Practical Anatomy, Cornell University Medical College; Visiting Surgeon to the Harlem Hospital; Member of the New York Academy of Medicine, New York Surgical Society, etc.

(*Concluded from page 591.*)

A fairly complete record of gunshot wounds of the spine has been made since the paper of Prewett in *Annals of Surgery*, xxviii, 1898, and is here appended. Taking the statistics of Prewett's cases and those collected by Dr. Moorhead and myself, we have a representative set of cases embracing the so called antiseptic era since 1879. These cases tabulated show the following statistics:

PREWETT'S CASES, 1879 TO 1896.

Case.	Condition of Cord.	Region. Cervical.	Dorsal.	Lumbar.	Sacral.	Operation. Recovered.	Died.	No Operation. Recovered.	Died.	Remarks.
1	Disintegrated	1							1	Lived 23 days.
2	Degeneration		1				1			Lived 6 weeks secondary meningitis.
3	Pierced by splinter bone		1				1			Bullet in canal, pneumonia.
4	Compression	1					1			
5	Penetrated by bullet	1							1	Lived 42 hours.
6	Crushed, laceration	1							1	Lived 58 hours.
7	Compression		1						1	Lived 19 days.
8	Destroyed			1			1			Bullet passed through kidney.
9	Penetrated by bullet		1				1			Lived 54 days, septicæmia.
10	?		1					1		Walked, ataxic gait.
11	Lacerated	1							1	Lived 43 hours.
12	Laceration	1					1			
13	Hæmmorrhage ?	1						1		Recovered.
14	Degenerated, softened		1						1	Lived 113 days.
15	?	1						1		Partial recovery.
16	Compressed		1				1			Lived 4 months.
17	Severed		1				1			Lived 6 days.
18	Perforated		1						1	Lived 17 days.
19	Crushed		1						1	Bullet in canal.
20	Bruised	1							1	
21	Nearly severed		1					1		Lived active life years.
22	Uncertain	1					1			Lived 12 hours.
23	Cauda equina matted			1				1		Lived active life 18 years.
24	Compression		1			1				Partial recovery.
25	?	1				1				Bullet removed, complete recovery.
26	Compression		1			1				Little improvement.
27	?		1				1			Died from shock of operation.
28	?		1					1		Partial.
29	Compression		1					1		Complete.
30	Not lacerated	1							1	Bullet in canal, 5 months alive.
31	Completely severed		1						1	Lived 3 months, bullet in canal.
32	Hæmorrhage	1					1			Lived 8 months before operation and 5 days after it.
33	Destroyed	1							1	Bullet in canal, lived 5 days.
34	Uninjured	1							1	Septic meningitis.
35	Nearly severed		1						1	Lived 24 hours, high dorsal.
36	Dura pierced	1				1				Complete recovery.
37	Split and contused		1			1				Bullet in canal, partial recovery.
38	Perforated		1						1	Lived 14 days.
39	?		1			1				Bullet in canal, complete recovery.
40	Compressed		1						1	Pleura, liver and kidney pierced by bullet, which lay in canal.
41	?	1							1	Lived 1 year, legs paralyzed.
42	Cord pierced		1			1				Partial, bullet passed through stomach.
	Totals	17	23	2	0	7	11	7	17	

STATISTICS FROM FORTY-TWO OF PREWETT'S CASES, COLLECTED FROM 1879 TO 1896.

Bullet found in the spinal canal, 13 times	31	per cent.
Cord severed	4 times	
Cord crushed	6 "	
Cord pierced by spiculae of bone or bullet	6 "	
Compressed	10 "	
Cervical region, 17 cases	40+	per cent.
Operated, 6; recovered, 2; died, 4	66⅔	"
Not operated, 11; recovered, 2; died, 9	82	"
Total mortality	76½	"
Dorsal region, 23 cases	55	"
Operated, 11; recovered, 5; died, 6	56½	"
Not operated, 12; recovered, 4; died, 8	66⅔	"
Total mortality	61	"
Lumbar region, 2 cases	05	"
Operated, 1; recovered, 0; died, 1	100	"
Not operated, 1; recovered, 1; died, 0	00	"
Total mortality	50	"
Total mortality in operated cases	61	"
Total mortality in non-operated cases	71	"
Proportion of recovery in favor of operating	10	"

* Read before the New York Academy of Medicine, May 4, 1906.

CASES COLLECTED BY DR. HAYNES AND DR. MOREHEAD

Cases.	Condition of Cord.	Region. Cervical.	Dorsal.	Lumbar.	Sacral.	Operation. Recovered.	Died.	No Operation. Recovered.	Died.	Bullet in Canal 11 times. Remarks.
1	Severed completely		1			1				Remarkable recovery (1).
2	Pierced		1			1				Almost perfect.
3	Cauda equina				1	1				Nearly complete (2).
4	Appeared normal			1		1				
5	Severed, crushed						1			Lived 8 days (3).
6	Crushed		1				1			Lived 3 months (4).
7	Compressed, sott		1				1			Shot through stomach, Pyæmia, lived 11 months.
8	Completely severed		1						1	Lived 263 days.
9	Adherent to dura; cord not changed		1			1				Shot through lung and liver; operation 3 years after injury.
10	Compression		1			1				Operation 4 years after injury, good recovery
11	Pulpified		1				1			Lived 21 days.
12	Nearly sound		1							Lived 31 days.
13	Perforated by speculæ	1					1			Lived 7 days.
14	Pressure	1				1				Resumed work in cotton mills.
15	Appeared normal clot in centre		1				1			Lived 6 days.
16	Completely severed		1			1				Fair recovery (5).
17	Bullet in canal penetrated by spiculæ of bone	1				1				Fair recovery.
18	Destroyed		1						1	Mauser.
19	Destroyed		1						1	
20	Cord not touched		1						1	Martini-Henry.
21	Cord not touched		1						1	" "
22	Perforated near centre	1								Good recovery.
23	Appeared normal. compressed by bone		1			1				Almost perfect recovery.
24	Clot in canal	1					1			Died from pneumonia.
25	Pressure from bullet		1			1				Practically full recovery (6).
26	Lacerated blood clot			1					1	Wound through liver, aorta, spine, lived 33 days.
27	Laceration one side		1			1				Full recovery (7).
28	Perforated by bullet		1			1				Spleen and stomach perforated, laparotomy and laminectomy: fine recovery.
29	Contusion		1			1				Good recovery.
30	Severed completely		1						1	Lived 4 months (8).
31	Nearly severed						1			
32	?	1				1				Good recovery (9).
33	Compression							1		
34	?	1						1		
35	?		1					1		
36	Entirely severed		1				1			
37	?		1				1		1	
38	?		1					1		
39	Compressed		1				1		1	
40	Severed		1			1				
41	Exposed					1				Almost complete recovery (10).
42	Suppuration	1					1			
43	Completely severed						1			
44	Completely severed	1					1			
45	Compressed by bullet		1			1				Left hospital well (11).
46	Not determined		1				1			
	Totals	11	31	3	1	19	14	4	9	

STATISTICS FROM THE 46 CASES COLLECTED, COVERING THE PERIOD FROM 1896 TO 1906.

Bullet found in the spinal canal	11 times	24 per cent.
Cord severed	10 "	
Cord crushed	4 "	
Cord pierced by spiculae of bone or bullet	5 "	
Compressed	11 "	

	MORTALITY per cent.
Cervical region, 11 cases	24
Operated, 9; recovered 5; died 4	44⅔
Not operated, 2; recovered, 2; died, 0	0
Total mortality	36⅓
Dorsal region, 31 cases	67½+
Operated, 21; recovered, 12; died, 9	42⅞
Not operated, 10; recovered, 2; died, 8	80
Total mortality	55
Lumbar region, 3 cases	66⅔
Operated, 2; recovered, 1; died, 1	50
Not operated, 1; recovered, 0; died, 1	100
Total mortality	66⅔
Sacral region, 1 case	02+
Operated, 1; recovered, 1; died, 0	100
Not operated, 0; recovered, 0; died, 0	—
Total mortality in operated cases	42½
Total mortality in non-operated cases	69¼
Proportion of recovery in favor of operating	26¾

CASE IV.—Vincent. Reported in *Revue de Chirurgie,* 1892. Abstracted in *Medical Magazine,* Vol. I, p. 89, p. 523. Man, thirty-one years old, wounded by a revolver, fracture of the first lumbar vertebra, partial paralysis of lower limbs, paralysis of bladder and rectum. Operation next day, fragments of bone and pieces of lead removed, no injury to cord, considerable immediate improvement of the paralysis, receding with the development of a myelitis which lasted one week, but rapidly returning afterwards. In one month he walked with crutches, and in two without support. The catheter was unnecessary in three weeks, the wound healed primarily.

CASE V.—Vincent. *Ibidem.* Man, eighteen years of age, shot with revolver, fracture of lamina of tenth dorsal vertebra, complete sensory and motor paralysis below. Operation on third day, entire ball found in spinal canal, also a fragment of bone, both removed. Very slight improvement the following day. On the sixth day patient was removed from hospital, left without use of catheter, and died two days later. Autopsy showed a crush of the cord through its entire thickness, with softening and suppuration.

CASE VI.—Vincent. *Ibidem.* Man, thirty-seven years of age, shot with revolver, fracture of laminæ of eleventh dorsal vertebra, complete paralysis below. Operation on third day, ball and a large bony fragment removed from the vertebral canal. The wound healed well, and there was considerable improvement from the third day after the operation, but symptoms of myelitis were evident in three weeks, and the patient succumbed three months after the accident.

CASE VII.—Kramer, reported in *Journal of the American Medical Association,* xxxv, 1900 p. 352. Woman, shot with a 38 calibre revolver, bullet entered abdomen two inches below and three fourths of an inch to left of ensiform, vomited blood, immediate and total paralysis below level of wound, great pain in upper half of body, purulent cystitis developed, bowels moved only by enema, extensive bed sores formed over all bony prominences below wound, motor paralysis of lower extremities with spastic contraction of flexors of legs and adductors of thighs, sensory paralysis to level of ninth dorsal spine, patellar reflexes absent. Operation performed on July 21, 1896, posterior arches of the eighth, ninth, tenth dorsal vertebræ removed, dura was found uninjured, and opened, the cord was soft and atrophic, and the bullet found in the body of the ninth dorsal vertebra, its point projecting into the spinal canal with two speculæ of bone, which were removed. The dura was not closed, muscles and skin sutured interruptedly about silkworm-gut drain. There was primary union, and some amelioration of symptoms, but patient died on November 24, from pyæmia.

CASE VIII.—G. A. Peters. Gunshot wound of the spinal cord, reported in *British Medical Journal,* October, 1897, p. 961. Woman, thirty-one years old, June 12, 1896, shot with 32 calibre revolver, the bullet entering the left side of the spine, near the eighth dorsal vertebra, went through laminæ, and lodged in the body of the ninth dorsal vertebra. No operation done as cord was thought to have been divided and condition hopeless. Died on the 263d day after injury. Cord completely severed, and ends retracted for a distance of one and one half inches.

CASE IX.—Joseph Sailer. Bullet wound of spinal cord, reported in *Journal of Nervous and Mental Disease,* June, 1901. Man shot on November 2, 1896, through lung, liver, and spinal cord, entrance of bullet one cm. to left of right nipple, exit two and one half cm. to left of spine of twelfth dorsal vertebra, no suppuration, no hæmorrhage, complete paraplegia, loss of sensation in lower half of body, intense pain in back, followed by atrophy of legs, bed sores over all bony points, severe paroxysmal pain in thighs and lower por-

tion of abdomen. Seven months after injury sensation began to return in left side, fourteen months after injury sensation normal in left limb, abolished in right leg to level of great trochanter, above this intense hyperæsthesia to level of the twelfth dorsal vertebra, complete abolition of rectal and vesical sensibility, motion and reflexes lost in right lower limb, while motion in left leg consisted of ability to flex thigh on abdomen, no motion below knee, knee jerk exaggerated, ankle clonus present. In June, 1899, a renal calculus was removed. In November, 1899, the patient began to suffer with severe fulgurating pains in thighs and lower abdomen. An operation was performed by Dr. Wharton, arches of the tenth, eleventh and twelfth dorsal and first lumbar vertebræ removed; cord exposed for four inches, dura greatly thickened, few adhesions to pia, which were broken up, no change could be seen in cord, wound healing perfect. This operation relieved pains absolutely, and some improvement followed, until there was anæsthesia and paralysis only of right leg and lower part of right thigh and total anæsthesia of left foot, movement at both hips and left knee joint, slight movement of left foot and toes, total anæsthesia over sacral area, and hyperæsthesia of perineal region, sexual reflexes only partially impaired.

Case X.—Lloyd, Present Status of Spinal Surgery, in *Journal of the American Medical Association,* April and May, 1901. Male, shot four years (August 9, 1897) previously by a 32 calibre revolver in mid-dorsal region, a little to the left of the spine, immediate paraplegia and anæsthesia following, unconscious most of the time for four days, vesicorectal paralysis present, but improved after a few weeks. At the end of a year the patient could move his right leg, and had some sensibility in both. There was gradual improvement during past three years, general health being good. On examination the organs were found normal, bed sores on buttocks and ankles, ankle clonus exaggerated, also patellar reflexes, and gluteal spasm by pressure on sciatic nerves, feet in plantar flexion. On September 1st a laminectomy was performed, sixth to tenth dorsal vertebræ being removed, evidences of fracture of seventh, eight, and ninth laminæ were found, pressure on cord existed over entire area, and evidences of old pachymeningitis. Recovery. Condition on leaving the hospital showed that reflexes were normal. The patient has recovered a great deal of power in lower extremities, although he still he has to use crutches, but has no trouble with bladder or rectum.

Case XI.—Lloyd. (Case 166.) Weller and Van Hook, 1891. *American Journal of Medical Science,* ciii, p. 395. Wound from revolver bullet in the third dorsal region, complete paralysis of lower limbs, removal of third dorsal arch, cord found reduced to a pulp, death followed twenty-one days later.

Case XII.—(Case 167 Lloyd.) Conley, 1891. Revolver wound in fifth dorsal region, complete paralysis of lower limbs, retention of urine and fæces, fifth dorsal arch removed, cord nearly sound; bullet found in back of vertebra, iodoform drain, but no union because of escape of cerebrospinal fluid. Death thirty-one days later.

Case XIII.—Eskridge and Rogers, *Journal of Nervous and Mental Disease,* xxx, pps 129-143, March, 1903. An alcoholic gambler, aged thirty-one, was wounded on February 23, 1898, by a 38 calibre revolver, the bullet entering left of front of middle line of neck, no wound of exit. There were no cerebral symptoms, but complete paralysis of left arm and leg, although patient could move right arm and leg. Operation was performed two days later, bullet had passed through fossa between fourth and fifth cervical transverse processes, fifth left cervical lamina splintered, it then entered spinal canal through body of fifth cervical. The bullet was extracted through back of neck, one inch below surface. Two pieces of bone (three sixteenths and one eighth inches respectively) pierced the cord proper, and three eighths of an inch piece had entered membranes, causing much bleeding. The bullet had not affected the cord and latter was damaged by the spiculæ only. Death followed on seventh day. Autopsy showed softening about injured site of cord, some to right side and medullaward. Wounds due to the spiculæ which did not penetrate more than half way toward central canal.

Case XIV.—Eskridge and Rogers (2). Male, aged nineteen years, shot on March 6, 1898, from behind at a distance of fifteen to twenty feet by a 22 calibre Colt rifle. The entrance of the bullet was on level with seventh cervical spinous process. The patient was not unconscious, had no cerebral signs, left leg weak, but by effort can move both. Complete paralysis of left wrist and fingers, lessened left elbow power, while right side was normal, peculiar distribution of tactile sensation, pain, and heat and cold sensation on left and right arm and left half body, the deep reflexes were normal. Upon operation (apparently soon after entrance) the bullet and a "small spicula" of bone were found in the spinal canal at cervicocostal junction, external to membranes, but pressing on left lateral half of cord. The membranes were intact, little bleeding. Author mentions no other details. Patient was able to walk with a cane on May 1st. July 1st he had recovered except for defective muscular sense in left arm and leg, which he has to watch in walking. "Fall of 1898.....left town.....resumed work in cotton mills....." As nothing was heard from him in response to letters, improvement was assumed.

Case XV.—Langdon and Wolfstein. Gunshot wound of the spine. *American Medicine,* December 14, 1901. Man, fifty-seven, was on April 21,. 1901, shot by 32 calibre revolver in upper dorsal region, one inch to right median line on level with upper angle of scapula, no wound of exit. Examination sixteen hours after injury showed after he had recovered from shock, which was marked on entrance to hospital, that paralysis of lower extremities was absolute, while touch and pain abolished below nipple line. No band of hyperæsthesia, retention of urine and fæces, knee jerk and ankle clonus absent. Plantar reflexes on both sides present, and flexor in direction. Operation seventeen hours after injury. Spinal canal was opened from third to sixth dorsal laminæ inclusive, showing a ragged hole through dura, slightly to left of median line, dura reflected, cord exposed for two inches, appeared normal. Bullet found and removed from body of fifth dorsal vertebra to left of median line. On April 23, plantar reflexes were present. On April 27 patient died.

Autopsy record: Cord removed, no solution of continuity. On section a central clot was found occupying area of gray matter, cord in the region of the wound showed very extensive changes, fibres in white matter adjacent showed destructive vacuolization.

Case XVI.—Fowler. Suture of the spinal cord. Completely severed by a bullet. *Annals of Surgery,* October, 1905, p. 507. A. E., male, eighteen years old, was shot on April 28, 1903, in the back at a distance of thirty feet by a .32 calibre bullet. The wound of entrance was one and one quarter inches to the right of the median line and on a level between the tenth and eleventh dorsal spines. Motor and sensory paralysis below a line around the body one inch above the iliac crest and midway between the umbilicus and symphysis. The bladder and rectum were paralyzed.

Upon operation on May 9th, the laminæ of tenth, eleventh, and twelfth dorsal vertebræ were removed. The bullet was found lying transversely between the

ends of the severed cord, imbedded in a large blood clot. The clot and bullet were removed, the ends of the cord approximated without difficulty by three fine chromatized catgut sutures, the dura being included in the sutures. The wound was drained by narrow strips of oiled silk and closed up, with this exception.

The patient was treated by massage, electricity, and walking exercises in a cage like support resting on wheels, somewhat like a "baby tender." With this support and braces to stiffen the knees, he could move about the hospital. During the remainder of 1904 and 1905, his bladder and rectal sensations improved. He can now tell when a movement of the bowels is imminent, and, at times, is able to retain it for a while. The same is true of the bladder. Both legs are spastic and quite useless for locomotion, except with the help of the apparatus mentioned. Sensation is practically abolished in the entire affected region, with the exception of an area five inches in length extending down the outer side of the right thigh, where some sensation is present. He cannot distinguish between heat and cold. Tactile sensations are recognized, but are usually referred to a point two or three inches distant from the point touched.

CASE XVII.—Murphy. Report of Pistol Shot Wound in Neck. *New York Medical Journal,* lviii, p. 414, August 29, 1903. Male, thirty-three years old, shot December 24, 1902, by 32 calibre bullet in neck, two and one half inches above right clavicle, lodging in the skin above the scapula (presumably the right, although not so stated). Patient had motor paralysis of right leg and arm, no other data given. Following week paralysis more marked (location not stated), and was taken home at end of four weeks. He suffered from bed sores, motor paralysis, right arm and leg, and right ulnar pain. Operation twenty-nine days after the bullet had been extracted (course not stated), laminectomy of fifth and sixth cervical, one half inch spicula bone penetrated cord, site unstated, and depth not given, only benefit of operation was relief of pain.

A foot note (in small type following a † mark) says: "Improved, walks with a cane, regained use of right leg, and partial use of right arm, bowels and bladder and bed sores normal...." "Time promises even better results."

CASES XVIII, XIX, XX and XXI.—G. L. Cheatle. Four cases of gunshot injury to spinal column. *Journal of the Royal Army Medical Corps,* I, pp. 271-276, October, 1903. Below cases went to autopsy at Boer war. 1. Mauser wounded at 800 yards, eleventh dorsal wound, death on sixteenth day. No operation, destruction of cord. 2. Fifth dorsal, death twenty-four hours. No operation, membranes perforated and cord destroyed. 3. Martini-Henry, wounded ten yards' range. No operation, through seventh rib and seventh dorsal vertebra, and in latter leaden particles, cord and meninges untouched, death on seventeenth day. 4. Martini-Henry, wounded tenth dorsal. No operation, death on eighteenth day. Vertebral canal not entered.

CASE XXII.—Pilcher and Onuf. Gunshot wound of cervical portion of spinal cord. *Annals of Surgery,* xxxviii, 1903, p. 812. July 16, 1901, boy, eleven years old, shot by .22 calibre rifle, wound of entrance in the middle line in front, just below the episteral notch, motor and sensory paralysis from the clavicle down, no sign of injury to trachea, œsophagus, or any other structures in front of the spine, urination and defæcation involuntary, priapism present, respirations entirely abdominal. For the first ten days, the tendency to pulmonary œdema and hypostatic pneumonia required constant treatment, involuntary defæcation and urination continued, but at the end of this time he regained control over the sphincter ani. At the end of three weeks he had regained partial and, ultimately, complete control of his bladder. On the fifth day first moved the toes of his left foot voluntarily, at the end of the fourth week he could move his left limbs nearly normally, and had a good grip in left hand, improvement in the right side not so marked. On the seventeenth day he began to move his right leg, and at the end of the fourth week, he could flex the right leg on the thigh, but the movements were very weak. On August 12th, the laminæ on the right side of the fourth, fifth, and sixth cervicle vertebra were removed, but without locating the bullet, which was subsequently shown by an x ray to lie in the spinous process of the sixth cervicle vertebra, no apparent destruction of the cord or membranes. The opening in the meninges was sutured, and the external wound closed over a small iodoform gauze drain. Recovery was uneventful, and the patient went home in two weeks.

One year after the injury he was examined by Dr. Onuf who says that the most extensive lesion was situated at the level of the eighth cervical to the second dorsal segments of the cord. The parts affected at this level were both anterolateral columns, probably chiefly the lateral ones, furthermore, both anterior horns, particularly the right, and probably the entire right posterior column. The nature of the lesion is difficult to judge, probably it was partly direct destruction by the bruising force, partly destruction by hæmorrhage, as is especially suggested for the anterior horn.

CASE XXIII.—Marsh. Gunshot wound of spine. *American Journal of Medical Sciences,* 1905, p. 875. Male, twenty-five years of age, June 14, 1903, shot just below and internal to angle of left scapula by 32 calibre revolver, paralysis of legs was complete for two weeks, bowels and bladder also paralyzed, severe pain around lower part of thorax; after two weeks patient gradually began to recover use of his legs, right more than left, he can stand and move around a very little. Radiograph showed bullet lodged apparently in spine on a level with body of eighth dorsal vertebra, and a little to left of spinal canal. Six weeks later left pupil became slightly larger than right, sensation to touch and pain in legs delayed, especially in right; heat sensation normal, except upon right leg, when it is somewhat confused, analgesia present on outer side of right leg, ankle clonus on both sides; weakness of flexor muscles of both legs, most marked on left, transverse area of slight anæsthesia at level of twelfth dorsal vertebra and first lumbar vertebra, slight Babinski and patellar clonus on both sides, most marked on right, plantar reflex absent, marked diminution of power in left leg. Achillis jerk present on both sides. Upon operation the spinal cord was exposed from seventh to ninth dorsal vertebræ, inclusive, and appeared normal, the bullet had not entered canal, but had driven the posterior arch of the eighth dorsal vertebra inward, until it pressed on cord. Result, March 26, 1904, motions of spine normal, patient says he feels as well as he ever did, the left great toe has tendency to catch on floor, when walking barefooted, but gait is about perfect, knee jerks exaggerated, but muscular power of legs is normal, moderate degree of ankle clonus.

CASE XXIV.—Miller. Gunshot wound of fifth cervical vertebra. *North American Journal of Homœopathy,* xxviii, p. 509, August, 1903. Burly negro, 38 calibre bullet entered "below right ear.... and lodged in outer one third left clavicle...." Patient had no cerebral signs, "motor and sensory paralysis below clavicle and upper one third of arm complete," retention of urine and fæces, he was able to eat. Operation forth-eight hours later, bullet wound "through laminæ of fifth cervical vertebra near spinous process....," pea sized clot, cord normal. He

died on third day. Autopsy revealed normal cord (no microscopical examination), hypostatic pneumonia, and death apparently due thereto, no sepsis.

Case XXV.—Alvarez. (Personal communication.) The patient was a farmer, aged about forty-five who was seen and operated upon in June, 1904, about six months after he had been shot from behind by a 32 calibre bullet entering from above right shoulder blade and passing downward to lodge at the costovertebral junction of the eleventh rib. He had also been shot in two other parts of body by two other bullets, but the wounds due to same had healed and had no bearing on his spinal condition. Radiograph (by Caldwell) showed the bullet with its point in the spinal canal and this location was confirmed by laminectomy.

Symptoms.—Patient walked with assistance; sensory paralysis to some extent below waist. "Numbness complained of below navel." Incontinence and constipation, but latter overcome by cathartics. No trophic changes; some atrophy in thigh and legs, but mainly of disuse.

Operation by Dr. Alvarez.—Resection of eleventh rib and laminectomy of articulating vertebra. Bullet impinged upon cord, the symptoms being from pressure rather than from destruction of tissue.

Results.—When last heard from (three months ago) the patient had practically recovered full function. He is "able to ride horseback....and walk without aid...." Dr. Pearce Bailey saw this case, as did Dr. Tilden Brown; former reports case in his recent *Diseases of Nervous System Resulting from Accident and Injury* and improperly states (p. 217) that the missile penetrated abdomen and that the bullet lodged in the "fourth lumbar vertebra," he also credits the operation to Dr. W. T. Bull, who never even saw the case! (This statement is made by request of Dr. Alvarez.)

Case XXVI.—Poulton. Gunshot Wound in Liver, Aorta, and Spine. *Australasian Medical Gazette,* July, 1904, p. 338. Patient was shot by .22 calibre Winchester rifle on February, 1904, had to journey forty miles by train, when examined at the hospital there was no nausea, no vomiting, no blood per rectum, paraplegia, retention of urine, no priapism, no abdominal distention, liver dullness well defined, sensation in skin of left hip, but not over the rest of the lower extremities. Four days later under a general convulsive attack, his legs moved, thereafter he could move feet a little, return of sensation in skin of legs, which was hypeæsthetic in places. Post mortem showed perforation of liver, aorta, and first lumbar vertebra, the bullet was found in cauda equina, the termination of the cord was lacerated, and the spinal canal contained bloot clot.

Case XXVII.—Fort. Laminectomy with Report of a Case, *International Journal of Surgery,* February, 1906. June 14, 1905, man, aged twenty-five, was shot by a .32 calibre revolver, and paralysis was immediate. The wound was at a point directly over the eleventh dorsal vertebra. Twenty hours after injury, the following conditions were found: Motor paralysis complete from the wound downward. Sensory paralysis from the umbilicus anteriorly and the wound posteriorly to the knee. There is hyperæsthesia of the legs and feet, girdle pains, absence of patellar reflexes, and ankle clonus. Retention of urine and priapism.

Laminectomy was performed. The ball had fractured the spinous process of the eleventh dorsal vertebra and the right lamina, driving the fractured portions of the lamina into the spinal canal. The bullet had split, one third entering the spinal canal, while the remaining two thirds had penetrated the soft parts, ranging inward and to the right. The portion of the bullet in the spinal canal had penetrated the dura and a small portion of the right side of the cord. This portion of the bullet was removed, and the dura and the rest of the field of operation were cleansed with saline solution. The wound of the dura was left open. The rest of the wound was closed with interrupted silkworm gut sutures. He voided three ounces of urine on June 16th, but did not regain complete control of the bladder until June 19th. There was considerable escape of cerebrospinal fluid. The motor and sensory paralysis of the lower extremities continued to improve, but hyperæsthesia below the knees persisted, although less marked. By July 15th the hyperæsthesia had disappeared, except immediately below the right knee. July 13th, the motor and sensory functions being practically normal, although he had not been allowed to walk. He has now fully recovered, except some pain on the external aspect of the right knee.

Case XXVIII.—Pegram. Bullet Wound of Abdomen, Spleen, Stomach, Vertebra, and Spinal Cord. *Annals of Surgery,* July, 1905, p. 83. July 11, 1904, woman aged twenty, was shot at close range with a 32 calibre revolver. The bullet entered the body in the left axillary line over the eighth rib; abdomen tender on palpation with marked rigidity without dullness in the flanks. Complete motor paralysis of both lower extremities, though slight movement of the thighs, probably through the psoas muscles. Both lower extremities were hyperæsthetic, even the weight of the bed clothes being painful, with the exception of an area of the left leg supplied by the fourth lumbar nerve, which was anæsthetic.

She was operated upon and the bullet found to have passed through the lower border of the spleen, the mesocolon (cutting a branch of the splenic artery), in and out of the posterior surface of the greater curvature of the stomach, but no opening in the vertebra could be felt. The bleeding vessel was ligatured, the openings into the stomach closed, the spleen not bleeding and left alone, the abdomen closed about an iodoform gauze drain.

The patient reacted well from the operation. On the second day she complained of numbness in the legs, and could move the toes. On the fifth day, she was incontinent of the urine for the first time. On the sixth day, a bed sore developed over the sacrum, and the bowels moved involuntarily. The abdominal drain was removed on the seventh day, and considerable pus escaped.

On the tenth day an anteroposterior skiagrapn showed the bullet to be in line with the body of the first lumbar vertebra, pointing downward. On the sixteenth day, a second x ray from the side located the bullet apparently in the spinal canal. The ability to move the legs was increasing, but the pain in them was extreme. On the nineteenth day, the spinal canal was opened, and the bullet found under the lamina of the twelfth dorsal veterbra in the right posterior quadrant of the spinal cord, which had been traversed by the bullet and was considerably lacerated. The bullet was removed, the rent in the meninges not closed, but drained by a wick of plain gauze, and the rest of the parts sutured in position around the drain. The patient was placed on a Bradford frame, face downward, recovery from the ether was good. On the second day after the laminectomy (twenty-first) voluntary control of the tibiales antici was present but weak. She moved the right quadriceps and adductors, and the left adductors. She was allowed to go home on August 31st, wearing a plaster jacket.

In December she could walk a few steps alone. She has regained almost complete control over the bladder, the bowels usually required an enema. On February 8, 1905, Dr. G. L. Shattuck examined patient.

There is a saddle shaped area of anæsthesia to tactile and temperature sense, that is quite symmetrical. Starting on the sacrum behind and curving onward toward the trochanters and then turning downward and involving the posterior surface of the thighs as far

as the upper border of the popliteal spaces, this anæsthetic area then extends to the inner side of thighs including the labiæ. The whole surface of the left foot, including the ankle and a narrow strip on the right sole, are anæsthetic. Elsewhere, on both extremities, with the exception of the anterior surface of both thighs as low as the tibial tubercles, sensation was delayed though present. All muscles of both lower extremities give the reaction of degeneration. Though sensation was delayed, or altogether lost in places and normal in others, there were no sharp lines of demarcation to correspond with the distribution of any one nerve. A transverse myelitis must have been set up by the injury to the cord caused by the passage through it of the bullet, in order to produce the paralysis of the bladder sphincter, noted for the first time on the fifth day after the injury. The recovery from the lesion is necessarily a slow one, but if the patient continues to regain her lost functions at the present rate of progress, I believe we may look for a disappearance of almost all motor and sensory disturbances.

CASE XXIX.—Vincent. *L'Etat actuel de la chirurgie nerveuse.* I, 1903, p. 513, Chipault. Revolver bullet shot from a distance of two metres. Point of entrance on a level with eleventh dorsal, and a little to the left of the median line. Absolute paraplegia. Diminished sensation in the lower muscles and up to the umbilicus. Half erection. Resection of the posterior arch of the tenth and eleventh dorsal by means of chisel and mallet. Contusion to the left of the spinal axis, the meninges of which were not lacerated. The bullet was not recovered. During the days that followed, partial return of motion, then vesical contractions. The condition improved, little by little, and at the end of several months the wounded man walked quite well, with a good vesical function.

CASE XXX.—Ostermeyer. Gunshot wound in spinal cord. *Ibidem.* II, 1903, p. 516. A lesion of the spinal cord from a gunshot wound. A young girl of seventeen years was struck by a revolver bullet, shot from behind, on February 2, 1902. The point of entrance was found at the top of the tenth dorsal vertebra, five centimetres to the left of the median line. Complete paresis of the lower extremities with paresis of the bladder. Complete analgesia and anæsthesia. At the end of February, incontinence of urine. Many bed sores. Death occurred on June 11, 1892. The missile was found at the top of the eleventh dorsal in the canal of which it had completely severed the nervous contents.

CASE XXXI.—Djemil Pacha. *Ibidem,* p. 654. A man, thirty-one years old, shot by a revolver in the lumbar region. Operation twelve hours after the accident. The spinal marrow was almost completely severed. The ball, lodged in the body of the twelfth lumbar vertebra, was removed. The patient expired some weeks after from exhaustion.

CASE XXXII.—Maughinas. Gunshot wound of the spine. *Ibidem,* p. 690. Man, twenty years old, shot by a revolver in the right side of the nape of the neck, on a level with the fourth cervical vertebra. The patient had fallen unconscious from the shot, but, ten minutes later, he returned to consciousness. For six months after, he experienced tingling along the right upper lower extremities. On the lower extremity, the patient also experienced tingling, beginning at the knee and running down into the foot. There persisted during quite a length of time, a left torticollis which appeared after the injury. All these phenomena disappeared in time and the patient up to 1896 felt well. In the year 1878 (five months after the injury) Professor Aretie, having discovered the bullet by means of an electrical apparatus, had already made an attempt to remove it, but did not succeed. Beginning in 1896, the patient commenced to feel tingling in the thumb and index finger, and then the two upper extremities and the lower extremities grew weak. He could not move his head in complete extension backwards. There appeared in 1898 a muscular atrophy of the four extremities, worse on the right side (difference of about one cm. in the circumference), spasmodic gait, paresis of lower extremities, reflexes of upper and lower extremities were exaggerated, spinal tremor, but sensation everywhere normal. Micturition and defæcation normal. Neither trophic, nor vasomotor disturbances. The bullet was felt and extracted, after incision of the soft parts.

What is remarkable in this case is the late meningomyelitis phenomena (spasmodic paraplegia, atrophies, etc.) which appeared eighteen years after the traumatism, the patient remaining in good health during all of this long interval.

CASE XXXIII.—Maughinas. *Ibidem,* p. 691. G. F., soldier, twenty-eight years old, injured May 2, 1897, by a firearm of small calibre. Point of entrance of the bullet was over the fourth zygomatic bone, point of exit behind the right ear, five centimetres below it. After the injury there appeared feebleness and numbness in the upper extremities, and a positive feebleness of the right lower extremity. There were inability to open the mouth and to take nourishment, contracture of the jaws, rigidity and difficulty in the movements of the nape of the neck. At the right of the neck, opposite the third cervical vertebra, was a painful prominence. The patient could not lie down, and protected the right head. Improvement was gradual. On June 18, movements of the fingers and opening of the mouth was better. Pain in the vertebral column persisted, at times, very strongly. On July 1 he left the hospital with a weakness in the right upper and lower extremities, and a positive stiffness in the muscles of the nape of the neck.

CASE XXXIV.—Kokoris. *Ibidem,* p. 692. B. C., aged twenty-two years, alcoholic, was injured April, 1897, in war, by a bullet which entered the body on a level with the sixth cervical vertebra, a little to the right of the median line, and passed out on the opposite side. The wound closed rapidly, and the patient felt nothing much until the beginning of the following year (1898), when his upper extremities began to get weak, and he began to experience, at the same time, pains in the nape of the neck. In March, 1898, M. Kokoris saw the patient, who could not use his upper extremities for performing his work as a laborer (to dig, etc.). He found the scars of entrance and exit of the bullet. There was evident paresis of the upper ertremities, mainly the right. Sensibility to pain was diminished on the right half of the nape of the neck, in the shoulder and on the anterior aspect of the upper extremites as far as the fingers of the hand on the same side. On the left side, the sensation was normal. The patient felt tingling around the cicatrices in the nape of the neck, in the right shoulder as far as the elbow, and on the anterior aspect of the forearm of the same side. Reflexes normal. There appeared no disability of any of the other organs.

CASE XXXV.—Papatheodoron. *Ibidem.* K. G., soldier, wounded, May 5, 1897, in war, by a portion of an exploded shell which entered the body through the right scapula on a level with the spine, passed to the left, after having fractured in its course the arch of the third dorsal vertebra. Immediately after the injury, paralysis of the lower extremities and of the trunk occurred, beginning at the ribs corresponding to the injury. Also paresis of the rectum and bladder. Diminution of sensation was present up to the level of the third thoracic vertebra. After several days of treatment (antiseptic dressing, immobilization) the morbid phenomena began to recede, so that, on

May 16th, sensation had positively returned, and certain movements, especially of the right foot, were restored. On May 17th, the patient urinated voluntarily. Towards the end of the month, he could turn over in bed and later raise himself alone. He could also extend and flex his extremities, the movement of extension being more difficult than that of flexion. The feet were in a position of varus equinus. Sensation had likewise been restored. In this condition the patient departed for his home.

Case XXXVI.—Dascalachi et Elephtheriadis. *Ibidem,* p. 720. Man wounded by a revolver shot, as a result of which the bullet lodged in the body of the eleventh dorsal vertebra, as the radiograph made by Dr. Javanovich demonstrated. The spinal marrow was found entirely severed by the bullet, and the patient died several days afterwards.

Case XXXVII.—Dascalachi et Elephtheriadis *Ibidem,* p. 720. Fracture of the thoracic vertebra, following a revolver shot, in a young man of fourteen years. The result was fatal.

Case XXXVIII.—Chipault. *Ibidem,* II, 1903, p. 780. The correspondent of the *British Medical Journal* in South Africa observed a soldier who had received a bullet which entered underneath the tenth rib, on the left axillary line, passed in front of the vertebral column, probably grazing it, and came out on the right axillary line underneath the seventh rib. The shot had been fired at 600 yards and had made a perfectly clean wound, both at the point of entrance and at the point of exit. At the time of the injury, the effect most particularly noticed was the loss of motion of the legs. This gradually returned at the same time when there appeared in the lower extremities pains which became more and more intense, and which persisted.

Case XXXIX.—Gianelli. Chipault. *Ibidem,* iii, 1903, page 907. A man of twenty-one years, on July 4, 1897, received a revolver shot in the left side. He immediately fell to the ground. In the night following, there was incontinence of urine. On the third day he had œdema of the lower extremities, sloughs, complete abolition of sensation and motion in the lower third of the thorax, the abdominal walls, and the lower extremities. The patellar, pedal, and cremasteric reflexes were completely abolished. Retention of urine with incontinence from overflow. On the 20th, incontinence of fæcal matter; on the 30th, a sacral bed sore. Death on the 12th of August.

At the autopsy, in addition to the cystitis, pyelonephritis and fatty degeneration of the organs were found. A comminuted fracture of the body of the third dorsal vertebra, where the bullet was imbedded, had compressed and softened the cord.

Case XL.—Grey. Gunshot wound of the spine. *Ibidem,* page 807. An Indian of twenty-two years, was shot by a rifle; when the ball struck him he fell paralyzed. It had penetrated the body three centimetres to the left of the eighth dorsal spinous process. The wounded man entered a hospital two and a half months later. He had œdema of the lower extremities (sloughs), complete paralysis of sensation and motion ascending as far as the seventh dorsal process and three fingers' breadth above the xiphoid appendix, abolition of reflexes, incontinence of urine and fæces. In the back was an oblique cicatrix, three centimetres long, ending at three centimetres outside of the eighth dorsal spinous process. An incision was made from the fourth to the eleventh dorsal process with two transverse incisions at the extremities, the arches of the seventh and eighth dorsal vertebra were removed, the bullet was found beneath and attached to the seventh process, its point facing directly into the spinal cord which was missing, scarcely a thread of connective tissue being present. Union was by first intention. In consequence of the operation the sloughs and the œdema disappeared, and the general condition improved, but two months later the patient began to deteriorate anew, and he was able to survive but a short time.

Case XLI.—Chipault. *Ibidem,* page 828. My most remarkable case is that of a young man who had received a shot from a revolver in the cervical region. The missile entered the left carotid region, came to stop in the skin of the axilla of the right side, after having in its course reduced almost to splinters the third and fourth cervical vertebræ, and leaving the cord exposed. Operation was quite difficult, because the missile having deviated from its course, had passed through the regions of the large vessels of the neck and the arm, scattering in its course débris of bone, clothing, and hair. Success was perfect. The patient recovered, retaining all of the movements of the head and of the neck, as in the normal state. He paid no attention to a slight atrophy of the muscles of the right shoulder, which disappeared almost entirely with proper gymnastic exercises.

Case XLII.—Justo. *Ibidem,* page 887. Gunshot wound of the cervical cord. Patient had been wounded in February, a revolver ball having entered third or fourth centimetres from the median line at the top of the superior border of the thyreoid cartilage. His first stay at the hospital was from March 31st to April 21st. At this time the patient complained only of indefinite pains and walked perfectly. After his departure, his condition gradually changed. There appeared a complete paralysis of the lower extremities and an almost complete paralysis of the right extremities (hemiplegia). Respiration had become altogether diaphragmatic. Tactile sensibility was retained over the entire body, but sensibility to pain was abolished in the lower extremities and in the trunk. It was greatly diminished in the hands and in the forearms. In the arms and shoulders there was a slight hyperæsthesia, also in the neck, and its inferior limit was two centimetres underneath the handle of the sternum. Later this hyperæsthesia zone was, during the night, the seat of copious sweatings. Thermic sensation was retained in the analgesic parts and exaggerated in the hyperalgesic parts. Patellar reflex was exaggerated, especially on the right side. Pupils were normal. There was incontinence of urine and constipation. An operation was performed on May 16th, resection of the fifth and sixth cervical laminæ. During the night of the following day, death occurred without any other precursory signs than much tossing about.

At the autopsy, there was found an abundant retropharyngeal purulent collection in continuity with the body of the fractured third cervical vertebra. The pus extended up to the dura mater. The bullet was not found.

Case XLIII.—Estes, *International Journal of Surgery,* April, 1906, pp. 132, et seq. The third case of myelorrectomy was for a gunshot wound of the ninth dorsal vertebra. The bullet lodged in the spinal canal and completely severed the cord. I exsected about three quarters of an inch of the disintegrated cord and brought the dura and ends together as before. This case was the only one operated after Dr. Stewart's and Dr. Harte's case was reported. The operation was not done until the eighth day after the injury, as the woman and her friends persistently refused surgical intervention until the last minute. Myelitis had already developed, and the patient died.

The three following cases have been furnished to me by Dr. Warren S. Bickham, to whom I am indebted for the privilege of publishing them in this series:

Case XLIV.—W. D., young negro man, age not given, admitted to ward 4, Charity Hospital, New Orleans, November 3, 1896, with penetrating bullet wound

one inch to left of median line of neck on level with upper border of thyreoid cartilage, ball lying beneath the skin of his back on the right side, between spine and scapula, on a level of the seventh cervical vertebra. There were characteristic paralytic phenomena of cord involvement of that level.

Laminectomy of sixth, seventh, and eighth cervical vertebræ was done. The ball had pierced the body of the seventh vertebra, completely and cleanly severing the cord, the ends being about three quarter inches apart. An unsatisfactory attempt was made to suture cord and membranes (meningomyelorrhaphy). Wound was drained and sutured. No improvement followed, and death occurred on November 7, 1896.

CASE XLV.—E. H., negro man, age not given, was admitted to ward 4, Charity Hospital, New Orleans, December 12, 1896, having been shot on December 9 from behind by a .38 calibre ball, and presenting wound immediately over the sixth dorsal vertebra, with loss of motion in and hyperæsthesia of lower extremities, and other phenomena of cord involvement. These symptoms continued until December 15th, when cerebrospinal fluid flowed so freely that it penetrated the mattress and collected on the floor. On December 18th, laminectomy of the sixth dorsal vertebra was done and the bullet removed from within the spinal canal, where it lay beneath the lamina which it had pierced, firmly embedded and pressing against the cord, the contour of which it had markedly altered and the meninges of which it had slightly lacerated, thus allowing escape of cerebrospinal fluid. Record does not state how wound was treated, but states that healing was by primary union. Patient improved slowly but steadily, and left the hospital well on March 4, 1897.

CASE XLVI.—S. M., male negro, age thirty years, was admitted to ward 4, Charity Hospital, New Orleans, November 22, 1897, shot by a pistol in the axillary line over the seventh rib, with paralysis of lower extremities, bladder, and rectum. (Presence of yellow fever had deterred patient's coming to hospital earlier.) No evidence of wound of pleura or lung. On November 23rd, after attempting to follow up suppurating tract of bullet, five spinous processes and their laminæ were exposed, corresponding with the suggested range of the bullet and the clinical phenomena. Two sets of laminæ were removed, and the cord exposed and examined without result, by which time patient's condition had become so serious that further steps were discontinued. The patient was infused, and the wound closed with drainage. He rallied and seemed better for about thirty-six hours, and then suddenly became delirious and died.

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1125 MADISON AVENUE.

DRUGS IN DIABETIC GLYCOSURIA.

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Innumerable remedies have at different times been recommended for the cure of diabetes. None, however, can exercise a curative effect upon the disease proper, and only a few appreciably influence the excretion of sugar. Most of the reports on the effect of the different medicines which have been used in diabetes have been made without sufficient dietetic control and for periods of time that were far too short to rule out the uncertainties that always arise in regard to the effect of a remedy in a disease which is subject to so many spontaneous fluctuations as diabetes. In interpreting, furthermore, the efficacy of any drug in diabetes, a disorder that especially in its milder forms is so markedly influenced by emotional and psychic states, the element of suggestion must always be considered, particularly when a new drug of much vaunted efficacy is tried for the first time.

The fact that there is not, so far as we know to-day, any proper antidiabetic remedy should not, however, discourage us from using those drugs that we know to be capable of favorably affecting the general condition of the patient, counteracting or remedying complications, or, above all, removing distressing or dangerous symptoms, chief among them the glycosuria. To enumerate all the drugs which have been recommended would be futile, so that only those may be discussed which have empirically vindicated their claims to usefulness in the treatment of diabetes.

Chief among the valuable drugs are opium and its alkaloids. By the aid of opium the last traces of sugar can, without doubt, often be removed from the urine in cases that do not become altogether sugar free on a restricted diet. In severe cases, particularly of patients existing upon a permanently restricted diet, but still excreting some sugar, it often reduces the glycosuria. It does not, however, seem to exercise any appreciable effect upon the sugar excretion in diabetics who are eating carbohydrate foods. The effect of the drug can never be absolutely relied upon, and its action is always uncertain; for occasionally it exercises no effect at all, even in the specified cases. Its effect is never perma-

nent, for when its use is stopped, the glycosuria reappears and increases rapidly, only to disappear again, everything else remaining equal, when opium is again administered. Many patients rapidly wear the drug out, so that the dose must be continuously increased if its effect upon the sugar excretion is to be maintained. Herein lies the chief danger from the use of opiates, especially if the patients know what they are taking.

The dose should be large from the beginning, i. e., at least half a grain (0.3 gramme) of the extract should be given three or four times a day, preferably in combination with the extract of belladonna $^1/_{12}$ grain (0.005 gramme) or atropine sulphate, grain $^1/_{100}$ (0.001 gramme). Some clinicians prefer codeine, others morphine in appropriate doses, but in my experience the best effects are obtained from the extract of opium administered as stated.

It is probable that opiates act chiefly by their sedative action and not by any specific effect upon the carbohydrate metabolism, although some investigations seem to indicate that opiates interfere with the disassimilation of the tissue albumins, and hence prevent the organism from splitting off sugar molecules from them. This would explain their good effect in patients living upon a carbohydrate free diet in whom the urinary sugar is undoubtedly derived from the catabolism of the tissues proper.

A number of other remedies have been given for their sedative effect upon the nervous system, chief among them bromides, chloral, phenacetin, sulphonal, valerian, etc. Many of these drugs undoubtedly act beneficially, especially in the neurotic or neurasthenic types of the disease, but in most cases they are inert and do more harm than good by irritating the gastric mucosa and deranging the digestion.

Next in importance to the opiates are the preparations of salicylic acid, given either as sodium salicylate, in doses of from 10 to 15 grains (0.6 to 1 gramme), or as aspirin, in doses of from 5 to 10 grains (0.3 to 0.6 gramme) several times a day, preferably after eating. These drugs act differently from the opiates, for their effect becomes apparent precisely in those patients who are eating some carbohydrate food; they seem to increase the boundary of tolerance for carbohydrate foods, and thus they are enabled to utilize some of the alimentary starches. These drugs, too, should be given in large doses, as indicated, in order to do any good. They are strictly counterindicated in diabetics suffering from gastric or renal disorders, and as many diabetics, especially of the severe type, suffer from these complications, their usefulness is limited. Some skeptics go so far as to maintain that the salicylic acid preparations do good chiefly by deranging the stomach, and hence interfering with the proper assimilation of food, and that they reduce the glycosuria in this way simply because upon their administration less of the ingested carbohydrate pabulum is absorbed. It is hard to disprove this criticism.

Jambul occasionally acts very well in diabetes in a manner similar to the salicylates, i. e., it aids in increasing the boundary of tolerance. Its action, however, is very uncertain, and its effect transitory. One can never predict in advance, therefore, whether or not jambul is going to be effective. Patients, moreover, wear this drug out very rapidly, so that if it is administered at all, it should be given uninterruptedly, i. e., for two or three weeks at a time and then again after an interval of at least four or six weeks. Sufficiently good effects from the use of jambul are obtained to warrant its trial in every case that does not promptly yield to dietetic treatment. The drug may be given in the form of the dry powder in the dose of from 5 to 30 grains (0.3 to 2 grammes), three or four times daily, in capsules, gradually increasing the dose until as much as an ounce (32 grammes) is given a day.

A much more reliable and pleasant preparation is the maceration with water, which may be prepared as follows:[1] Two hundred grammes of dried jambul fruits, including the seeds, are finely powdered and macerated in two litres of water to which 10 of salt and 4 of salicylic acid are added at 37° to 40° C. The watery extract is filtered off and 100 c.c. of the fluid taken cold every morning on an empty stomach and in the evening before retiring. The salicylic acid is added merely as a preservative.

Alkalies are always useful in diabetes, and I have made it a practice to give from 15 to 30 grains of sodium bicarbonate, or calcium carbonate two or three times a day in every case of diabetes for indefinite periods of time. Alkalies, in the first place, effectively aid in counteracting the acidosis that is so frequent in diabetes. In this sense a continuous alkali therapy may be considered as an useful prophylactic measure against the development of severe acidosis, which notoriously often leads to the development of coma. Aside from their effect upon the acid intoxication, alkalies must be considered an hepatic stimulant, and there is also much experimental evidence to show that they distinctly stimulate intracellular oxidation and hence, we must assume, promote the destructive metabolism of circulating carbohydrates.

The good effects derived from the use of many of the mineral waters, natural or artificial, that are so popular in the treatment of diabetes must in large part be attributed to the alkalies they contain. To this category belong especially waters like Vichy, Marienbad, and Carlsbad.

Potassium iodide occasionally acts very beneficially in diabetes, particularly in two types, viz., those that are due to arteriosclerosis, possibly involving the arteries of the pancreas, and those that are due to syphilis (central lesions, syphilitic pancreatitis, hepatitis). Every case, therefore, presenting evidences of arteriosclerosis or having a suspicious syphilitic history should be given the benefit of an energetic iodide treatment, care being taken, of course, above all things, that the stomach and intestine are not deranged.

Mercury seems to act less beneficially in diabetes due to syphilis. This must be attributed to the fact that the diabetic manifestation in syphilis is always a late sign, presumably due to arterial changes involving the central nervous sys-

[1] Proposed by von Noorden.

tem or the pancreas and producing degeneration of portions of these organs. Potassium iodide may here possibly be effective, whereas mercurials are usually without effect. Bichloride of mercury has been recommended, but the consensus of opinions among reliable clinicians seems to speak against its efficacy. Given hypodermically, it not infrequently produces disagreeable sequelæ, owing to the vulnerability of the skin and subcutaneous tissues in diabetes and the tendency in this disease to the development of skin lesions. Its use, therefore, had better be eschewed.

Various drugs have been recommended whose efficacy should be attributed to their action as intestinal antiseptics. To this group belong lactic acid, creosote, and other phenol preparations, benzozol. Their effect is very uncertain, and I have never seen any marked benefit accrue from their use.

Organotherapy on theoretical grounds should be efficacious in diabetes. However seductive the use of pancreas preparations or of combinations of pancreas with muscle or with liver or with salivary gland extract may appear, practically nothing of definite value has so far been observed from their administration. Pancreas is occasionally useful in the treatment of the steatorrhœa of diabetes, but it has no effect upon the glycosuria. I have reported cases in which the boundary of tolerance seemed to be raised by the use of pancreas muscle extracts,[2] but observations made subsequently in a larger number of cases have failed to support the first results. Liver extracts and brewer's yeast have all been used, but the optimistic claims advanced in the beginning have never been vindicated, although yeast often favorably influences the furunculosis of diabetes. Nevertheless, organotherapy appears to be a very hopeful field, and while nothing tangible has so far been accomplished, we may hope some day to discover an efficient organotherapeutic method of combating the disease.

General tonics, such as quinine, arsenic, and iron, are commonly used in diabetes. They occasionally improve the anæmia and possibly stimulate the nervous system to increased activity, but I have never been able to convince myself that they exercise any appreciable effect upon the course of diabetes nor upon the amount of sugar excreted in the urine.

100 State Street.

POSTERIOR GASTROENTEROSTOMY: EXTREME GASTROPTOSIS, MOTOR INSUFFICIENCY, EPILEPSY; APPARENT CURE.

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The ætiology of epilepsy has always been to the pathologist an expansive field for investigation and to the clinician a source of baffling annoyance; the former, because as yet no specific ætiology or pathological entity has been determined; the latter, because few cases of epilepsy, after establishment of the habit, rarely if ever get well; therefore any cause of epilepsy in a given case and hence any rational means of treatment that can be advanced ought to elicit patient investigation, if not merit a place of prominence in the consideration of this intricate subject. The cases thus far reported wherein the causes of epilepsy have been traced to peripheral lesions have been of the *post hoc ergo propter hoc* variety; hence the establishment of reflex epilepsy on a sound scientific basis has been impossible; it is no wonder, then, that from many sources such a reflex condition is questioned. But where one can and does cause a cessation of attacks of epilepsy by means of circumcision in cases of adherent prepuce, by expulsion of intestinal parasites, by the dilatation of a stenotic os uteri, by the removal of a shoe button forming the nucleus of a large rhinolith, etc., one is fairly justified in assuming clinically at least the casual relationship between these peripheral irritations and the evident epilepsy in these cases.

Among the causes of reflex epilepsy pathological states of the gastrointestinal tract have been advanced, and cases reported in support of this view. As an addition to the literature of this class of cases wherein the gastrointestinal tract can be held responsible for certain cases of epilepsy, I will relate the following interesting one of classical nature in which the habit was established; where there existed a total gastroptosis, the greater curvature rested upon the pubes, the lesser at the umbilicus; where marked muscular insufficiency and ecstacy with the consequent deficient drainage existed; a case where medicinal as well as mechanical treatment were used to the limit of patience and endeavor without improvement, and where a posterior gastroenterostomy was made to improve gastric drainage, a case where the result justified the attempt, and cured apparently a case of genuine epilepsy. Before advancing I will say that the case in question, as the history will show, was one of epilepsy in its true sense, not a case of tetany or other clinically similar affection.

Case.—L. S., housewife, thirty-three years of age, no children. Patient was admitted to the Emergency Hospital on August 12, 1905.

Family history: Father died at fifty-five years, cause unknown; mother alive and well. One brother drowned, one sister died of diphtheria.

Personal history: Patient had all the diseases of childhood, except scarlet fever and measles. Thirteen years ago she had typhoid fever, and says that she made a prompt recovery from this; that during the summer, following convalescence, she began having epileptic fits. These fits came on at first about once in three months, since then they have come on more frequently. During the last ten years she had had trouble with her stomach. She does not know just when it began, nor what gastric symptoms she complained of during the first five years; for the last five years she had experienced great distress after eating, with belching of gas. This eructation of gas did not always bear relation to meals. The distress had been getting worse for the past two years; for the past two weeks she had not been able to assume the horizontal position at night on account of abdominal distention. She says that at times she was obliged to double herself up until she could expel the gas; this would give her relief. For the last year she had vomited considerably

[2] *New York Medical Journal.*

At first the vomiting occurred about once in three weeks, but later came on oftener. During the whole time this vomiting would come on without the least effort on her part. At times she could press her hands in the region of the stomach, and thus provoke vomiting, while at other times the food would well up without any appreciable cause without preceding nausea. The feeling of hunger was always exaggerated during these attacks of vomiting. Bowels were, as a rule, constipated, though occasionally diarrhœa set in. The epileptic fits referred to would be preceded by gastric distress, particularly by a feeling of fullness in the abdomen; she says that those around her would remark that the patient would always give a yell just as the fits were coming on; she would fall to the ground, foam at the mouth, eyes would roll back, she would struggle with her arms and legs, her hands would double up, with thumbs clenched inside of fingers; then she would lie stiff and unconscious like a dead person for an hour or more. When she would come to, she would feel drowsy and have a headache for a day or more; she would also feel exhausted. At times when falling she would injure herself, on one occasion she cut her upper lip, which necessitated six stitches; at another time she sprained her shoulder. Patient began to menstruate at thirteen and has been always regular.

Physical examination: Patient is of medium build, poorly nourished; the skin is dusky pale; the mucous membrane of her mouth is anæmic, and the gums bleed easily. Chvostek and Trousseau phenomena are absent. The tongue is coated with whitish fur, and her breath is very foul. The lungs and heart are normal. In the urine no abnormal changes are noticed; while the blood examination shows secondary anæmia. The liver is of normal size and position; no tenderness over gallbladder. The examination of the kidneys shows that the lower pole of the right kidney can be palpated, but the kidney is not abnormally movable, hence not a floating one. In the stomach, just below the umbilicus, there appears a fullness, which upon palpation emits gurgling sounds; above umbilicus is a marked depression. Inflation of stomach with gas revealed the lesser curvature of stomach somewhat crescentric in outline at umbilicus; when the body is lying horizontally the greater curvature rests upon the pubes. The depression between the umbilicus and the xiphoid is exaggerated. In determining the outline of the stomach while it was thus artificially inflated, both percussion and palpation were diligently employed, and towards the end of these manipulations, just as the patient expressed a desire to be allowed to empty the over distended organ, symptoms which characterized the premonitory sensations of former attacks of epilepsy were experienced; the patient said that she felt one of her spells coming on. Irritation of the pharynx with the fingers brought on powerful gaseous eructations; the relief thus obtained caused the feeling of the impending epileptic seizure to immediately disappear. Examination of the gastric contents showed muscular insufficiency and deficiency of free hydrochloric acid.

Operation: The stomach was found completely gastroptotic and dilated, the lesser curvature was at the umbilicus. There were no ulcers nor cicatrices present. A posterior gastroenterostomy with Connell suture was made. The healing was per primam and the convalescence uneventful.

An analysis of this case shows (a) that we have to deal with a distinct degenerative stigma, namely, a total gastroptosis, probably a congenital anomaly; (b) ecstasy with motor insufficiency and consequent deficient drainage; (c) altered chemism of stomach with fermentation and the attendant gaseous distention and autointoxication; (d) undoubted epileptic seizures; (e) immediate cessation of attacks of epilepsy after the artificial establishment of gastric drainage, namely, after gastroenterostomy.

Could the epilepsy in this case have been due to deficient drainage of the gastric contents and the results therefrom? I report this case from a casuistic standpoint merely, and at the same time with a desire to suggest that possibly enteroptosis, particularly gastroptosis, may play a rôle in the ætiology of epilepsy.

888 Main Street.

PATHOLOGICAL PHYSIOLOGY.

By Byron Robinson, B. S., M. D.,
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Hopeful men worship the rising, pessimists the setting, sun.

The subject of this paper is pathological physiology. The theme is the abnormal function of organs, or organs acting under pathological conditions. The field included lies between normal physiology and pathological anatomy. It is the zone of pathological physiology or clinical pathology. In general it is determined with facility whether the visceral functions are pursuing a normal or abnormal course. In certain subjects, however, it is difficult to determine whether the functions are normal or abnormal. Some subjects present unmistakable pathological symptoms for years, e. g., constipation, diarrhœa, renal secretion, sweating. However, such subjects, though not theoretically, they are practically well. Pathological physiology enables the physician to estimate between theoretical and practical functions. Not infrequently the functions of a subject vary to such a degree that it is difficult to decide whether he is well or ill. I know one subject who, between forty-five and sixty years of age, would periodically (several times annually) urinate some 5 quarts daily, otherwise he was practically well. He died of an acute attack of diarrhœa at seventy.

To understand pathological physiology one must possess a clear view of physiology. It may be well to remember that the common function of the thoracic and abdominal visceral tracts are sensation, peristalsis, absorption, secretion. Disease is a deviation of one or all these common functions. Disease begins as abnormal function and progresses with its repetition. The study of pathological physiology constitutes the subject of abnormal function. To the four common functions mentioned of the thoracic and abdominal visceral tracts we must add the three special functions of the tractu genitalis—viz., ovulation, menstruation, and gestation—which offer vast fields of pathological physiology in daily practice.

Pathological physiology arises from defects in the living protoplasm (inferior anatomy and physiology) or from environments (bacteria). The subject born with pathological physiology (heredity, stigma) is unable to withstand the friction of normal life. The subject may occupy such environments that injurious influences affect his protoplasm, such as excessive physical or mental exercise, heat, cold, bacteria. The study of pathological physiology dignifies the basic study of physiology; it im-

presses the student with the functions and the structure of viscera. First and foremost, the physiology of an organ must be studied in order that its deviations may be comprehended. The study of physiology of organs will assist in comprehending the factors which influence the functional deviations. The subject of visceral peristalsis, rhythmical movements, the object of which is to propel visceral contents—urine, blood, ingesta, lymph, gestation products, secretions, carbonic acid gas—is of vast practical interest in the daily practice of medicine. Viscera are continually being subject to peristaltic waves. Peristalsis is dependent largely on visceral contents and blood supply. Hence the sluggish bowels (deficient peristalsis) are improved by supplying constant fresh blood. Fresh blood constantly streaming through the tractus intestinalis urinarius, and genitalis initiates repeated peristaltic waves. The gravid uterus is in constant myometrial waves from extra blood supply. The tractus intestinalis, as the fresh blood streams into its territory, is subject to constantly repeating peristaltic waves. In visceral peristalsis the quantity of blood bathing the automatic visceral ganglia plays a rôle.

Since pathological physiology is the zone between the physiology and pathological anatomy it is doubtless the incipient stage of future disease, pathological anatomy. For example, chlorosis appears to be a precursory stage, a stage of pathological physiology, to splanchnoptosia; gravidity precedes splanchnoptosia. The study of pathological physiology cultivates accurate diagnosis in incipient stages of disease, enhancing opportunities for prophylactic measures. Modern investigation has forced us to accentuate functional (incipient) aspect of disease. It stimulates us to discover and recognize abnormality of function. It is returning to physiology as a basic study. The discovery of an abnormal function may lead to the diagnosis of a contingent disease. The disordered function in the irritable weakness of the nervous system presents inferior anatomy and physiology.

Pathological physiology attempts to instruct through disordered functions of the living subject. Pathological anatomy attempts to instruct through changed structure in the living and dead subject. In practice recognized disordered functions, or pathological physiology, are manifest more than a hundred fold more than recognized pathological anatomy. The old physicians recognized pathological physiology under another name, as clinical pathology, functional or sympathetic disease. Among the first to discuss pathological physiology from a scientific or systematic standpoint was Cohnheim, as found in his celebrated general pathology. However, before me lies the third edition (1904) of Dr. Rudolph Krehl's book, the first edition of which (1898) presented a systematic treatise on pathological physiology. Practically Dr. Krehl's book is a pioneer work on pathological physiology, systematizing the labors of Cohnheim and others, as well as making vast additions to the field himself. Pathological physiology is not a new subject, for physicians recognized its existence in the past. Modern laboratory methods have demonstrated that the normal function of individual organs vary within an extensive range. The border line between physiology and pathological physiology is manifest by symptoms of various characteristics. Frequently organs will vary double their usual range, as the quantity of urine may be two or four pints daily, defæcation may be once or twice daily, or every second day. Perspiration may be doubled for a period. We may observe the heart beat 120 per minute for weeks with no recognizable pathological anatomy.

Pathological physiology is characterized by an abnormal course of the life of an organ or a series of organs. In what does normal course of organs consist? We may designate as normal living processes what is found in the vast majority of individuals, in man and animals, when the individuals are considered healthy. It is granted that the function of an organ has normally an extensive range of healthy action. For example, the quantity of uric acid in the urine of the genera of aves, carnivora, herbivora, and bimana is extremely variable.

Perhaps man would not long survive producing a quantity of uric acid which birds habitually secrete. Each genera and, perhaps, species, have a law for themselves as regard the function of organs, possessing extensive variation of organ functions, without being pathological. Pathological physiology should be taught with more exactness in the colleges, so that the graduates may not be compelled to learn it at the expense of their patients. Pathological physiology should be comprehensively explained to students, as it enables them to secure a general view of organized viscera, as well as the vicarious action of individual viscera. Besides it aids the practitioner to diagnosticate disease when no pathological anatomy demonstrably exists. Pathological physiology is the zone between physiology and pathological anatomy, an indeterminate, extensive, and frequently rapidly varying zone. It is well to bear in mind that I am discussing pathological physiology as dominated by the sympathetic nerve (nervous vasomotorius). I will present in this essay some views on pathological physiology of the viscera which I have taught for years in gynæcological and abdominal courses.

Irritable weakness of the nervous system presents inferior anatomy and physiology. The subject of pathological physiology will force us to study the stigmata of function. It is noteworthy that before the days of legitimate specialism few practical stigmata were recognized. At present every specialty has a chapter of abnormalities, of stigmata. In fact, the study abnormalities has proceeded to such a degree that a majority of individuals are docketed with telltale stigmata of some sort or kind. The pathological physiology or stigmata of individuals may with impressive instruction be termed "habitus," by which prefix we may distinctly designate certain classes of subjects. We have the habitus phthisicus, habitus nervosus, and the ensemble of certain symptoms may well be termed habitus splanchnoptoxicus. The habitus is an expression of inherited weakness, defect. It presents the idea that inferior anatomy and inferior physiology has been transmitted to or acquired by the individual. The tendency of modern study is to accentuate the functional aspect of disease; hence it is this method of study that has taught that there is an abnormality of function. The mind is a good source of pathological physiology, as by concentrated thinking one can congest excessively an organ, e. g., genitals,

brain. There is frequently more in the physician's suggestions than in his medicine.

Rational Medicine alone will stand the test of science and time. Rational medicine must be the medical amazon of truth, from which will be eliminated the false lateral issues, tangenital fads, distorted views of the unbalanced and the knave. Rational medicine must be founded on the solid ground of Nature to stand forever. Will the teachings and knowledge of pathological physiology aid the physician to exactuate more rational practice? The comprehension of pathological physiology will extend the physician's views of physiology, which should resume its original basic position in medicine. The future of clinical medicine lies in the direction of pathological physiology. Rational medicine consists in the application of scientific laboratory methods to the ambulatory and bedside patient. However, the laboratory seems to advance periodically, beyond clinical application. In the field of science and investigation there is continually clashing of opinions, with statements and counter statements, with evidence and counter evidence, from which established rules of practice evolve. The principles of science require during the progress of discoveries, revision, reconsideration, and recasting.

The perfection of physiological, chemical, and pathological knowledge with consequently improved technique will enable the clinician to advance on the citadel of disease rationally during the premature stage of pathological physiology with more practical hope of success. Cardiac irregularity, palpitation (which chiefly rests on vigorous muscle or myocardium) is generally pathological physiology, disordered function (excessive, deficient, or irregular peristalis) and often a nervous manifestation only. The function or the physiology of the cardiac ganglia (Remak's, Bidder's, Ludwig's, and Schmidt's) have become temporarily disordered, pathological, wild, irregular, yet no pathological anatomy can be detected. It is well enough to attempt to be scientific in explanation to the student, that cause and effect are logical sequence, yet, also, to admit that we cannot detect the cause of cardiac palpitation in any existing pathological anatomy—it is pathological physiology, disordered functions through nonrecognized channels. Pathological physiology alone will explain the irritable bladder, the cystoscope does not reveal the pathological anatomy. The vesical apparatus is acting unusually, it is assuming an abdominal course. I have noted such bladders for years; they afflict the possessor by frequent evacuations, by loss of sleep, and broken rest. Who will attempt to explain the surface anæsthesias by pathological anatomy? They are here to-day and there to-morrow. Many a time and oft have I noted the pharyngeal anæsthesia in hysteria; in fact, one can apply a uterine sound vigorously to the surface of the pharynx without inducing nausea or reflex muscular action.

We have no more appropriate terms to apply to these phenomena than pathological physiology, disordered function. In practice of medicine the student should be instructed in physiological principles and not that he is always to attempt to remove changed structures by his remedies or scalpel. The practice of medicine is the practice of common sense. We are to use means to an end. For example, if a frog's heart recently removed is placed in a warm physiological salt solution, it will perform its peristalsis for a time and cease; now, I can renew its peristalsis again by stimulation; the stimulant may be an icicle, electric current, a hot steel needle, or a current of water or air. The chief duty of the profession is to aid in the resumption of normal functions, not merely to attempt to discover some pathological anatomy or changed structure, for it would waste valuable time. We should cultivate pathological physiology rather than surgery, as it will be the vast future therapeutical field for nine tenths of illness, whereas surgery is of value in about one tenth of illness.

The mind is frequently the organ that needs the stimulant of which quacks, patent medicines, knaves, and pretenders take advantage. Pathological physiology recognizes the influence of mind over matter. The sensible physician realizes that suggestions are a powerful aid to peristalsis, absorption, secretion, and sensation, to the restoration of visceral function, and though the honorable physician may not make the bold, false assertions of the quack, he can suggest honest, legitimate aid and comfort to the patient. The honest physician is secret and reticent. The quack is blatantly false. Secrecy and reticency is better than falsehood. The physician can and should be an honest man. The physician comprehending pathological physiology becomes master of suggestions for patient's benefit. The medical profession cannot afford to leave the influence of mind over matter, the field of suggestive therapeutics to the quack and knave. The world of knowledge is our parish. To alleviate suffering and prolong life from rational demonstrations of science is our duty. To treat the sick by any legitimate means is our privilege.

Diagnosis.—The diagnosis of functional deviation of abnormal visceral action is the rock and base in pathological physiology. This view indicates that the physician understands the physiology. First and foremost is the diagnosis, i. e., what abnormal course are the functions assuming? Disease is abdominal physiology, and the sooner the physiological deviation is diagnosticated, the sooner may effective remedial agents be instituted. To be useful to a patient, the incipient stage of disease, i. e., premature pathological physiology must be detected in order to check the progress of the abnormal function before pathological anatomy establishes itself. We must accomplish the diagnosis by all known aid, medical technique, and laboratory methods.

Pathological physiology will rest on laboratory methods for rational knowledge and practical application. Laboratory methods are valuable assets to a physician because they will increase his business of rational application and success. The physician's self-confidence, which arises from accurate knowledge, begets confidence in the patient, and this increases his power and clientele. Laboratory methods increase the physician's efficiency, and this contributes to his professional attainments. Laboratory methods are invaluable to the physician himself for his own rational view of any disease. Practically, patients are willing to recompense a physician according to his ability and attainments. The day is not distant when the physician's power to diagnosticate disease will be measured by his laboratory methods, especially in the incipiency or in the stage of

pathological physiology. The judgment of the physician will be heavily taxed as to prognosis. Unfortunately some cases of splanchnoptosia appear with neurasthenia, as an integral part, or splanchnoptosia is imposed on the subject of hysteria. Neurasthenia and hysteria, though not primary in splanchnoptotics, easily thrives among them. It is an indication of defective knowledge and judgment to attribute symptoms of nephroptosia or gastroptosia that belong to general spanchnoptosia.

Blood Volume.—Pathological physiology combines rational views of living organs, more than that merely based on pathological anatomy. For example, when pathological physiology of the kidney is studied, the instructor must take rational and comprehensive views of the renal viscus. Pathological physiology of the kidney takes into account the condition of the kidney, the constituents of the blood and volume of blood that streams through the organ. The discussion of these three subjects in regard to the kidney lends a comprehensive view to the student in making a diagnosis on the living subject, e. g., the functional capacity of a kidney is the rational test, not albumen and casts. It is common to observe much variation in the quantity of urine, inexplainable, except by pathological physiology, for urinalysis offers none. Pathological physiology teaches that the circulation of an organ is a fundamental factor in comprehending diseased conditions. The teacher who does not comprehend varying phases of circulation of the female genitals in the different stages of pueritas (quiescent), pubertas (development), menstrual (functionating), gestation (functionating), puerperal (involution), climacterium (subsidence), and senescence (quiescent), makes a defective gynæcological teacher. No organs, except the kidney, offer such an extensively varied base to illustrate pathological physiology of the tractus vascularis as the female genitalis.

The circulations of an organ quotes its value in the animal economy; it rates its function. Each organ is supplied by arteries which have automatic visceral ganglia, which regulate, govern the volume of blood which flows through them. The automatic visceral ganglia tell the story, why the volume of blood changes so much in different conditions of the organs, when the parenchymatous cells of an organ functionate as the liver during digestion, the uterus during gestation, the cerebrum during thinking (cerebration), the blood volume is increasingly directed to the organ through the automatic visceral ganglia, dilating the arteries. Hyperæmia indicates the functionating brain, kidney, and genitals, and these organs occupy vast considerations in practice. Pathological physiology indicates that great benefit is secured by controlling circulation, blood volume, by checking peristalsis through withholding food; controlling diet controls the blood constituents to a certain degree. Bier's method of artificial congestion is employing pathological physiology (in the tractus vascularis) for the purpose of curing chronic inflammation.

Treatment of Pathological Physiology.—The treatment of pathological physiology consists: 1. In the detection and removal of causes; 2, the rational regulation of visceral function, *a*, by fluids; *b*, by foods; 3, habitat; 4, avocation; 5, prophylaxis.

1. *The Detection and Removal of Their Causes.*—The detection of the cause in pathological physiology requires the best head and the finest analysis. The detection of a rectal ulcer or fissure as the cause of innnumerable reflexes is a credit to the diagnostician. The recognition of damaging effects of praeputial adhesions is important. The glans penis or clitoris is like an electric button, the pressing or irritation of which rings the whole organism into pathological physiology. A cinder in the eye is a grand master of pathological physiology. I have known the detection and removal of a bleeding, proximally located, rectal polypus save a child's life and make a physician's reputation. This little rectal polypus had bled and escaped being examined for a whole year by numerous consultants. I know a gynæcologist who did five operations on a woman's genitals for pain in the distal abdomen. She became no better, but worse. The cause of all her pain was discovered by a consultant, who found a marked spinal gibbus or kyphosis of tuberculous nature at the junction of the dorsal and lumbar vertebræ. The reflected pain from kyphosis had dislocated the gynæcologist's mind, to make a scapegoat of the genitals. Frequently infected groin glands ars associated with an infected corn on a toe. A decayed tooth may cause earache. I knew a woman, of twenty-four years, experienced some eight months of crucial suffering from pathological physiology. She was examined by one physician who said her ovaries should be removed, two others said that she must have her appendix extirpated, one physician diagnosticated neurosis, another indigestion, finally a physician was employed who found she had a ureteral calculus and removed it after which she gained thirty pounds in eight weeks. This is an excellent example to demonstrate that, though pathological physiology allows ample time for diagnosis and prophylaxis, yet it requires the finest head with the finest skill of analysis to interpret the signification of abnormal visceral function. Hepatic calculus may introduce pathological physiology into the tractus intestinalis and associated visceral tracts, but it requires experience, accumen, and skill to detect the cause of pathological physiology.

2. *Rational Regulation of Visceral Function by Visceral Drainage.*—Pathological physiology teaches the supreme importance of visceral drainage, of maintaining in normal attentuated solution bodily secretions. It teaches the benefit of removing the debris of waste laden blood by means of fluids. When the patient's blood and organs are saturated with waste laden material, he is unprepared to resist the attacks of disease, he is prepared for irritation, for reflexes or neurotic explosions. With scientific views of pathological physiology, the correction of functional deviation with rational ideas of visceral drainage, the physician holds the key of prophylaxis against the formation of pancreatic, hepatic, and renal calculus. With ample visceral drainage, with sufficient fluids taken at regular intervals for visceral functions, the pancreatic, biliary, and renal secretions would seldom precipitate their salts, and colloid material or cohesive ground substance of calculus would be so attenuated that calculus would not form.

Viscera should functionate at a normal maximum for bodily safety and protection. Pathological physiology takes into account the composition of

glandular secretion as the pancreatic hepatic, and renal, with the view that pancreatic hepatic, and urinary salts, especially urates, should be maintained in attenuated solution by ample fluids, that no calculi may form. A study of the remedies recommended as uric acid solvents or eliminators of uric acid reveals the data that are composed of two ingredients, viz.: (a), alkali; (b), water. The plan is to alkalanize the blood current, and thus render the uric acid more soluble, and promote its elimination. The administration of an alkali to dissolve uric acid concretions is of limited value. Alkalies and uric acid are solvent *in vitro*, but cannot accomplish the same *in vivo*. The alkalies are ingested with the foods, making soluble urates. After all the ingestion of alkalies in food and fluid cannot alter materially the uric acid. However, the chief virtue lies in the quantity of water ingested at regular intervals during the day. The water is the chief effacious ingredient in uric acid remedies. The water increases the blood volume which in turn produces a powerful stream irrigating the tractus urinarius and maintaining the uric acid in attenuated mechanical suspension.

Pathological physiology indicates that the composition of the blood is essential to health, and that its salts should not be concentrated or abnormal in relation. Pathological physiology accounts for the various reflexes and disordered functions from the irritation of waste laden blood and the damaged functions resulting from nephrolithiasis and cholelithiasis. Pathological physiology dictates that ample fluids at regular intervals, visceral drainage, is the great safeguard against waste laden blood, it is the prophylaxis against cholelithiasis pancreatolithiasis, and nephrolithiasis. By the time that pathological anatomy is demonstrable damaging structural mischief is established, and not infrequently with a lifelong cicatrix. The vast majority of palpitations of the heart cannot be explained on pathological anatomy which has been the tendency of medical progress for the past decade. The nervous system so intimately and profoundly connects the visceral system, so solidly and compactly anastomosis the visceral, that appropriate stimulation administered to one visceral tract tends to induce adjacent visceral tracts to normal functions and consequent ample visceral drainage, e. g., ample volume of fluid in the tractus vascularis enhances the volume and flow of the tractus lymphaticus, and the general glandular system increases its flow, notably the perspiration, from the tractus cutis. Stimulation of the cutaneous surface by massage or salt rubs not only stimulates the cutaneous nerve periphery, but also the circulation and tractus perspiratorius. Stimulation of the tractus muscularis by exercise stimulates and enhances the function of all visceral tracts.

a, *Visceral Drainage by Fluids.*—About eighty per cent. of the body is fluids while about twenty per cent. is solids. All viscera functionate by means of a fluid medium. Fluid forms the chief distributing or circulatory agency of the organism. Liquid is essential for assimilation and metabolism. Water forms the bulk of the softer tissue and is an important factor in the composition of the harder. Fluid permeates or flows through all the bodily structures by osmosis or distinct vessels. Water is a more important agency in relating the individual to environments, than food or air. It flows universally through the organism. It enters mainly through the tractus intestinalis, and escapes through the mucous membranes, skin, and the chief excretory ducts. Water, as related to the skin and lungs in the form of liquid vapor, affords the most important factor in controlling the temperature, necessary for organic existence. Diet consists on the average of six parts liquid to one part dry material. These data explain why Dr. Tanner and others could fast such a length of time on drinking water only. I was a watcher of Dr. Tanner's fasting twenty-five years ago, and wondered at the ease and apparent comfort of his abstaining from food so many weeks. Water is more essential for the growth and sustenance of the vital system than food. The most effective diuretic is water. One of the best laxatives is water. One of the best and most natural stimulants to renal epithelium is sodium chloride (one half to one fourth normal salt solution). The blood contains three fifths of one per cent. of sodium chloride. Water is to the organism what oil is to machinery, it prevents friction. For the purpose of stimulating normal visceral action (the great common visceral functions are peristalsis, absorption, sensation, secretion). I administer eight ounces of one half to one fourth normal salt solution six times daily, two hours apart. (Note—Sodium chloride is contraindicated in parenchymatous nephritis). Three pints (of one half to one fourth normal salt solution efficiently influences the renal secretion for ample visceral drainage. Renal drainage should be sufficient to maintain in mechanical suspension the free insoluble uric acid to prevent calculus formations. Also it should be sufficient to form soluble urate combinations with sodium, potassium, and ammonium salts.

b, *Visceral Drainage by Foods.*—To drain the viscera by appropriate foods and fluids may sound paradoxical, however, the common functions of viscera, peristalsis, absorption, sensation, secretion, are initiated and maintained by fluid and food. Rhythm is one of the grand physical manifestations. The tubes of the body under spiral motion assume a spiral direction. Food stimulates the tractus intestinalis through its sensitive mucosa to continual, rhythmical, spiral motion, and consequent absorption and secretion. The sodium chloride is an especial stimulant to the epithelium of the tractus intestinalis. To drain the tractus intestinalis foods which result in an ample indigestible fæcal residue are requisite to maintain the fundamental peristalsis or rhythm necessary for its life of absorption and secretion. If the tractus intestinalis be stimulated to a maximum by sufficient appropriate food and fluid adjacent visceral tracts from their intimate nervous connection (through the abdominal brain) will share and assume normal function (peristalsis, absorption, secretion, sensation). Rational foods must contain appropriate salts whose bases may form combinations which are soluble as sodium, potassium, and ammonium combined with uric acid and urates to form soluble urates.

The proper foods are: *Cereals,* (oatmeal, wheat,

rice, graham bread); *vegetables* (practically all vegetables, cooked); *albuminoids* (milk, eggs, buttermilk); *meats* (limited as they produce excessive uric acid formations). A mixed diet is therefore most rational.

In order to stimulate the epithelium (sensation) of the tractus intestinalis, urinarius, and genitalis and the endothelium (sensation) of the tractus vascularis and lymphaticus with consequent increase of peristalsis, sensation, absorption, secretion, in the five visceral tracts I employ a part or multiple of an alkaline tablet of the following composition: 1, Cascara sagrada, one fortieth grain; aloes, one third grain; sodium bicarbonate, 1 grain; potassium bicarbonate, one third grain; and magnesium sulphate, 2 grains. This combination is used as follows: One sixth to one tablet (or more as required to move the bowels freely once daily) is placed on the tongue and followed by eight ounces of water (better hot). Also at 10 a.m., 3 p.m., and at bedtime one sixth to one tablet is placed on the tongue and followed by a glassful of any fluid. In the combined treatment one third of the sodium chloride tablet (containing eleven grains) and (one sixth to three) alkaline tablets are placed on the tongue together before each meal and at 10 a.m., 3 p.m., and bedtime, followed by a glass of fluid. The six glasses of fluid may be water, coffee, tea, milk, buttermilk, cream, eggnog, in short a nourishment. This method of treatment furnishes alkaline bases (sodium, potassium, and ammonium) to combine with the free uric acid in the urine, producing perfectly soluble alkaline urates, and materially diminishing the insoluble free uric acid in the urine. Also the alkaline laxative and sodium chloride tablets increase the peristalsis, absorption, secretion, sensation of the tractus intestinalis, urinarius, vascularis, lymphaticus, genitalis, which aids secretions and evacuation.

I have termed the sodium chloride and alkaline laxative tablets the *visceral drainage treatment.* The alkaline and sodium chloride tablets inducing maximum visceral function take the place of the so called mineral waters. I continue this dietetic treatment of fluids and foods for weeks, months, and the results are remarkably successful, especially in pathological physiology of visceral tracts. The urine becomes clarified like spring water and increased in quantity. The tractus intestinalis becomes freely evacuated, regularly, daily. The tractus vascularis maintains an active peristalsis and full volume. The blood is relieved of waste laden and irritating material. The tractus cutis elminates freely, and the skin becomes normal. The appetite increases. The sleep improves. The patient becomes hopeful, natural energy returns. The sewers of the body are well drained and flushed to a maximum.

3. *Habitat.*—Habitat has chiefly relation to the environments of air, exercise, heat, cold, moisture. In habitat one of the principle factors is air. The functions of the lungs are sensation, peristalsis, absorption, and secretion. It is through the great function of respiration that the internal tissue becomes related to the external world. The medium of exchange between the internal tissue and the external world is the blood. The blood, an universal tissue, a common transporter of oxygen and carbonic acid gas, plays a vast rôle in the economy of organism. The red blood corpuscles during their passage through the lung (external respiration), automatically appropriate the oxygen, and after their return (from internal respiration) through the tractus vascularis unburden acquired carbon dioxide into the expiring air. The pathological physiology of respiration is a wide zone and especially in an incipient zone to that of pathological anatomy. Its pathological physiology is frequently amendable to treatment. The respiratory apparatus has methods of its own to correct its pathological physiology as cilia, coughing, and sneezing to evacuate harmful material, as mucous and foreign bodies. The grand remedial agent for pathological physiology of the living is continuous, ample, fresh, cold air.

4. *Avocation.*—The avocation should suit the individual conditions. In numerous cases the labor is unsuitable for the subject. The hours are too long, the work is excessive or severe for the strength. The condition enhances pathological physiology, rather than cures.

5. *Prophylaxis.*—Prophylaxis of disease is the tendency of modern medicine. Pathological physiology teaches the control of disease by means of diet, fluid, habitat, avocation.

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100 STATE STREET.

ÆTIOLOGY OF UTERINE FIBROIDS.*

BY D. H. GRIFFITH, M. D.,

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This paper has to do with only the ætiology of uterine fibroids, so the symptoms, etc., shall not be touched upon, as they are perfectly familiar to every one.

Fibroids are the most frequent tumor met with by gynæcologists. There are a number of points in their history which struck me as peculiar and characteristic. It is the correlation of these facts, and the deductions to be made from the correlation that forms the basis of this theory.

Points in History. 1. Fibroids are not met with until after puberty. They are most often found in patients after the age of twenty-five, and before the age of forty-five. 2. Fibroids are found alike in the spinster and in the matron. Therefore, pregnancy has little effect on their ætiology if it has any, but it may cause a more rapid growth of fibroid or fibroids already present. 3. Fibroids very often cease to grow after the menopause and they often decrease in size after this period. If malignant changes occur then it removes the tumor from the class under discussion at present. Should the tumor become so large that it has established a distinct blood supply of its own, it is probable that it will not be much affected by the menopause except that it will have a slower growth. 4. Fibroids may be said to never occur singly. The tumor is classified according to its location and its attachment, but all fibroids are alike histologically, no matter what their location or attachment may be, and may therefore be said to have the same ætiology. 5. Fibroids are most frequently found in married

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women because of their more frequently undergoing medical examination for one reason or another.

Other Facts to be Considered. 1. The uterus is an organ with a peculiar blood supply. It is supplied by four arteries which divide and subdivide until that portion of the womb which is not made up of muscle tissue and nerves is composed of a highly complex and finely divided blood supply. Because of the function of the womb the blood vessels have to be capable of multiplying and stretching to a remarkable degree. It is hardly possible that the uterine blood vessel walls are as strong as the walls of blood vessels in other parts of the body. 2. The womb, before puberty, is like the life germ in a seed kept in storage before the planting season. It lies dormant until that period approaches in the life of the individual, when she is expected to take up her place in the world as a bearer of children. When the period of puberty has arrived, the womb begins to prepare itself for the reception of the ovum. The womb becomes congested with blood and other changes take place in the preparation that are too well known to require explanation. But the important fact is that the womb becomes congested, and there is a greater stress thrown upon the bloodvessel walls. This process is regularly repeated every twenty-eight days, unless a pregnancy has occurred. 3. The histology of a uterine fibroid is the next fact to be considered. The fibroid is made up of fibrous connective tissue, and often contains scattered fibres or groups of fibres of uterine muscle and nerves. The muscle fibres are evidently ensnared by the growth of the fibroid. The fibrous tissue is similar to any other fibrous or scar tissue found in the body as a result of injury or constant irritation.

Bearing in mind the preceding points, I now ask your attention to the deductions I make from them and the theory I base upon the whole.

During the congestion of the womb, following periodically after the age of puberty, is it not possible that one or more of the tiny bloodvessels have burst owing to its delicate walls being unable to sustain the increased pressure thrown upon them?

What occurs when a bloodvessel breaks in any other part of the body? It allows blood to pour out into the surrounding tissues until the pressure so produced is sufficient to stop the bleeding. It seems to be a law of Nature that what is once broken can never be repaired in such a way that it is exactly the same as before the accident. Why cannot the same be applied to the burst bloodvessel and the resulting clot? The usual steps of reparative processes must take place here, and the tiny clot is replaced by a still smaller bit of fibrous tissue. This microscopic bit of fibrous tissue repairs fully the burst bloodvessel, but it also leaves behind something that was not present before the break took place.

Twenty-eight days later the womb again has to go through the same changes relative to the reception of the ovum. Bearing in mind what these changes are, I ask the question, "What will be the effect of the little foreign body (for it is a foreign body as it is not normally found in the womb) left behind by the previous menstrual period?" Will it not act as any other foreign body would? Will not the womb, by forming more fibrous tissue around it, attempt to protect itself from the irritating object? The necessary process for enclosing the little seedling is gone through with and Nature makes the mistake which will later defeat her plans, for the little body is still there and increased in size.

Is it not possible that this process is gone through with with each little ruptured bloodvessel and its subsequent clot? Is it not possible that the future fibroid, with all its accompanying trouble to woman, is formed by just such a process as we have described? Therefore I place before you for your consideration and judgment the following theory:

Uterine fibroids have their beginning in the bursting of one of the small, delicately walled bloodvessels, allowing blood to be poured out into the uterine structures. The blood subsequently clots and then goes through all the various stages of repair, leaving behind a small, probably microscopic, bit of fibrous or scar tissue. This small bit of scar tissue acts as an irritant foreign body, during subsequent menstrual periods, and as such it gradually acquires more and more fibrous tissues, until in an indefinite period the fibroid is large enough to be diagnosticated and probably removed. When the woman reaches the menopause, the womb no longer becomes engorged, and so the blood supply of the various fibroids is reduced to a minimum, and they no longer get their periodic increase in growth.

It is possible that their often subsequent decrease in size is due, not to a resorption of the fibroid, but to a contraction of the fibrous tissue to the smallest amount of space possible, just as any other piece of inflammatory fibrous tissue will contract. The contraction may also produce changes which usually follow when a part is not supplied with the necessary amount of blood.

The pathologists are the ones to whom we have to look for the researches necessary to the establishment or rejection of this theory. It will be interesting to watch developments, and see just how much truth there may be in this theory. I am sorry that I am so placed that it is not possible for me to make research along these lines. But having started the machinery, I shall anxiously await the opinions and the researches of more experienced and competent observers.

A CASE OF WESTPHAL'S PSEUDOSCLEROSIS.

By F. T. Simpson, M. D.,
Hartford, Conn.,
Visiting Physician to the Hartford Hospital.

The following case seems to the writer to present the clinical features of Westphal's pseudosclerosis, and is recorded as an interesting case from a diagnostic point of view:

Anna L., twenty-one years old, of American ancestry, is the oldest of three sisters. Her mother and father were cousins. One uncle and one aunt have been insane. Her father died at fifty-nine of heart disease, her mother and two younger sisters are well.

Previous History.—Anna went to school until fifteen years old, had no special sicknesses, except bronchitis three years ago. Five or six years ago she began to lose her grip, as her mother put it, soon after the death of her father. She became less active in her mental processes, her statements were not accurate, her memory was impaired, she was less talkative, more irritable, she was slow mentally and physically. She suffered from severe headaches, and complained of dizziness.

She left her home in New Jersey and went on a visit to an uncle in Connecticut, where she stayed some time, and was much improved. Two years ago an aggravation of her condition occurred. There was a renewal of headache and dizziness, and now an unsteadiness of gait developed. A year ago, the arms became involved. She could not guide her hands as perfectly as she was wont to. Her speech, too, became affected. There was a certain indistinctness and thickness of articulation. She came again to Connecticut, and seemed to improve somewhat.

Present State.—May 9, 1906. Patient is of medium size, light complexion. Skin has a muddy look, and is slightly broken out. Expression is vacant and apathetic. She appears like a feeble minded person, is indifferent regarding her condition, comes to the physician because her mother brings her. She thinks she is all right, has lost her headache, can walk a mile, has friends and goes to see them, reads books, and is satisfied with her condition and environment. Questioning shows her unable to give the name of a single book or story, or to recall the subject of any of the pictures she had looked at the day before (Sunday). Her mother states in private that she has no friends, never goes out to call, and can scarcely walk two blocks. Her speech is slow and thick, not scanning. There is no nystagmus. The pupils are even and react to light. The tongue does not deviate, facial innervation is symmetrical. There is no intention tremor of the hands, but ataxia is evident, and after a time they become a little jerky. The knee reflex is markedly increased. There is no ankle clonus, but she says there is sometimes a jerking of the muscles in the legs. Her gait is markedly affected, a pronounced ataxia, and evident weakness of the leg muscles, going round my office three times is difficult and tiresome to her. Her grip is about normal. As regards sensory symptoms, she denies any pain or paræsthesiæ. There is no hemianopsia, but there is an hypæsthesia, and a hypalgesia more marked on left side of body.

One gets the impression of a serious generalized, progressive affection in this case without hope of recovery.

To sum up: Of the features of pseudosclerosis of Westphal tabulated by White from Rebizzi there are present in this case: 1. Psychoses in the antecedents. 2. In the initial period slight mental deterioration, apathy, followed by irritability and resulting in dementia. 3. Remissions in the progressive course of the disease. 4. Vertigo and headaches. 5. Disturbance of speech. 6. Slowness of muscular movements. 7. Spastic paresis, transitory then lasting. 8. Increased tendon reflex. 9. Tremor and ataxia of upper extremities. 10. General weakness, walking uncertain. 11. Hypæsthesia.

Pseudosclerosis is differentiated from diffuse sclerosis by the fact that its symptoms, though of the same character, are fewer in number and less pronounced. There are no eye symptoms, and cranial nerves are seldom involved. Speech is less disturbed, paralysis is of milder character, sphincters are rarely involved. The outcome is the same in both cases. The other diseases which occurred to the writer for differentiation were paralytic dementia and the hereditary ataxia, but when duly considered, they have to be abandoned as less appropriate to the present case. This disease has been considered a form of hysteria, but this patient presented no hysterical stigmata, and at the examination there was nothing to suggest hysteria.

Our Readers' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LIV.—How do you treat spasmodic croup? (Closed September 15, 1906.)

LV.—How do you treat acute articular rheumatism? (Answers due not later than October 15, 1906.)

LVI.—How do you treat sciatica? (Answers due not later than November 15, 1906.)

Whoever answers one of these questions in the manner most satisfactory to the editors and their advisors will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short; if practicable, no one answer to contain more than six hundred words.*

All persons will be entitled to compete under the regulations laid down by the postal authorities. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL.

The prize of $25 for the best essay submitted in answer to question LIII, has been awarded to Dr. L. S. Oppenheimer, of Tampa, Fla., whose article appears below.

PRIZE QUESTION NO. LIII.

THE TREATMENT OF BURNS.

By L. S. OPPENHEIMER, M. D.,
Tampa, Fla.

The cardinal prerequisite in the treatment of burns is to relieve pain and shock. If the injury is not too extensive nor deep this will be accomplished by the dressing. A burn is practically an aseptic wound; hence, if friends have not infected it before the arrival of the physician he will apply the dressing with a view to more or less permanency.

The burned area is first thoroughly painted with a one per cent. (5 grains to the ounce) solution of picric acid, applied with a cotton swab, gauze mop, clean feather, or soft brush; three or four thicknesses of gauze are snugly applied and held lightly in place with a gauze bandage. Or, in the milder cases, the bandage may be applied directly to the skin. These are saturated with the picric acid solution. The pain is controlled at once in superficial burns, and is materially relieved in the more profound ones. Healing takes place within forty-eight hours in most of the former cases, no further dressing being required.

If the pain returns or the parts feel very uncomfortable, the dressing is kept moistened with a 0.5 per cent. solution. No other dressing in my experience alleviates and heals so rapidly and universally. I advise families to keep a one per cent. picric acid solution and gauze bandages always on hand. In the various electric power houses and factories where burns are common, over which I have surgical supervision, I have installed small emergency cases in each of which are two forty grain picric acid powders with

directions how to use. The bed clothing and clothes should be protected against the intense yellow stain; ammonia removes it from the hands.

It is not good practice to open blebs or blisters early; it not only invites infection, but healing is retarded. In some cases where the burn is slight and the blister thin, an early puncture allows the epidermis to adhere to the cutis similar to a skin graft. Frequent changing of dressings is inadvisable, except for apparent reasons.

If any oily or pasty substances have been applied gently wash away what you can with benzin and 1 to 2,000 bichloride solution, but saturate your picric acid dressings before applying.

If picric acid is not at hand nor promptly attainable the attendant will act on his olden time "exclude the air" or home treatment hypothesis, and cover with linseed oil and lime water, castor oil and carbolic acid, flour, ice water, fresh cream, solution of sodium bicarbonate, egg albumen, or alum curd (a lump of alum beaten up with white of egg). When an ointment is indicated one of the following will be found excellent:

℞ Ichthyol, ... ʒj;
Boric acid, ... ʒss;
Alum, ... gr. x;
Lanolin, ... ʒj;
Petrolatum, ... ad ℥j.
M. Apply directly to surface.

Or

℞ Bism. subnit., ... ʒj;
Menthol, ... gr. ij;
Salicylic acid, ... gr. ij;
Boric acid, ... gr. xx;
Simple ointment..... ad ℥j.
M.

If the pain or shock is great, or the burn deep or extensive, do not wait to dress the wound; administer a hypodermic injection of morphine or diacethylmorphine hydrochloride (heroin) (I use the latter) with strychnine or adrenalin (I prefer the latter). Remember many of these cases die from pain and shock without evincing external manifestations of their magnitude. Death is not necessarily due to the extent of surface involved *per se*. Relieve shock and pain promptly and heroically. In relieving small children of their pain you will not lose sight of the danger of opiates, but you must relieve.

To hasten the separation of necrotic tissue, warm, moist, saline, antiseptic, slightly astringent dressings are applied for a few days; then dry dressings are used as indicated, the moist dressing being reapplied as required. In removing adherent dressings great patience and care should be exercised, especially if the surfaces bleed easily. Moisten with hot 1 to 2,000 bichloride of mercury solution, then drop hydrogen peroxide on the adherent portions.

If the wounds become septic, or evidence of sepsis develops, treat the conditions exactly as you do these from other causes. Control the saprophytic or coccic foci by dissecting away necrotic structures as far as you can, and applying hot antiseptic astringent dressings, and giving quinine, strychnine, and purgatives.

A parting word: Do not pin your faith on Carron oil.

Dr. Edmund Newell Huff, of Englewood, N. J., remarks:

The indications for treatment of a burn are: First, to relieve pain and shock, due to condition present; secondly, to guard against complications involving the internal organs, especially the kidneys; thirdly, to counteract exhaustion following, as result of suppuration and sloughing of tissues involved.

Burns of the first degree, meaning those with hyperæmia, swelling, redness, no destruction of tissue, require simple treatment only. Compresses of saturated solution of sodium bicarbonate, picric acid, five per cent., dusting powders of alkaline nature, stearate of zinc. Unguents, as petrolatum plain, or with boric acid five or ten per cent., sodium bicarbonate five to ten per cent., or carbolized, fifteen to thirty grains to the ounce of petrolatum.

Burns of second degree. The symptoms are as in the first degree, intensified, plus inflammation of deeper skin tissues, resulting in vesicles, blebs, or bullæ containing an excoriating serum. Shock is seldom of a serious nature, unless the area involved is extensive. First wash the burned area with warm boric acid solution (saturated solution), or bichloride of mercury, 1 to 5,000 or 10,000. Then puncture blebs with an aseptic needle. After doing this dress with cotton or gauze saturated with picric acid solution, five per cent., or saturated solution of boric acid. At each change of dressing follow the same procedure. Remember to render the area aseptic and keep it so. If inflammation is of intense degree it may be well to use ichthyol ten per cent., or balsam of Peru ten per cent. Later bismuth subnitrate ʒj-℥j, or thymol iodide, ten per cent., in petrolatum.

Burns of the third degree. Those going on to production of slough or eschar, when deeper tissues are involved, with marked constitutional symptoms varying as to extent and depth of burn. Carefully remove clothing from the burned part, trim away dead tissues, all to be done under surgical cleanliness. Cleanse as in second degree with warm solution of boric acid or bichloride of mercury, dress with gauze saturated in a solution of boric acid, normal salt solution, or picric acid, five per cent., preference being for picric acid solution, as it relieves pain, is antiseptic, and causes no symptoms from absorption unless used for a long period, in which case one of the others should be used. If the burned surface is large it may be necessary and advisable to suspend patient in a warm sodium bicarbonate bath, and keep him so until shock is lessened. Treat shock in usual way, keep body warm with hot water bottles; warm, stimulating drinks; coffee, ammonia, strychnine $^1/_{60}$ to $^1/_{30}$ gr. subcutaneously. Digitalis should be used for the heart. In some cases subcutaneous infusion of normal salt solution is useful. At each dressing remove carefully all dead or sloughing tissue, especially dry tissue forming at junction of normal skin and burned area, where the skin is sending out shoots to form new skin. Always remember to treat surgically and antiseptically. Change dressings as often as necessary, depending to some degree upon presence or absence of exu-

date, staining dressings, or odor from same. Where the burn is extensive in the extremities, and likely to cause deformities, apply splints to parts. If a limb seems useless, circulation destroyed, or muscles destroyed, it is better to amputate early, thus saving much exhaustion from suppuration or sloughing of part.

After a time, varying from days to weeks, we will have a clean surface, granulating, devoid of skin, then agents should be used as far as possible which are nonirritating and antiseptic. To aid granulations and healing after the first stage is over it will probably be necessary to use iodoform five per cent., or unguentum zinci oxidi, balsam of Peru five to ten per cent., or thymol iodide five per cent. in petrolatum. A useful prescription is:

℞ Silver nitrate, ...gr. v;
Balsam Peru, ...ʒiv;
Petrolatum, or } Simple ointment, } .....ad ℥iv.
Sig.: Apply on gauze.

For excessive granulations use the silver nitrate stick, or some astringent solution.

When the burned area is clean and granulation occurring, if the area is large or deformity apt to occur it is advisable to skin graft, according to the approved methods.

Always watch carefully for renal, pulmonary, cerebral, or septic symptoms, and treat as they arise. Order good nourishment and stimulate when necessary, especially where exhaustion is present. Use plenty of water, keep bowels regulated, and all of the functions active.

Dr. R. W. Green, of La Aurora, Pueblo, Mexico, writes:

The treatment of burns will vary somewhat according to their degree, extent of body involved, and their locality. If the burn is very extensive shock and pain are often alarming, and hence demand our attention first.

It is in the superficial burns (especially when they cover a large area) that shock and pain are the greatest. In those of a deeper degree, the nerve endings are destroyed, hence the pain is not so great.

In severe burns when shock and pain are great I first give a hypodermic injection of:

℞ Morphine sulphate, ...¼ grain;
Atropine sulphate, ...1-100 grain.

This is repeated in a half hour if shock and pain is still present. The clothing is now carefully removed, in severe cases by cutting with scissors, care being taken to not unduly expose the patient, who is now put to bed, and if shock is still present it is further combated by wrapping the patient in warm blankets, placing hot water bags about him, and giving him hot water internally, or with brandy if it seems to be indicated. The burn is now rendered as aseptic as possible, spraying upon the parts an antiseptic fluid by means of the ordinary hand atomizer. All devitalized tissue is removed (under antiseptic precautions) by means of a pair of tissue forceps and scissors. Blisters are opened with a needle and drained, but care is taken to not remove the whole cutis forming the blister, as this always renders the part more painful.

After the field is rendered aseptic I take a piece of muslin somewhat larger than the burned area and spread upon it a layer of the following ointment:

℞ Zinc oxide, } Boric acid, } .....āā ʒss;
Petrolatum, ...q. s. ℥j.

Then over the layer of ointment I pour the official Carron oil, and bandage carefully. When this dressing is removed, the patient does not complain, and we do not tear down any granulations after they have once formed, neither do we have such troublesome hæmorrhages. No dressing should be applied which will dry out soon and become adherent. Monsell's solution is used to check hæmorrhage. This is applied by means of an applicator (a tooth pick will do) upon cotton. Sometimes an artery needs ligation.

The part is cleansed and dressed as described once a day until discharged. I keep the patient easy by means of the morphine injections, and I have never used more than three quarter grain of the drug in twenty-four hours, even in a burn evolving one third of the body, and often not more than one half grain is not exceeded. The dose can usually be lessened gradually after four or five days, and within ten or twelve days all is usually withdrawn. Liquid diet is ordered for the first four or five days in these severe cases, gradually add to the dietary.

In the minor burns, whether deep or not, the part is first rendered aseptic as I have stated, and then pure carbolic acid is applied. This soon causes all pain to cease, and renders the burn doubly aseptic. I have applied the pure acid in a second degree burn involving nearly one quarter of the body, arm, chest, and lower abdomen. For fifteen or twenty seconds after the application of the acid the patient will complain, but within two or three minutes all pain disappears. I have never seen symptoms of carbolic acid poisoning. Now the burn is ready to be dressed with the Carron oil, zinc, and boric ointment, as described before. This dressing is renewed each day, being preceded each time by a liberal use of the antiseptic spray. In burns deeper than the true skin, skin grafting is often useful.

Should redundant granulation form, the same is repressed by applying silver nitrate. Contraction during cicatrization must be prevented as far as possible by means of extension apparatus, passive movements, splints, etc. In burns of mucous surfaces—mouth, pharynx, larynx, etc.—I first clean the parts by means of an antiseptic spray. Then another spray is substituted which contains adrenalin 1 to 4,000, which treatment is repeated every two or three hours, according to the severity of the case. Burns of the eyes are first rendered clean by the use of the antiseptic spray applied by means of a medicine dropper. Then the adrenalin solution is instilled. This repeated, until pain ceases, or a few drops of a four per cent. cocaine solution may be used. A little of the zinc boric ointment is placed in each eye, and a piece of the delicate film which lines the egg shell is placed between lids and eye-

ball to keep them from adhering. Cold gauze compresses are then placed over the lids, and the eyes are bandaged. In deep burns of the eyes the pupils are kept dilated with a one per cent. solution of atropine, to keep the iris from adhering to the lens.

Dr. George P. Dale, of Dayton, Ohio, states:

The treatment of burns, whether of the first, second, or third degree, can be grouped under three main heads: I, Relief of pain; II, absolute cleanliness; III, promotion of healing.

I. Pain. The initial pain of a burn is usually the most severe, due to shock to the nervous system and to the local irritation of the burn itself. This must be relieved at once by an hypodermic injection of morphine, sufficiently large, depending upon the extent of the burn, but in most adults one half grain repeated in one half hour if necessary can be given with safety. The initial dose of morphine can be followed, if the case demands it, by general anæsthesia by chloroform or ether during the first dressing. Subsequently morphine may be given at irregular intervals, but usually after the first shock most patients can be relieved by:

℞ Chloral hydrate, ... gr. x;
Sodium bromide, ... gr. xx to xxx.

given every three hours in cold water as needed. Occasionally there will be cases in which the daily dressing will be so painful as to require a general anæsthetic, but these are the exception, and a hypodermic injection of morphine given fifteen minutes previous to the dressing will suffice.

II. Absolute Cleanliness. An effective local application must relieve local irritation, and at the same time help to prevent sepsis. Moist applications usually accomplish these results the best. Of these, the solution of the acetate of aluminum has served me well. Its proportions are:

℞ Lead acetate, ... ℥ss;
Water, ... q. s.

Or

℞ Aluminum sulphate, ... ʒj;
Water, ... q. s.

Prepare the two solutions separately and mix. Allow the resulting mixture to settle and pour off the aluminum solution. A saturated solution of boracic acid may also be used. I have also used with good results a solution of the bichloride of mercury 1 : 3000 or 1 : 2000.

These solutions are best used lukewarm, and good results are to be obtained only by keeping the dressings constantly moist, which can be done by not removing the dressing from the burn, but wetting it from the outside.

A daily cleansing with a fifty per cent. solution of hydrogen peroxide will aid in the removal of any secretion, and is to be followed by reapplication of the moist dressing. The old fashioned Carron oil, while it will relieve irritation, I believe to be too unclean an application, and will more often cause suppuration rather than prevent it. All sloughing skin must be removed at the proper time to promote cleanliness of the underlying tissues.

III. Promotion of Healing. When the granulating surfaces are fairly healthy a slightly astringent ointment may be used. An efficient preparation is as follows:

℞ Zinc oxide, ... ʒj;
Petrolatum (slightly carbolized), ... q. s. ad ℥j.

This will contain sufficient carbolic acid to relieve the pain of granulation. Another effective ointment is:

℞ Ichthyol, ... ʒi;
Petrolatum, } ..... āā ʒiv.
Zinc oxide, }

These ointments must be daily applied after a thorough cleansing with fifty per cent. solution of hydrogen peroxide. When the formation of new skin is well started a simple antiseptic dusting powder may be substituted for the ointment. Excessive granulations must be kept burned down with a silver nitrate stick. Where the burn covers a large continuous area skin grafting may be necessary, and where they involve joint areas splints must be used to prevent contractures.

General Treatment. In the early stages stimulation by the use of strychnine, $^1/_{30}$ or $^1/_{60}$ grain every three or four hours, may be given, depending upon the amount of shock, and hypodermically if needed. At all times attention must be given to regular action of the bowels and kidneys. Frequent examinations of the urine should be made to be on the lookout for kidney congestion. The food should be simple, but nourishing, usually given in small quantities, often repeated, especially in the early stages. Later general tonics, containing from one to three grains of iron to the dose, are indicated, a good form being some solution or syrup of the hypophosphites.

Dr. Faxton E. Gardner, of New York, observes:

Two elements dominate the prognosis of burns: Immediately after the accident, extension; later, infection. From a practical standpoint the latter factor is the all important one to consider, because the only one under our control. We cannot always save people with extensive burns; but we are guilty if, in a burn not extensive enough to prove rapidly fatal (and the majority of cases we have to treat belong to that class), we let infection set in and double or treble the time necessary for a complete recovery. Just as the *per primam* of surgical wounds is the object of every surgeon, the *per primam* of burns must be the aim of all practitioners, and both are obtained by the same method: asepsis. Surprising it is to note how long so simple an idea has lacked recognition, and how slowly the treatment of burns has followed modern progress. Antiseptic methods had long held sway in general surgery when physicians still applied on burns special topics without microbicidal value; and later when the necessity of cleanliness began to be recognized, antiseptic applications were resorted to, but the fundamental condition of all asepsis, namely, a thorough preliminary cleaning, was often omitted. And yet when we think of the manifold chances of infection of a burn, the dirty clothes of

workingmen (the most ordinary victims), the doubtfully clean contacts which threaten the burnt surface during the disorder of an accident, the innumerable microbes which inhabit the integument and which the temporary rise of temperature does not kill all those which remain in the sudoriparous glands whence perspiration pours them out on the cuticle; all that infective material ready to develop at the first opportunity; and on the other hand, the favorable ground afforded them by the burnt zone poorly defended by anatomical elements of impaired vitality, we realize keenly the imperative necessity of asepsis.

Let us therefore, as a first treatment for all cases, disinfect thoroughly, but gently, not to make the damage worse. This requires often long and painful manipulations; general anæsthesia is indispensable in children and very useful in adults in extensive cases. Tincture of green soap, warm water, and sterile gauze wipes are the only requisites; a brush may be used only (and cautiously) on parts still protected by an unbroken cuticle. Begin the cleaning by the surrounding healthy skin, so that when we shall clean the burn itself and especially its borders (a zone requiring the greatest care) we shall not be exposed to drive in septic matter from the outside. Flush abundantly with alcohol or ether all fatty skins, all cutaneous folds where a profuse perspiration impregnates and softens the epidermis. Then rinse with sterilized water or normal salt or saturated boric acid solution. Let us apply such a treatment to all burns, however insignificant they may look, and do not let us be tempted by laziness in cases of superficial and limited burns of the first or second degrees. A local infection, as we have seen it recently, may always take place, notwithstanding the apparent continuity of the cuticle; it may not be serious, it may simply mean a delay of a few days in complete cicatrization, but it is avoidable, and must be avoided. If there are some blisters, we may keep their epithelial cover as a protection if the epidermis is unbroken and if a good disinfection has been obtained; but their liquid contents is a hindrance to speedy epidermization, and we shall puncture them with a sterilized needle to let the latter escape. It seems, though, that the moisture kept by the cover exposes to maceration of the young epithelial cells which grow underneath it, and we may claim it is better always to excise the covering of blisters flush to the adjacent skin. In cases of broken blisters, no doubt that such an excision is necessary. It insures better cleanliness, because microbes find in those epithelial débris a safe harbor, and it does not delay healing.

Infection will always be present in burns dating back some time if they have not been under competent medical care. Avoid here to infect any part that may still remain uninfected; do not move the gauze wipe from one end of the burn to the other, clean inch by inch, and never rub pus, so as not to have it penetrate in the glands of the skin. Excise carefully all epidermic fragments.

An ideal burn dressing must meet the following requirements: Keep the wound sterile, relieve the pain permanently, and insure as quick an epidermization as possible. The very numerous substances that have been used may be classified into three groups: Solutions, oily mixtures and fatty ointments, semidry and dry dressings. As a rule, the latter variety favors epidermization, while those of the second and still more those of the first delay it. Therefore, we cannot use solutions of strong antiseptics such as mercuric chloride or potassium permanganate; besides being solutions, they have a rodent action on new epithelial cells; salicylic acid, carbolic acid, and all of its derivatives have even a real keratolytic influence. The only exception in this class is picric acid; a saturated solution in water is analgetic, antiseptic, and has on the tissues a hardening action similar to that it has on histological preparations. All the burnt epithelium becomes yellow and hard, and forms a protective layer under which epithelium neoformation is effected under the best conditions. Personally, we derived the greatest benefit from the picric acid treatment applied on an extensive burn of the right forearm; the only inconvenience is the long persistent yellow coloration it gives to nails.

We do not find any advantage in the classical and often used mixture of lime water and oil, whether cotton, olive, or even linseed. It is true, those mixtures are harmless and can be sterilized, but they are not antiseptic, and therefore cannot be applied on infected burns; and why apply anything but dry sterile gauze on a sterile lesion? The unfavorable effect of oily and fatty applications limits their use to cases in which a dry dressing cannot be employed, that is, to infected superficial burns and to deep lesions before the fall of the eschar. A good application is the following:

℞ Boric acid, ...ʒi;
Antipyrine, ...ʒi;
Iodoform, ...gr. v to x;
Woolfat or petrolatum, ...℥i.

This ointment is sterilized by boiling and is spread on sterilized gauze. It never sticks to the burnt surface. It is a very good treatment for sunburn.

When a thorough asepsis has been obtained by the first cleaning, the best dressing in all respects is dry sterile gauze changed as seldom as possible; and the more thorough the initial asepsis, the longer may be the intervals between changes. This fulfils the three conditions we have mentioned before. It keeps sterile, and is analgetic, because the sterile condition of a burn is the most powerful analgetic; a sterile burn protected against all exposure is painless. And the absence of all foreign substances and the unfrequent disturbances place the epidermis in the most favorable conditions to repair its injuries. Powdered boric acid is a nonirritating antiseptic. Bismuth subnitrate and zinc oxide are neutral, too, but their antiseptic power is weak. Iodoform has remarkable antiseptic, deodorizing, and cicatrizing properties and at a time it has been loudly praised, but it exposes to absorption if the doses are too high or if the patient has a peculiar susceptibility.

Some substances may form a protective coating under which epidermization will take place unhampered; some are even keratoplastic. The best known of these are balsam of Peru, styrax, and particularly ichthyol; this last is employed in forty per cent. solution in water, either alone or mixed with bismuth subnitrate; in drying it leaves a firmly adherent coating. The application of ichthyol causes a burning pain. When a suppurating burn has become clean, nothing promotes and hastens epidermization as much as frequent changes in the dressings used; silver nitrate makes the proliferation more regular. Epidermic grafting may become necessary; the formation of the scar must be watched very closely.

Active surgical interference is resorted to with great advantage in some cases of burns caused by live wires. The latter sometimes cut deep into the tissues just as the knife of a cautery. The resulting burn is wedge shaped, both edges being lined by an eschar. Such burns will heal exceedingly slowly. When there is no infection, the best, if feasible, is to excise both edges and suture directly the raw surfaces.

Extensive burns are accompanied by shock, and by a special poisoning by toxines, produced by blood alterations and by cellular destruction. There is an intense excitation of the cutaneous extremities of the burnt region; it has been said of those patients that they die of pain. Hence the indications: Fight the pain which kills by continuous baths at 100° to 104°, or by wrapping in hot, sterile cotton wool; fight the shock by injections of caffeine, ether, or camphor oil; increase elimination by the use of diuretics, milk diet, and lukewarm baths; make up for the deficiency in oxygen of the blood by oxygen inhalations; increase vascular tension by injection of physiological salt solution; and avoid morphine and chloral even if there is an intense nervous excitation, because those drugs would aggravate the existing hypothermia.

Such are the resources at our disposal in a fight against lesions unfortunately too often beyond the reach of our art.

(*To be continued.*)

Therapeutical Notes.

To Relieve Pruritus.—Besnier recommends a one half per cent. solution of phenic acid in starch glycerole to relieve itching.—*Journal de médecine*, May 6, 1906.

Hypodermic Injection for Constipation:

℞ Apocodeinæ hydrochloridi, ...0.50 gramme;
Aquæ destillatæ, ...50 grammes.
Inject 2 c.c. (mxxx) daily.

Combemale, in *Le Progrès médical*, May 5th.

Supplementary Action of the Intestines to the Kidneys.—Javal and Adler reported to the Société de biologie (*Le Progrès médical*, May 12, 1906) the result of observations they had made upon a patient suffering with anasarca from tuberculous nephritis, and also intestinal tuberculosis, who had obstinate diarrhœa. They had found a greater proportion of chlorides in the fæcal discharges than in the urine. The examinations of diarrhœal stools of several patients from this point of view showed that the fæces diluted by purgation or by pathological diarrhœa, uniformly increased their chlorides in proportion to the dilution. In fæces containing eighty to ninety per cent. of water, the salts amounted to two grammes; and those of ninety to ninety-six per cent. contained two to three grammes of chlorides. Purgatives increase the loss of chlorides, but still to a less extent than certain pathological diarrhœas.

Scopolamine and Veratrum in Puerperal Eclampsia.—Two successful cases are reported by Albert Laurendeau in an article in *le Journal de médecine et de chirurgie*, Montreal, April 17, 1906, in which the simultaneous injection of scopolamine and of fluid extract of veratrum were used with remarkably good effect. He urges a further trial of this method, and advises the obstetrician when he is called to a pregnant patient suffering with eclampsia to at once give a hypodermic injection of one fiftieth of a grain of scopolamine hydrobromate with one fifth of a grain of morphine, and follow it immediately with another of fluid extract of veratrum viride. Make the injections deeply into the tissues of the thighs. Wait for an hour and a half or longer; then if the paroxysms are renewed repeat the injections in the same doses. Finally, an hour and a half after the second injections, if the paroxysms are not stopped, the scopolamine-morphine injection may be given again, and one of ten drops of veratrum viride. This would make a total of three fiftieths of a grain of scopolamine and three fifths of a grain of morphine and forty drops of veratrum viride; beyond this it is not considered safe to go. The treatment is based upon the theory that two processes concur in the production of the attack of eclampsia: (1) The intoxication of the system, and (2) the hypertension in the bloodvessels. The combination of these two acting upon the nerve centres produces a state of hyperexcitation, which is manifested by the intermittent and involuntary motor discharges. The condition is analogous to an overcharged Leyden jar when the electricity suddenly breaks all resistance and rushes out at hazard and without control. Scopolamine-morphine injections and the veratrum correspond admirably to these two indications, the first calms the nerve centres and the second lowers the vascular tension.

The Action of Arsenic and of Arsenical Sodium Chloride Waters Upon Diabetes.—H. Verdalle, of Bordeaux (*Archives générales de médecine*, March, 1906), presents the following conclusions from his numerous observations: (1) In diabetes, generally speaking, the treatment by arsenical sodium chloride waters is very efficacious; it is, however, especially indicated in those cases in which arsenical treatment has already been used with success, and especially in the hyperhepatic form of diabetes. That is to say, in the variety described by Gilbert, which is characterized by the excess of function of the liver (glycosuria and

azoturia). (2) The treatment with arsenical waters acts both upon the glycosuria, which it always decreases, and often causes to completely disappear and upon the azoturia, which it diminishes in a parallel manner. (3) This treatment tends to regulate the proportion of urea and to bring it back to the normal, reducing it when excessive, and on the contrary, raising it when below the average. The treatment, therefore, can be said to regulate nutrition. (4) The improvement in the general health is remarkable and sometimes astonishing. (5) The formal indication for the arsenicated waters is the increased functioning of the hepatic cells. Alkaline waters, on the contrary, are indicated where this functioning is insufficient. The arsenical waters, therefore, succeed in many cases where the alkaline waters fail and are even injurious. (6) No injurious effects have been observed from the arsenical treatment when properly supervised. (7) It is beneficial in every form of diabetes. Although specially indicated in the hyperhepatic form, it also gives good results in other forms. The reconstituent influence of altitude, aeration, hydropathic procedures, etc., may also be utilized to aid the arsenical treatment. Albuminuria is not a contraindication, except in cases of genuine nephritis. When it is simply connected with the diabetes and is slight and temporary, it yields to the same treatment as the diabetes, and at the same time.—*Le Progrès médical*, May 12, 1906.

Ointment for Mumps.—Ragozzi recommends this combination:

℞ Guaiacolis, ...1 gramme (or gr. xv);
Adipis lanæ, } .....āā 10 grammes (or ʒiiss).
Petrolati, }

Ft. ungt. Apply night and morning. Cover with absorbent cotton and gutta percha tissue with slight compression.

Treatment of Syphilitic Paraplegia.—In a systematic clinical consideration of this subject Dr. Mauriel Perrin and Dr. Jacques Parisot (*Revue médicale de l'Est*, April 1, 1906) direct attention to the importance of an early ætiological diagnosis, and in cases where the original infection is denied or has been forgotten they recommend that the patient shall receive the benefit of any doubt, and shall be put upon a regular mercurial treatment. For syphilitic paraplegia, they insist that the treatment shall be early, intensive, and prolonged. It should be early, because syphilitic lesions spread rapidly in the central nervous system. It is especially important in this condition, because the destruction is irremediable, there is no tendency to spontaneous repair in the medullary centres. A delay of a few months or weeks, or even a few days, is prejudicial to the patient's interests. Even in those who are promptly treated, there is generally observed some defect or some impairment of gait, spasmodic contractions of muscles, intestinal atony, abolition of reflexes, or something of the kind, even when the treatment has been instituted early. But the treatment must not only be prompt, it must be intensive and prolonged. Mercury is less effective when given by the mouth, but the iodides may be administered in this way as an adjuvant to the mercurial treatment by inunction or by injections. For the latter, we may use a soluble salt, like the corrosive chloride, or an insoluble salt, like calomel. Gray oil is also employed. A favorite solution is:

℞ Hydrargyri biniodidi,.....0.20 gramme (or gr. iii);
Sodii iodidi, ...0.20 gramme, (or gr. iii);
Aquæ destillatæ, ...10 cc. (or ʒiiss).

One cubic centimetre (mxv.) contains two centigrammes (gr. $^1/_3$) of biniodide of mercury. Of this, one to five centigrammes daily, or every second day, are injected deeply into the muscular tissue in the upper part of the buttocks, the patient being at the time lying on a couch, face downwards. When the patient tolerates it well, the dose is slightly increased. The injections are not to be indefinitely continued, but at the end of three or four weeks they can be discontinued in favor of gray oil. The insoluble injections of gray oil or calomel are given once a week as the rule. For several years the authors used the thymol acetate of mercury, according to the formula of Spillmann, with very good results, but at present they more frequently use the gray oil and calomel, which are more convenient and are more easily obtained in a condition of purity. The calomel is used independent in vaseline, or syrup, in ten or twenty per cent. mixture. Of this, a quantity equivalent to five or ten centigrammes of the mercurial salt is deposited in the tissues with a Pravaz syringe. Calomel is the most prompt and efficient, and is therefore the best remedy to employ in the incipient attack. Unfortunately, the injections are often painful, and if concentrated, are sometimes attended by toxic phenomena and local complications. They should, therefore, be resected for cases in which it is necessary to act very rapidly. Gray oil is less active and less often is followed by accidents. A forty per cent. solution is employed, of which eight or ten drops, in one or two injections, are introduced as before, except that a more carefully graduated syringe is required to avoid an excess of dose. It is the best means for continuing the mercurial influence when it has to be maintained for a long period. During this treatment care should be given to secure the best hygienic conditions for the patient, and especially to preserve the greatest cleanliness of the mouth and teeth. When it is desired to give iodine at the same time it is better to give the tincture of iodine or iodized peptones in place of the potassium salt. Injections of iodized oil have been employed with good results in Spillmann's clinic. Since the syphilis which attacks the central nervous system is a grave form of the disease, the treatment should not only be prompt and active, but it should be continued with intervals for three or four years. The first period should continue until the symptoms have disappeared. Then after a short intermission of three or four weeks the treatment should be resumed and the patient kept continuously under observation in order to safeguard him from the return of the symptoms in the future. The treatment of syphilis at the beginning is too frequently of an insignificant character and very incomplete, and it is in such neglected cases that syphilis of the nervous system is likely to develop.

For Mercurial Inunction.—A combination of calomel with albumin (75 to 25) forms the calomelol of Van Heyden. The addition of three parts of petrolatum to two of calomelol affords a cleanly method of practising inunction for syphilis, as this ointment does not stain the linen.

Suppositories for Hæmorrhoids:

℞ Chrysarobini, ...0.08 gramme;
Iodoformi, ...0.02 gramme;
Ext. belladonnæ, ...0.01 gramme;
Olei. theobromat., ...2. grammes.
M. ft. suppositoria No. I. Use one each night.

The *Journal de médecine* (April 29, 1906) states that from the use of this prescription, in three or four days the pains and hæmorrhages will disappear and a cure is often obtained.

Pityriasis Capitis.—In cases of dandruff accompanied by itching and redness of the scalp, Martineau (*Journal de médecine*, April 29, 1906) prescribes the following lotion:

℞ Chloral hydrate, ...30.0 grammes;
Sol. of mercuric chloride 1-1000,.....100.0 grammes;
Distilled water, ...500.00 grammes.
M. ft. Solution.

This solution is to be applied warm, with friction, each morning. When the itching ceases, substitute the following:

℞ Chloral hydrate, ...25.0 grammes;
Distilled water, ...500.0 grammes.
Ft. sol.

Formula Containing Camphor and Caffeine for Hypodermic Use.—A. Clovet (Société de thérapeutique, *Journal de médecine de Bordeaux*, April 29th) has found the following combination valuable as a heart tonic and diaphoretic. To 3 c.c. of pure and sterilized glycerin he adds one cubic centimetre of this solution:

℞ Caffeinæ, } .....āā 0.25 gramme (or gr. iv);
Sodii salicylatis, }
Aquæ destillatæ,.....q. s. ad 1 gramme (or gr. xv).
M. *et adde* 1 gramme, or 1.25 grammes, of an alcoholic solution of camphor (10 per cent.).

This solution, which keeps clear for a long time, contains in each 5 c.c. about 0.25 centigramme of caffeine and 0.10 centigramme of camphor.

The Iodide of Codeine for Asthma.—Labadie-Lagrave and Rollin (*Journal de médecine*, May 6, 1906) call attention to the biiodohydrate, or the acid iodohydrate, of codeine, as an agent of special influence over asthma, dyspnœa, emphysema, and acute bronchitis. It is crystalline in fine needles of a straw color, soluble in sixty parts of cold water and in three parts of boiling water. Only slightly soluble in cold alcohol, it dissolves in forty parts of warm alcohol. It dissolves in one hundred parts of chloroform, but is insoluble in ether or benzine. It is dissolved by hydrochloric and acetic acids, and also by ammonia. It is prescribed in pills, each containing 0.01 grammes (or grain $^1/_6$), of which eight or ten are given during the day. It also may be given in syrup, especially to children. It may also be given hypodermically (1 per cent. solution in distilled waters).

Lupulin in the Treatment of Disorders of the Stomach.—Stern calls the attention to lupulin in the *Medical Record* of September 15, 1906. In nervous anorexia the drug may be prescribed as follows:

℞ Lupulini, ...0.3 gramme (5 grs.).
D. t. dos. No. C in caps. gelat.
Sig. From one to three capsules one or two hours before meals with carbonated water.

If a more energetic local action is desired, the following combination will be found useful:

℞ Lupulini, ...0.3 gramme (5 grs);
Berberini phosphatis, ...0.03 gramme (gr. ss);
Capsicini, ...0.0075 grammes (1-8 gr.).
Ft. d. t. dos. No. C in caps. gelat.
Sig. From one to three capsules half an hour before meals.

℞ Lupulini, ...0.2 gramme;
Condurangini, ...0.01 gramme;
Cinchonidini, ...0.05 gramme.
D. t. dos. No. C in caps. gelat.
Sig. Two capsules half an hour before meals, to be followed by one or two teaspoonfuls of whiskey or brandy.

To overcome the painful sensations in hyperæsthesia of the gastric mucosa:

℞ Lupulini, ...0.25 gramme;
Argenti nitratis, ...0.005 gramme (1-12 gr.).
D. t. dos. No. xxx in caps. gel.
Sig. One or two capusles before meals together with half a wine glassful of lukewarm water.

This combination continued for some time suffices very often to relieve the burning or gnawing gastric pain. In a few instances it is necessary to incorporate with it small doses of codein or extractum belladonnæ fol. alcohol.

Another good combination affording relief of gastric hyperæsthesia is the following:

℞ Lupulini, ...5.0 grammes;
Camphoræ monobrom., ...0.15—0.3 gramme.
M. et. ft. pulv. d.t. dos. No. XXX.
Sig. One powder before meals in wafers.

It must be understood, of course, that dietetic and other measures must often be instituted along with the medicinal treatment.

In cardialgia, resulting from gastric neuroses, when it seems advisable not to administer any drug by the mouth, lupulin may be given in the form of suppositories:

℞ Camphoræ, } .....āā 5.0 grammes;
Lupulini, }
Ext. belladonnæ, ...0.15 gramme.
Olei theobromatis q. s.
M. et ft. suppositoria No. X.
Sig. One suppository to be inserted into the bowel every two hours.

℞ Lupulini, ...5.0 grammes;
Extracti cannabis indicæ,.....0.3 gramme.
Olei theobromatis q. s.
Sig. Insert one into the bowel every two hours.

℞ Lupulini, ...5.0 grammes;
Ext. physostigmatis, ...0.2 gramme;
Ext. belladonnæ alc., ...0.1 gramme.
Olei theobromatis q. s.
M. et ft. suppositoria No. X.
Sig. One suppository every three to four hours.

For neurasthenia gastrica the following is advised:

℞ Lupulini, ...0.15 gramme;
Ferri et quininæ citratis,.....0.1 gramme.
D. t. dos. No. C in caps. gel.
Sig. Two capsules before meals.

℞ Lupulini, ...0.15 gramme;
Ferri et strychninæ citratis, } .....āā 0.05 gramme.
Cinchonidinæ sulphatis, }
D. t. dos. No. C in caps. gel.
Sig. Two capsules three times a day.

℞ Lupulini, ...0.15 gramme;
Massæ ferri carbonatis, ...0.1 gramme;
Extracti nucis vomicæ,.....0.015 gramme.
M. d. t. dos. No. C in caps. gel.
Sig. Two capsules before meals.

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"BE A PROFESSOR OR WRITE A BOOK."

These are the closing words of an interesting letter from Brazil which we publish this week. It seems from our correspondent's account that it is troublesome, tedious, and expensive for a foreign physician to get the chance to attempt to earn a living by the practice of his profession in Brazil. But he who happens to be a professor in a medical school or to have written a book on some medical subject may find discrimination in his favor. It is not easy, however, to become a professor in such a school as the Brazilian authorities undoubtedly have in mind or to write a book that they would rate sufficiently high to entitle the author to the favor accorded by their laws. He who is already a professor in a school of the required rank or has already written a book that would serve his purpose in Brazil is hardly likely to contemplate migration to that country from the United States; indeed, we doubt if any considerable number of our readers are pining for a career in South America. The case is different, however, with Europeans, many of whom, we may imagine, would be quite willing to try their fortune there.

Onerous as are the conditions applied to foreigners in Brazil, they differ only in degree from those which we impose upon our own people. We venture to say that for every American physician who would care to transplant himself to Brazil there are hundreds who are desirous, for some very good reason, to shift the field of their activities from one to another of our States, but are met by the barrier of the State examination. There are numerous indications that the cry against this impediment is daily growing more and more widespread. It does not come altogether from men who might not hold up their heads with the best of the profession; it comes in great and increasing volume from physicians of national reputation. To undergo the examination is a hardship for many a man who has not only practised medicine creditably for years, but even added materially to our knowledge. There is certainly something clumsy and unjust about a system that compels him to do so. The remedy, of course, lies in interstate reciprocity, and that seems to be of very slow growth. The subject is occupying the minds of many of the best men in the profession, however, and it appears not unreasonable to hope that before long there may be material relief. It cannot come by national legislation, since it is wholly a matter for State action, and probably the State legislatures cannot reasonably be expected to take action that shall be satisfactory; apparently it can come only by mutual concessions on the part of State examining boards.

MEDICAL FEES.

The *World's Work*, usually a very conservative magazine, recently had something to say editorially with regard to surgeons' and physicians' fees that seems to us quite wide of the mark. It declared that it had become difficult for the best part of the people of the United States—the well to do class who are neither poor nor rich—to receive the best medical and surgical service, for as a rule as soon as a physician or a surgeon became famous he set his fees so high that none but the rich could pay them. It is true, as the writer admits, that the poor can by going to a hospital have the services of the best surgeons free, so that it is possible for the pauper and the millionaire to have the attendance of the most skilful physicians and surgeons "while the self respecting man of moderate income must take a greater risk at the hands of the less skilful." The writer considers that "this condition violates the spirit of the best medical ethics as it violates the spirit of the best social service."

This is of course an exaggerated statement of the state of affairs and is entirely based on the false supposition that only those who charge very high fees are competent physicians and surgeons. As a matter of fact many of the most competent men in the medical profession charge but moderate fees. The very busy man, who almost finds it necessary to charge high fees in order to keep from being overburdened with work, is sometimes by no means so competent as a modest

rival. This is very well known by physicians themselves, who as a rule will not be found crowding to the clinics of the fashionable surgeons, though with them the money question is not an issue. If people would only consult their family physician and let him recommend their consultants or surgeons, there would be little danger of a charge beyond their means on the one hand or of the slightest additional risks on the other. The physician or surgeon oftenest mentioned in the newspaper is far from being the safest or the surest, though his charges may advance with his notoriety.

EXTRAPHARMACOPŒIAL REMEDIES.

A noted pharmacognosist observed on one occasion that the pharmacopœia was a mirror of its time. This observation is borne out to some extent by a comparison of the present pharmacopœias with those that made their appearance about the time of the revival of learning in the Middle Ages, when the materia medica was of a somewhat barbaric nature and reflected many of the current barbarisms. The whole parts of animals were employed in the treatment of disease in similar parts in man. As the new organotherapy demonstrates, this belief in the curative properties of animal substances had some rational basis and the practice is not to be wholly sneered at. There was certainly more to be said in its favor than in that of the later belief in signatures, in consequence of which plants that resembled certain organs were used in the treatment of diseases of those organs. But it would be difficult to draw any lesson as regards the degree of civilization of the present day from a study of the substances which go to make up the newer materia medica and that are more or less employed in therapeutics. The science of medicine has made many notable advances within a comparatively recent period, the nature, administration, and effects of medicines being better understood than formerly, but how the character of medicine has changed, and how vast has been the output of late, not a day passing but some new claimant for favor is thrust on the attention of the practising physician!

We have before us the *Proceedings of the New York State Pharmaceutical Association* at a meeting held last June, and one of the bulkiest committee reports is that of the Committee on New Remedies in which are enumerated nearly a thousand articles which have been introduced into medicine only a short time, too short, indeed, for any of them to find a place in the pharmacopœia. It would seem an utter impossibility for the pharmacist to keep all these preparations in stock, in addition to those which are official, and we are fain to believe that many of the substances described by the committee are doomed to an ephemeral existence. The subject is again brought to our attention by the appearance of a twelfth edition of the *Extra Pharmacopœia* of Martindale and Westcott, in which many new compounds are figured, even to radioactive substances, the uses of the rare earths in medicine and pharmacy being on the increase.

It is not, then, the official pharmacopœia which is to be regarded as the true mirror of its time, but rather such extra pharmacopœias as that of Martindale and Westcott and the published reports of such committees as the Committee on New Remedies of the New York State and other pharmaceutical associations. Where in the past the entire substance of the glands and other organs of the animal body were used in medicine the chemist of the present day extracts the active principle or principles of the organs and presents them to us in a highly concentrated form. The march of progress is upward and is marked by cycles in which we return to the same things, but on a higher level.

DELINEATION IN MEDICINE.

The art of drawing, even in mere outline, has a value in medical study and teaching that is almost universally underrated. There are, indeed, those who profess to pride themselves on their inability to draw a straight line, just as there are those who boast of the illegibility of their writing and of the fact that they cannot drive a nail into a board or hit a barn door with a bullet at ten paces. It is possible that such men deceive themselves into the thought that their shortcomings are of no detriment to them, but assuredly they deceive nobody else. Many of us doubtless remember a renowned professor of surgery who, when he laboriously attempted to draw a diagram on the blackboard, frequently ended with the letter X and the remark "Let this represent the heart—more or less." There was a tone of recklessness if not of defiance in that "more or less," but the students knew full well that the great man felt himself hampered by his inability to draw.

In old times there were men who, utterly lacking in the art of delineation, depended absolutely on the professional draughtsman, often requiring him to produce a picture from a mere verbal description of the scantiest kind. This left a good deal to the artist's imagination, and some of the results have come down to us, for

example, in the horrible representations of monstrosities in the works of Ambroise Paré. In these days of photography, of course, such blunders are avoided, and when photography is not available authors commonly recognize that they must furnish the draughtsman with either the object to be depicted or at least a rough sketch of it. When it is a question of making a diagram, the sketch has to be provided, and the better it is the more valuable will be the finished drawing.

It is not in lecture room teaching alone, or in the illustration of printed text, that drawing may play an important part; an offhand diagram will often go far to explain to an intelligent patient much that it would be difficult if not impossible to elucidate in words. And it is not only in medicine, but also in almost every other vocation that the ability to produce an intelligible sketch is of great value. Reasonable proficiency in drawing, therefore, should be imparted to every child who is at all capable of acquiring it. We are glad to believe that much care is taken to do this in our country, at least in many parts of it. At last year's meeting of the American Medical Association, in Portland, Oregon, one of the sections held its sessions in a schoolhouse, and well do we remember the beautiful crayon drawings that the blackboards bore. If they were done by the pupils, there must have been among them children of great artistic promise; if they were done by the teachers, we may trust such instructors to bring out the children's capabilities to the utmost.

THE STOMACH COUGH OF THE CONSUMPTIVE.

The "stomach cough" of popular parlance is by no means mythical, and there is a particular form of cough occasioned by gastric irritation which is of some importance in the early diagnosis and management of pulmonary tuberculous disease. It sometimes occurs in advance of other noticeable signs of the lung affection, but it is apt to persist after the pulmonary trouble has become evident and has given rise to its own cough. It is peculiar to this form of reflex cough that the attacks come on soon after taking food, that they terminate in vomiting, and that they do not end in expectoration.

M. Jean C. Roux, of the Andral Hospital, Paris, has recently given an interesting account of this variety of reflex cough (*Clinique*, September 7th). According to him, there must be coincident gastric and pulmonary irritation to affect the pneumogastric nerve in such a way as to give rise to it. He thinks that alcoholic gastritis is the most common form of the gastric trouble, though it may be due to certain drugs, especially cinchona, creosote, and tannin. The time which elapses between a meal and the resulting cough is short. It varies somewhat in different cases, but is usually about the same in a given individual. Occasionally the paroxysm is preceded by certain disagreeable feelings in the stomach, but oftener there is no premonitory sensation save that the patient feels that the attack is coming on, and feels it in time to take a preventive dose of medicine. The cough ceases as soon as vomiting has taken place.

In most cases this form of cough with resultant vomiting is quite amenable to treatment, though in a few instances it proves rebellious. Overeating must be prevented, and it is better for the patient to take five or six light meals in a day than to take three heavy ones. Only plain articles of food should be allowed. As regards medicines, the best results have followed the use of chloroform water. At the moment when the patient feels that the attack is coming on he should take a tablespoonful of chloroform water diluted with its own bulk of water. If this fails, he may take on subsequent occasions from a grain and a half to three grains of menthol suspended in mucilage. This mixture must be briskly shaken before each dose is taken, to insure the equable diffusion of the menthol. In some cases the swallowing of small pieces of ice is sufficient to avert the attack. In a few instances it may be necessary to give opiates, but they should be avoided if possible, as they have too great a tendency to impair the appetite.

CHRONIC RHEUMATIC LYMPHANGEITIS.

This term expresses the pathology which Wilms (*Beiträge zur klinische Chirurgie*, 1, 2; *Semaine médicale*, September 5th) is inclined to assign to a certain painful affection of the foot and leg ordinarily attributed to flat foot, but which he looks upon as having such special features as to entitle it to be considered as a disease by itself. The pain is very stubborn, and it usually affects both the lower limbs. The patients generally complain of pain in the foot, the ankle, and the heel. Deep palpation, if carefully conducted, invariably reveals acute sensitiveness behind the internal malleolus and on the posterior surface of the leg, in a vertical line corresponding exactly to the course of the posterior tibial vessels. There is also tenderness on pressure in the region of Hunter's canal. These areas of tenderness are precisely the same in all cases. Sometimes there is a little swelling behind the malleolus.

This affection is oftenest met with in young women, those between fifteen and twenty-five years of age, though it has been observed in individuals between forty and fifty years old. There is frequently a history of antecedent articular rheumatism, but by no means invariably. The trouble is very obstinate, but complete rest with the legs elevated and enveloped in hot applications seems to be indicated. As regards the pathology, the author excludes myositis, neuritis, and synovitis, but does not insist that the disease is a chronic lymphangeitis of rheumatic origin. The fact that it is generally manifested in both legs seems to favor its diathetic origin, but we must share the author's doubt as to its being a rheumatic lymphangeitis.

RENAL DECAPSULATION AND NEPHROTOMY IN GRAVE FORMS OF ECLAMPSIA.

The modern treatment of puerperal convulsions, as Dr. Pousson and Dr. Chambrelent, of Bordeaux, have pointed out recently (*Annales des maladies des organes génito-urinaires*, April 15th), has been too timidly carried out thus far to demonstrate its full value, although it is by no means new or untried. The method consists essentially in adopting means to secure the depuration of the blood. Prominent among these expedients are a milk diet or a strict liquid diet, purgatives, venesection, and subcutaneous injections of normal salt solution.

While relieving the blood of the toxic element, these measures do not, however, directly relieve the pathological condition of the kidney or the liver. It is true that enteroclysis produces an abundant flow of bile, thus indicating its action in exciting the functions of the liver; and the secreting portion of the kidney may also have its function increased by the subcutaneous injections of artificial serum; but these are not always followed by diuresis, and possibly the sodium chloride may act injuriously, for at present there are some who consider it unadvisable in uræmic conditions. The water also may tend to increase the blood tension in the renal vessels, as in other organs, and thus by imposing extra work on the tubules, and particularly on the epithelium, may actually aggravate the condition which it is desired to relieve. The toxines carried by the blood to the renal parenchyma tend still further to increase the danger to the tissues of the kidney.

Without intending to substitute surgical treatment for medical, since the operative procedure is only designed as a supplementary measure demanded by an emergency in grave forms of intoxication, Edebohls and other surgeons have recommended decapsulation of the kidneys to improve the functional capacity of these important organs. Pousson and Chambrelent speak favorably of such intervention, especially in combating the toxæmia of pregnancy, and declare that, in the case of a grave form of intoxication which has resisted other measures, particularly if there is scanty urine with diminution of the proportion of urea and other extractives, and with the presence of albumin in decided quantity, this surgical intervention is justified, and it becomes a necessity if the microscopical examination of the urine gives evidence of acute nephritis.

The French surgeons above named have added to decapsulation an incision into one kidney, or unilateral nephrotomy, and they report a successful case in a primipara. The advantages afforded by the incision into the kidney, in addition to decapsulation, are that it promptly relieves the excessive tension, aids the restoration of the normal circulation, and relieves the local intoxication of the renal elements. This is entirely in accord with the explanation of the crises of uræmia occurring in the course of Bright's disease, as given by Dieulafoy, who believes that the secreting elements of the kidneys are affected by the toxic agents carried there by the blood, which at times determines a sort of renal uræmia. The incision into the parenchyma of the kidney therefore combines local bloodletting with the removal of accumulated toxines.

Obituary.

WILLIAM K. OTIS, M. D.,

OF NEW YORK.

The sudden death of Dr. Otis at a comparatively early age, forty-six years, comes as a shock to his multitude of friends in the profession and to those of the laity to whom he was personally known. The charm of his character was felt by everybody with whom he came in contact, even those who met him for the first time. As many of our readers know, he was the son of the late Dr. Fessenden N. Otis and followed in his distinguished father's footsteps as a specialist in genitourinary diseases, a branch of practice in which he achieved eminence, particularly by his improvements of the cystoscope. He had had an excellent training in general surgery as a member of the house staff of St. Luke's Hospital, and that proved, as it always does, the best of all foundations for a special surgical practice. Dr. Otis succumbed to an attack of pneumonia of only two days' duration.

News Items.

NEW YORK CITY AND STATE

Changes of Address.—Dr. Percy Fridenberg, to 60 East Fifty-eighth Street, New York; Dr. Charles Herrman, to 250 West Eighty-eighth Street, New York; Dr. Frank N. Lewis, to 616 Madison Avenue, New York; Dr. George Miller MacKee, to 616 Madison Avenue, New York.

The Society of Physicians of the Village of Canandaigua, N. Y.—A meeting of this society, as guest of Dr. J. H. Pratt, was held at the Canandaigua Hotel, on Thursday, September 20th. The paper of the evening was by Dr. H. C. Buell, on Dysentery.

The Medical Society of the County of Ulster will hold a meeting at Kingston on Tuesday, October 2nd. The programme includes a discussion on Enterocolitis and Cholera Infantum; also a demonstration of some special forms of bacteria, by Dr. Charles W. Crispell, of Kingston.

Charitable Bequests.—By the will of Henry I. Barbey, who died in Geneva, Switzerland, on July 9, 1906, St. Luke's Hospital in this city receives $25,000, the Society of the New York Hospital receives $20,000, and $10,000 is given to each the Home for Incurables and St. Luke's Home for Indigent Christian Females.

The Medical Society of the County of Chemung, N. Y.—The following programme was carried out at a meeting of this society held at Elmira, on September 19th: The Non-Surgical Treatment of Tuberculosis, by Dr. John C. Young, Cuba, N. Y.; The Surgical Treatment of Tuberculosis, by Dr. C. C. R. Jennings, Elmira; Nervous Dyspepsia, by Dr. W. C. Byrne, Elmira; Leucæmia, by Dr. Ellicott T. Bush, Horseheads.

The Brooklyn Board of Health.—After twelve years' service, Henry B. Walker has submitted his resignation to the board of health, to take effect on October 1. Mr. Walker is an expert chemist and for many years has occupied the position of chief of the division of inspection. He will be succeeded by Dr. A. T. Talmadge, who has been connected with the health department for the past eight years. For five years previous to his identification with the present department, Dr. Talmadge served as a deputy to Dr. W. T. Jenkins, who was then health officer of the port of New York.

The Buffalo Academy of Medicine.—At a meeting held on Tuesday, September 25th, the following programme was furnished by the *Section in Obstetrics and Gynæcology:* Malpositions of the Uterus, by Dr. John V. Woodruff; Principal Cause for Abnormal Head Presentation, by Dr. Thomas G. Allen.

The Section in Surgery will hold a meeting on Tuesday, October 2nd, when the following programme will be presented: Results of Some Intracranial Operations, with exhibition of cases, by Dr. George F. Cott; Chronic Urethritis and an Improved Method of Applying Medication to the Urethra, by Dr. James A. Gardner.

Society Meetings for the Coming Week:

MONDAY, *October 1st.*—New York Academy of Sciences (Section in Biology); New York University Medical Society; German Medical Society of the City of New York; Morrisania Medical Society, New York (private); Brooklyn Anatomical and Surgical Society (private); Corning, N. Y., Academy of Medicine; Utica, N. Y., Medical Library Association; Niagara Falls, N. Y., Academy of Medicine (private); Boston Society for Medical Observation; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., Medical Society; South Pittsburgh, Pa., Medical Society; Chicago Medical Society; Practitioners' Club, Newark, N. J.

TUESDAY, *October 2nd.*—New York Neurological Society; German Medical Society, Brooklyn, N. Y.; Long Island, N. Y., Medical Society; Medical Association of Troy and Vicinity; Hornellsville, N. Y., Medical and Surgical Association; Buffalo Academy of Medicine (Section in Surgery); Elmira, N. Y., Academy of Medicine; Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Hudson, N. J., County Medical Society (Jersey City); Androscoggin, Me., County Medical Association (Lewiston); Baltimore Academy of Medicine; Medical Society of the University of Maryland (Baltimore).

WEDNESDAY, *October 3rd.*—New York Academy of Medicine (Section in Public Health); Society of Alumni of Bellevue Hospital; New York Genitourinary Society; Psychiatrical Society of New York (private); Harlem Medical Association, New York; Medical Microscopical Society of Brooklyn; Medical Society of the County of Richmond, N. Y. (New Brighton); Elmira, N. Y., Academy of Medicine; Penobscot, Me., County Medical Society (Bangor); New Haven, Conn., Medical Association.

THURSDAY, *October 4th.*—New York Academy of Medicine; Brooklyn, N. Y., Surgical Society; Society of Physicians of the Village of Canandaigua, N. Y.; Boston Medicopsychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington); Medical Society of the City Hospital Alumni, St. Louis; Atlanta, Ga., Society of Medicine.

FRIDAY, *October 5th.*—New York Academy of Medicine (Section in Surgery); New York Microscopical Society; Practitioners' Society of New York (private); Clinical Society of the New York Postgraduate Medical School and Hospital; Baltimore Clinical Society; Manhattan Clinical Society (private); New York Gynæcological Society, Brooklyn, N. Y.

SATURDAY, *October 6th.*—Manhattan Medical and Surgical Society, New York (private); Miller's River, Mass., Medical Society.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending September 22, 1906:

	September 22.		September 15.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	134	29	134	18
Smallpox	..	..	2	..
Varicella	9	..	6	..
Measles	55	2	53	2
Scarlet fever	59	2	74	4
Whooping cough	30	8	38	7
Diphtheria	154	16	184	19
Tuberculosis pulmonalis	354	154	351	150
Cerebrospinal meningitis	5	7	14	5
Totals	800	218	856	205

PHILADELPHIA AND THE MIDDLE STATES.

Dr. R. V. Patterson Appointed Subdean.—Dr. R. V. Patterson, formerly assistant chief resident physician in the Philadelphia General Hospital, has been appointed subdean to the Jefferson Medical College as an assistant to Dr. Holland.

Scientific Society Meetings in Philadelphia for the Week Ending October 6, 1906.—Monday, October 1st, Philadelphia Academy of Surgery; Biological and Microscopical Section, Academy of Natural Sciences; West Philadelphia Medical Association; Northwestern Medical Society. Tuesday, October 2nd, Academy of Natural Sciences. Wednesday, October 3rd, College of Physicians; Association of Clinical Assistants of Wills Hospital. Thursday, October 4th, Obstetrical Society; Medical Society of the Southern Dispensary; Section Meeting, Franklin Institute. Friday, October 5th, American Philosophical Society.

The Health of Philadelphia.—During the week ending September 15th, the following cases of transmissible disease were reported to the bureau of health:

	Cases.	Deaths.
Typhoid fever	104	16
Malarial fever	2	1
Scarlet fever	18	0
Chickenpox	2	0
Diphtheria	40	4
Cerebrospinal meningitis	1	2
Measles	6	1
Whooping cough	34	11
Tuberculosis of the lungs	72	62
Pneumonia	32	32
Erysipelas	2	1
Puerperal fever	1	0
Septicæmia	1	0
Cancer	18	23

The following deaths from transmissible disease were also reported to the bureau of health: Dysentery, 1; cholera morbus, 1; tuberculosis, other than tuberculosis of the lungs, 6; diarrhœa and enteritis, under two years of age, 48. The infant mortality amounted to 142; under one year of age 125, and between one and two years of age 17. The whole number of deaths amounted to 500, correspond-

ing to an annual death rate in a thousand of 17.70, in an estimated population of 1,469,126. There were 43 still births, 22 males and 21 females. No unusual meteorological phenomena were observed.

BOSTON AND NEW ENGLAND.

The Vermont State Medical Society will hold its annual meeting at Barre on October 11th and 12th, under the presidency of Dr. M. L. Chandler, of Barre. Dr. George H. Gorham, of Bellows Falls, is the secretary.

The Hartford (Conn.) Medical Society.—At a meeting of this society held on Monday, September 17th, Dr. Mark S. Bradley read a paper on Lupus Vulgaris and the Finsen Treatment. Dr. Charles J. Fox led in a general discussion on the subject.

The Mortality of Boston.—There were 35 more deaths in Boston for the week ending September 22nd than for the corresponding week a year ago, 235 as against 200. Of this number 129 were males and 106 females; 231 were white and four colored; 166 were born in the United States, 64 in foreign countries, and 5 unknown; 68 were of American parentage, 143 of foreign parentage, and 24 unknown. The number of cases and deaths from infectious diseases reported was as follows: Diphtheria, 31 cases and 4 deaths; scarlatina, 15 cases; typhoid fever, 71 cases and 8 deaths; measles, 4 cases; tuberculosis, 34 cases and 19 deaths. The deaths from pneumonia were 22, whooping cough 4, heart disease 19, bronchitis 1 and marasmus 11. There were 10 deaths from violent causes. The number of children who died under 1 year of age was 60; the number under 5 years of age, 85. The number of persons who died over 60 years of age was 47. The deaths in public institutions were 83.

Dedication of the New Buildings of the Harvard Medical School.—On the afternoon of Tuesday, September 25th, in the presence of one of the most illustrious gatherings ever assembled in Boston, the superb buildings of the new Harvard Medical School, near the Fenway, were dedicated with imposing ceremonies. There were present the president and fellows, overseers, faculties and officers from the university; from all the principal medical colleges in this country and abroad were delegates who had been especially assigned to represent their schools on this occasion. Shortly after 2 o'clock those occupying seats on the terrace passed out from the administration building. First came President Eliot, followed by the fellows, the speakers of the day, Governor Guild, Dean Richardson, of the faculty of medicine, delegates of other universities, and officers of other institutions, and the faculty of medicine. Most of the university men, Harvard men as well as the delegates, wore their academic robes, and they presented a picturesque appearance, especially when such a conspicuous costume—scarlet and pink—as that worn by Dr. Ewart, of St. George's Hospital, and delegate from the University of London, came into view. The alumni of the medical school and the guests were grouped on the lawn. After an invocation by the Rev. George A. Gordon, D. D., pastor of the Old South Church, the programme prepared by the committee was carried out as follows: Dr. John Collins Warren, Moseley professor of surgery, delivered an address on The Enlarged Foundation, which was followed by an address by one of the architects, Charles A. Coolidge, on The Buildings. President Eliot then made the speech of acceptance of the buildings, and Dean Richardson spoke for the faculty of medicine. Dr. Thomas Dwight, Parkman professor of anatomy, made an address on The Laboratories, and Dr. Frederick C. Shattuck, Jackson professor of clinical medicine, spoke on The Clinics. President Eliot then dedicated the buildings with these words: "I devote these buildings and their successors in coming time to the teaching of the medical and surgical arts, which combat disease and death, alleviate injuries, and defend and assure private and public health, and to the pursuit of the biological and medical sciences, on which depends all progress in the medical and surgical arts and in preventive medicine. I solemnly dedicate them to the service of individual men and of human society, and invoke upon them the favor of men and the blessing of God." After Dr. Gordon has pronounced the benediction the buildings were thrown open for inspection and tea was served on the terraces. At the academic session, held in Sanders Theatre at the university in Cambridge, on Wednesday, 26th, the principal interest was in the conferring by President Eliot of honorary degrees, which were awarded as follows: Charles Allerton Coolidge, architect, honorary doctor of arts; Dr. Simon Flexner, since 1904 director of the laboratories of the Rockefeller Institute for Medical Research, honorary doctor of science; Dr. John Collins Warren, instructor and professor of surgery in Harvard University for thirty-five years, doctor of laws; Dr. Henry Pickering Bowditch, for thirty-five years chief teacher of physiology in Harvard University, for ten years dean of the medical school, doctor of laws; Dr. José Eames, professor of pathology and chief of the clinical staff in the Medical School of Mexico, doctor of laws; Dr. Franz Keibel, professor of anatomy in the University of Freiburg, doctor of laws; Dr. Charles Scott Sherrington, lecturer and professor at the University of London, doctor of laws; Dr. Francis John Shepherd, professor of anatomy in McGill University, doctor of laws; Sir Thomas Barlow, professor of clinical medicine in the University College Hospital, doctor of laws; Dr. Abraham Jacobi, a graduate of Bonn in 1851, and a practising physician in New York since 1853, doctor of laws. Addresses were delivered by President Eliot and Professor William H. Welch, of Johns Hopkins University. The new medical school comprises five buildings, all of marble and built in the classic Roman style, around a quadrangle. The buildings were erected at a cost of $5,000,000, and have been three years in process of construction. A description of the exterior and the interior arrangement of these buildings, together with an illustration, was printed in *The New York Medical Journal* for May 19, 1906.

BALTIMORE AND THE SOUTH.

The Richmond (Va.) Academy of Medicine and Surgery.—The following programme was presented at a meeting of this academy held on Tuesday, September 25th: Operative Technique in Bile Tract Infection and Indications for Operative Intervention, by Dr. Hugh M. Taylor; Medical Treatment of Diseases of the Bile Tract, by Dr. M. P. Rucker.

The Jefferson County (Ky.) Medical Society.—The following programme was arranged for a meeting held at Louisville on Monday, September 24th: Report of Clinical Cases: Ununited Fracture of the Femur, by Dr. M. Casper; Report of a Case, by Dr. J. C. Cecil (title not given); Report on Pathological Specimens, by Dr. Simrall Anderson and Dr. A. M. Cartledge; a paper on the Medical Treatment of Gallstones, by Dr. R. A. Bates; discussed by Dr. J. R. Morrison and Dr. W. A. Jenkins.

The Medical Society of Virginia.—The thirty-seventh annual meeting of this society will be held at Charlottesville, on October 9th to 12th, inclusive. The officers of the society are: President, Dr. Lomax Gwathmey, of Norfolk; vice-presidents, Dr. S. T. A. Kent, of Ingram, Dr. Greer Baughman, of Richmond, and Dr. T. C. Quirk, of Falls Church; recording secretary, Dr. Landon B. Edwards, of Richmond; corresponding secretary, Dr. John F. Winn, of Richmond; treasurer, Dr. R. M. Slaughter, of Theological Seminary.

The Old Dominion Medical and Surgical Society (the colored medical association of Virginia) will hold its second annual meeting at Richmond, Va., on October 2nd and 3rd. The president, Dr. C. R. Alexander, of Petersburg, has issued an address to the society, in which he states there is a crying need for a strong organization of the doctors of his race to discuss plans for the lessening of mortality of the race, especially in the cities where it is so great. An interesting programme has been arranged, and those questions relating to sanitary conditions and comfortable homes will be fully discussed. The other officers of the society are: Secretary, Dr. A. W. G. Farrar, Richmond; treasurer, Dr. R. E. Jones, Richmond; corresponding secretary, Dr. H. L. Harris, Richmond.

The St. Louis, Mo., Bill to Check the Spread of Communicable Diseases.—Medical examinations of persons with communicable diseases are provided for in a bill which President H. A. Forman, of the city council introduced on September 14th. The bill carries an appropriation of $40,000 to defray expenses. The department is to be known as the "medical inspection division of the health department," and is for the detection and preventing the spread of contagious diseases. It creates the position of one chief medical inspector, at an annual salary of $1,800; one supervisor of nurse inspectors, at an annual salary of $1,500;

assistant medical inspectors with one year's hospital experience, at a salary of $1,200 each, and assistant nurses at $900 each. In order to run the department, a full quota of clerks, stenographers, and nurses is provided for.

The Mortality of Baltimore.—The report of the Health Department for the week ending September 22nd, showed a total of 212 deaths, as compared with 196 the corresponding week of last year, 181 in 1904, and 171 in 1903. The principal causes of death were: Typhoid fever, 9; diphtheria, 3; consumption, 29; cancer, 13; apoplexy, 3; pneumonia, 5; bronchitis, 3; diarrhœa, under five years of age, 24; Bright's disease, 16; congenital debility, 10; senile debility, 5; accidents, etc., 6. Sixty-eight deaths occurred in children under five years of age. The nativity of the decedents was: United States, 123; foreign, 30; colored, 54; unknown, 5. The following cases of infectious diseases were reported for the week: Diphtheria, 24; scarlet fever, 7; typhoid fever, 51; measles, 2; whooping cough, 1; consumption, 14.

CHICAGO AND THE WEST.

The Idaho State Medical Society.—This society will hold its annual meeting at Lewiston, on October 4th and 5th, under the presidency of Dr. J. B. Morris, of Lewiston. Dr. E. D. Maxey, of Boise, is the secretary.

The Colorado State Medical Society will hold its annual meeting at Denver on October 2nd, under the presidency of Dr. H. G. Wetherill, of Denver. Dr. Melville Black, of Denver, is secretary of the society.

The Wayne County (Mich.) Medical Society held its annual meeting at Detroit on Monday, September 17th. The election of officers resulted as follows: President, Dr. J. H. Carstens; vice-president, Dr. W. L. Metcalf; secretary and treasurer, Dr. Walter Ford.

The Blackwell Medical Society, of Detroit, an organization composed of women physicians, first known as the *Women's Academy of Medicine,* held a meeting on Tuesday evening, September 18th. Dr. Harriet L. Hawkins read a paper on Pneumonia: Its Serum Treatment, which was followed by a general discussion.

The Wyoming State Medical Society.—The annual meeting of this society was to be held at Casper on September 24th and 25th. The officers of the society are: President, Dr. W. A. Wyman, of Cheyenne; vice-presidents, Dr. F. Horton, of Newcastle, and Dr. H. Croskery, of Wheatland; secretary, Dr. G. L. Strader, of Cheyenne; treasurer, Dr. A. F. Hoff, of Casper.

The Hennepin County (Minn.) Medical Society.—At a meeting of this society held at Minneapolis on September 17th, the programme included the following: Remarks by Dr. Charles A. Reed on the Treatment of Clubfoot in Infants; the presentation of clinical cases, by Dr. G. D. Head and Dr. S. P. Rees; report of a case of Aneurysm of the Internal Carotid Artery, by Dr. E. S. Strout.

The Western Surgical and Gynæcological Association.—At the annual meeting of this association, held at Salt Lake on September 1st and 2nd, the election of officers resulted as follows: President, Dr. C. W. Oviatt, of Oshkosh, Wis.; vice-presidents, Dr. S. C. Baldwin, of Salt Lake, and Dr. Jabez N. Jackson, of Kansas City; secretary and treasurer, Dr. A. T. Mann, of Minneapolis. St. Louis was named for the next place of meeting.

The Washington State Medical Association.—At the annual meeting of this association, held at Spokane, on September 11th-13th, the election of officers resulted as follows: President, Dr. J. H. Lyons, of Seattle; vice-presidents, Dr. E. L. Kimball, of Spokane, and Dr. E. E. Shaw, of Walla Walla; secretary, Dr. C. H. Thomson, of Seattle; treasurer, Dr. G. H. McGreer, of Tacoma. It was decided to hold the meetings of 1907, 1908, and 1909, respectively, at Seattle, Tacoma, and Spokane.

Statement of Mortality in Chicago for the Week Ending September 22, 1906, compared with the preceding week and with the corresponding week of 1905. Death rates computed on United States Census Bureau's figures of mid-year population—2,049,185 for 1906, 1,990,750 for 1905:

	Sept. 22, 1906.	Sept. 15, 1906.	Sept. 23, 1905.
Total deaths, all causes	582	548	512
Annual death rate in 1,000	14.81	13.94	13.41
Sexes—			
Males	337	308	282
Females	245	240	230
Ages—			
Under 1 year of age	158	128	144
Between 1 and 5 years of age	57	50	63
Between 5 and 20 years of age	35	39	27
Between 20 and 60 years of age	237	232	196
Over 60 years of age	95	99	82
Important causes of death—			
Apoplexy	12	11	14
Bright's disease	44	43	30
Bronchitis	7	3	6
Consumption	78	55	51
Cancer	25	34	16
Convulsions	7	7	7
Diphtheria	8	6	8
Heart diseases	36	41	47
Intestinal diseases, acute	122	110	114
Measles	1	2	1
Nervous diseases	15	20	24
Pneumonia	35	30	24
Scarlet fever	3	6	0
Suicide	5	8	8
Sunstroke	0	4	0
Typhoid fever	14	13	9
Violence (other than suicide)	34	31	33
Whooping cough	8	6	8
All other causes	128	118	112

There is a serious increase of typhoid fever in the city, due, it is believed, to milk contaminated with the poison by the use of polluted water in washing cans and other utensils. The department has closed one infected milk depot and excluded milk from two dairy farms pending the bacteriological examination of their water supplies.

GENERAL.

The Surgeon General of the Army.—Dr. Robert M. O'Reilly, who has served one term as surgeon general, has been reappointed for an additional term of four years.

The Enno Sander Gold Medal of the Association of Military Surgeons of the United States, offered for the best essay on the training of the medical officer of the State forces to best qualify him for local service and for mobilization with national troops, was awarded at the recent meeting of the association to Dr. James E. Pilcher, United States Army.

The Association of Military Surgeons of the United States.—The election of officers at the annual meeting of this association, held at Buffalo, on September 11th-14th, resulted as follows: President, Colonel Valery Havard, U. S. Army; vice-presidents, Dr. P. M. Rixey, U. S. Navy, Dr. George Tully Vaughan, and Dr. J. K. Weaver; secretary, Dr. James E. Pilcher; treasurer, Dr. H. A. Arnold; assistant secretary and reporter, Dr. Carlisle De Vries. Jamestown, Va., was chosen as the place for holding the next annual meeting.

The American Hospital and Training School for Nurses at Constantinople Destroyed.—According to the New York *Tribune* for September 23rd, advices from Canstantinople state that the new American Hospital and Training School for Nurses, just established there under the direction of Dr. Thomas Spees Carrington, of New York city, surgeon in charge, has been burned to the ground on the eve of its formal opening. Occupants for nearly every bed in the new institution were waiting for entrance, and a large number of surgical cases had been booked when the disaster occurred. Fortunately no patients had been placed in the building, owing to the necessity for a few finishing touches to the interior. The exact loss is not at yet known, but is believed to be about $10,000, part of which is covered by insurance.

An Aseptic Drinking Cup for Use in the Navy.—According to the *Army and Navy Journal* for September 22nd the secretary of the navy has approved a recommendation of the bureau of medicine and surgery of the navy department that trays filled with formaldehyde solution to hold drinking cups on board vessels of the navy be supplied all ships in commission. The letter of Surgeon General Rixey on this subject follows: "The bureau believes that the scuttle butt cup is a common means of transmitting communicable diseases, and recommends that on all ships of the navy this cup be kept submerged when not in use, in a solution of formaldehyde (1-2,500). The solution is practically tasteless, and will kill all disease germs harmful to man. For the preservation of the health of the men it is considered most desirable that the request of the commanding officer of the *Tennessee,* to have trays placed on the scuttle butts to hold an antiseptic solution, and drinking cups, be complied with."

Pith of Current Literature.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

September 20, 1906.

1. Two Cases of Lymphatic Leucæmia, By JAMES S. WHITNEY.
2. Trachoma, By BENJAMIN P. CROFT.
3. The Winter Climate of Tucson, Pima County, Arizona, By ISAAC W. BREWER.
4. Removal of an Enormous Ovarian Tumor, By WALTER A. SMITH.

1. Two Cases of Lymphatic Leucæmia.—Whitney reports two cases of lymphatic leucæmia. In the first there was a resemblance of the clinical picture to that of typhoid fever, with a consistent temperature curve, characteristic enough of acute leucæmia. The necrosis in the mouth is also a very frequent occurrence, and the similarity of the process of this case to the so called cancrum oris would suggest that in some of the cases recorded in literature under the latter title a blood examination might have shown a leucæmia as the primary condition. The leucocyte count rose rapidly. But there was almost complete absence, both clinically and at autopsy, of the enlargement of the lymphatic apparatus, demanded by the classical picture of lymphatic leucæmia, according to Ehrlich. The author calls, therefore, the reader's attention to the consideration of whether, in reality, the so called acute lymphatic leucæmia is not myeloginous in origin. Of the second case the writer says, that it was impossible to make a diagnosis of lymphatic leucæmia from the anatomical examination alone. The clinical history, however, showed that the case was one of undoubted lymphatic leucæmia, in which a remarkable change in the character of the blood occurred toward the end of life. The unique feature about this case was the low white count over a prolonged period of at least three months.

3. The Winter Climate of Tucson, Pima County, Arizona.—Brewer gives a description of the city of Tucson, situated at the Santa Cruz River at an altitude of 2,368 feet above sea level, and having a population of about 14,000. It is a distinctly winter station, with a warm winter climate and clear, dry atmosphere the average temperature for the months of October-March being 60°, the highest mean 76°, the lowest 40°. The relative humidity averages about 46 per cent., and varies but little from month to month. During the six winter months sixty per cent. of the days are liable to be clear and but six per cent. cloudy, rain falls on an average of nineteen days. The prevailing direction of the wind is from the south, and the velocity averages between five and six miles per hour. In winter Tucson has a higher temperature and lower humidity than many of the noted resorts, it is a little cooler and dryer than Cairo, Egypt, although the rainfall is greater.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

September 22, 1906.

1. Gallstones and Gallbladder Diseases from the Standpoint of the Physician, By NORMAN BRIDGE.
2. Nephrolithiasis, By A. H. CORDIER.
3. The Surgical Treatment of Gastric and Duodenal Ulcer and Its Results, By WILLIAM J. MAYO.
4. Some Pathological Features of the Pulp, By V. A. LATHAM.
5. Cerebral Decompression. Palliative Operations in the Treatment of Tumors of the Brain (*Concluded*), By WILLIAM G. SPILLER and CHARLES H. FRAZIER.
6. The Present Status of Brain Surgery, By M. ALLEN STARR.

1. Gallstones and Gallbladder Diseases from the Standpoint of the Physician.—Bridge says that all cases of proved gallstone or gallbladder trouble are proper subjects for surgical consideration, whether they are to be regarded as surgical cases or ever come to operation. Whether operation is to be done or not, when condition do not sound the insistent need of an operation, or the patient declines, or the physician sees reasons against an operation, proper medical treatment should be instituted always, and persistently carried out. In acute cases there should be absolute rest of the body, with rest of the stomach and bowels to the extent of starvation for some days, especially where peritonitis is present or threatened, while nutrient enemata and perhaps strychnine hypodermically may be allowed. During the initial pain it is always best to evacuate the stomach promptly. Perhaps there is some benefit to be expected from hot poultices or ice bags over the epigastrium. In the subacute and chronic cases the daily flushing of the bowels by alkaline laxative waters is useful, but it is irrational to suppose that gallstones are thus washed away. Nor do olive oil or any other of the pretended expulsive agents have the smallest effect. The thing that happens is probably merely the elimination of effete matter from the body. This process is aided by a restricted diet of the most proper foods and by good hygiene. To go to the Spas, drink freely of water, and live on a low diet, be much out of doors, and rest from work and perhaps from cares is always wholesome for these patients. But the only proper course such patients who would be fairly well and avoid surgery is to live lives of absolute regularity and abstemiousness, rigidly temperate in everything except the use of water. But one day of overdoing, overeating, or overdrinking, or of severe chilling of the body, may start an infection and precipitate an acute attack which will destroy life unless prevented by timely surgery.

2. Nephrolithiasis.—Cordier concludes his article in saying: Nephrolithiasis is more prevalent than is generally supposed. A stone having formed in the pelvis of the kidney if too large to pass will sooner or later produce symptoms demanding its removal. There exists a special cause for stone development in the right kidney—eighty per cent. of his cases having occurred in the right kidney. With a carefully obtained clinical history, the diagnosis of stone in the kidney is easy. Obscure, persistent pains in the region of the kidney in patient who had a renal colic years ago, should lead to an exploration of the organ. Suppuration in stone cases as a rule is a late process, and should be prevented by early surgical treatment. A wound in a healthy kidney heals quickly, and the operation of nephrolithotomy has a very low mortality. At time of operation the patency of the ureter should be established, and the kidney should not be removed if it has a patent ureter, or unless it be practically destroyed by the disease. Hæmorrhage from a kidney is generally easily controlled.

3. The Surgical Treatment of Gastric and Duodenal Ulcer and Its Result.—William J. Mayo says that the surgical treatment of acute perforation of the stomach is now on a sound footing, the results depending on speedy diagnosis and prompt operative relief. Patients operated upon within the first five hours usually recover; after ten hours the majority die. Suture of the perforation and pelvic drainage with or without irrigation, the patient being subsequently maintained in the semisitting posture (exaggerated Fowler's) for several days, gives the best results. If it seems probable that stricture or other secondary condition will result and the patient is in good condition, gastrojejunostomy should be performed providing it can be done without spreading the already present infection. Recurring acute hæmorrhages are best treated by opening up the stomach or duodenum, locating the bleeding point and suturing the part firmly with catgut on a curved needle from the inner side. The outer surface is then exposed and protected over this area by a few mattress musculaperitoneal sutures of linen;

while in acute hæmorrhage the Mayo Brothers have not found gastrojejunostomy a reliable procedure, and they prefer primary operation on the bleeding point with or without excision of the ulcer. It seems that chronic ulcer of the stomach and duodenum is most common in men and is essentially a disease of adult life. It entails years of invalidism on the victim and in fully twenty-five per cent. is the direct cause of death, while indirectly through anæmia it permits of general infections, tuberculous or otherwise, and thus doubles the mortality. Gastric ulcers were found with nearly the same frequency in males and females, while ulcers of the duodenum are nearly as common as ulcers of the stomach, but more frequent in males. That a very large proportion of chronic ulcers are medically incurable is recognized by the majority of unprejudiced investigators. Of the operations used gastrojejunostomy, gastroduodenostomy, excision of the ulcer, Rodman's operation, and resection of the stomach are spoken of. At the present time, says the author, it would seem that gastrojejunostomy has the largest field of usefulness, especially in those cases in which there is permanent interference with gastric mobility by reason of obstructive lesion in the pyloric end. For those cases in which obstruction is due to spasm or other nonmechanical cause the gastroduodenostomy is the operation of choice. Gastric ulcers which do not interfere with drainage and in which there is no loss of motility should be directly excised if possible. Calloused ulcers of large size and thick hard margins, whether hourglass or not, are best treated by some form of gastric resection.

5. **Cerebral Decompression.**—Spiller and Frazier are of the opinion that palliative operations in cases of cerebral tumor are justifiable. The choked disc, headache, vertigo, nausea, vomiting, and to some extent, the convulsions, are all favorably influenced by this method of treatment. Relief from these distressing symptoms is not to be despised, even though the tumor is not removable, and the relief from many of these symptoms is often permanent, i. e., during the period the patient may continue to live, especially as the growth of the tumor is not hastened by the palliative operation. Such palliative operations should be performed early in every case in which symptoms of brain tumor are pronounced, and before optic neuritis has advanced far, especially where syphilis is improbable, or antisyphilitic treatment has been employed. But partial removal of a tumor, especially of a glioma, is a questionable procedure. Palliative operation does not cause atrophy of a brain tumor, and probably does not arrest its growth; on the other hand, it probably does not hasten its growth. But it is not to take the place of a radical operation when the latter can be performed without great risk to the patient. In some cases the symptoms of brain tumor disappear almost entirely for a long time or permanently after a palliative operation. This result is obtained either by relief of intracranial pressure or by removal of some lesion (meningitis serosa, etc) other than brain tumor, and yet causing symptoms of tumor. Dr. Frazier gives the surgical report, based upon fourteen cases, from which can be seen that eleven patients were very much benefited, one was not relieved, two were successfully operated upon for removal of the tumor.

6. **The Present Status of Brain Surgery.**—Starr remarks that the prognosis in cases of focal epilepsy open to operation is not so favorable as was formerly anticipated. In only about twenty per cent. of the patients operated upon has permanent cure been the terminal result, while in many cases the relief was only for a limited space of time, even if a second and third operation was performed. But it should be distinctly understood that focal epilepsy is the only epilepsy open to a cerebral operation. Abscesses of the brain of traumatic origin, following injuries or fracture of the skull, when located in parts of the brain, diseases of which produce definite cerebral symptoms should be operated on early. If the diagnosis of brain tumor is a positive one, and to the symptoms—combined presence of headache, worse on waking, vomiting of a projectile type, not connected with the taking of food, vertigo developing on change of position, optic neuritis, and mental dulness—are added either Jacksonian epilepsy, paralysis, some form of aphasia, hemianopsia, cerebellar staggering and sudden loss of balancing power—in all these cases operative interference may be warranted. But in the far larger number of cases in which localizing signs are absent operation promises nothing. In cases of extradural hæmorrhage, following contussions or fracture of the skull, the slow development of symptoms of intracranial pressure, slow pulse, steady rise in the blood pressure, deepening coma, Cheyne-Stokes respiration, and increasing hemiplegia, afford sufficiently clear indications for trephining. The symptoms develop within six hours of the injury. In imbecility Dr. Starr does not recommend any longer any operation on the head, meaning imbecility dating from childhood, as it is evident that the microcephalus is not the cause of the imbecility, but that the imperfect and rudimentary development of the brain which does not grow in proportion to the rest of the body, prevents the normal expansion of the skull.

MEDICAL RECORD.

September 22, 1906.

1. Obstruction of the Common Bile Duct, with Report of a Case of Irrigation of the Hepatic Duct System, By JOHN F. ERDMANN.
2. Lupulin in the Treatment of Gastrointestinal Diseases, By HEINRICH STERN.
3. Some of the Factors that Predispose to Phthisis, By L. P. BARBOUR.
4. Tuberculous Peritonitis, By JOHN B. BOUCHER.
5. An Urgent Plea for the Use of Larger Doses of Antitetanic Serum for Lockjaw, with a Case in Point, By ROSA ENGELMANN.
6. Dipsomania, By CHARLES J. DOUGLAS.

1. **Obstruction of the Common Bile Duct.**—Erdmann reports a case of obstruction of common bile duct which is of interest from the viewpoint of the age of the patient, the enormous dilatation of the common duct, and the extent of the operative procedure. That all obstructions of the common bile duct eventually come to the surgeon for cure is a fallacious tenet, proved alone by numerous cases that are temporary only in their course. That all permanent and intermitting obstructions are distinctly surgical diseases, is a tenet well taken. Some of the temporary causes of obstruction of the common duct are: Cholecystitis, with duct pressure by a distended gallbladder; inflammatory changes in the duct or papilla, producing internal occlusive obstruction by means of infiltrate and swelling of the mucous membrane; foreign matter, as plugs of mucus, etc., and, finally, although most frequent, the passage of a stone through the duct itself. In intermittent obstruction, we usually have a stone too large for passage through the duct, acting as a ball valve. The symptoms appearing, when, for some reason, be it force from behind or irritation on the part of the duct, the stone is wedged or grasped in the distal portion, and the symptoms disappearing when the stone is released, either by relaxation of the irritable duct, or by some relief of the pressure from behind. Permanent obstruction is due usually to one of two distinct processes, a stone impacted in the duct, or organic changes of benign or malignant natures. Of the latter processes, malignant changes are far more frequently found than benign stenosis.

2. **Lupulin in the Treatment of Gastrointestinal Diseases.**—Stern reminds us that he was the first to call attention to the therapeutical efficacy of the various lupulins of commerce. The results obtained by different lupulins are not uniform. A sample of fresh lupulin obtained soon after the hoop harvest, is much more efficient in therapeutical respect than one which is some months old. Again, if lupulin is kept over summer, it is always rendered more or less useless for therapeutical purposes. As a matter of fact, all specimens of lupulin of the previous harvest, made use of by him for therapeutical investigation, proved almost entirely inert. This was even the case when the fresh product has proved of exceptional efficiency. Lupulin, even when kept in an air tight container, soon attains a cheesy odor. This ensues especially if it had been kept in a warm place. This odor of decomposition is due to the production of valeric acid. The latter was formerly thought to be the result of the oxidation of hop oil; however, it seems more likely that it originates from the oxidation of the bitter principles contained in lupulin. It will be found that lupulin, or that what is usually sold under that name by pharmaceutical houses, is in almost every instance a more or less deteriorated article, the therapeutical action of which—at its best—resembles that of a weak solution of valeric acid. In order to obtain a satisfactory lupulin action, it is, hence, imperative that the product is to be obtained from commercial houses importing it in large quantities for brewers' use, and that the air tight vessel containing it be kept in cold storage, and not on the shelves of drug shops for months and years, as is the case generally, before it is prescribed. Stern describes the therapeutical influence of lupulin on disorders of the alimentary tract. It finds a special indication in the functional disturbances of the stomach; in sensory, as well as motor and secretory neuroses, and in neurasthenia gastrica, in hyperæsthesia of the gastric mucosa, not infrequently associated with anorexia, in cardialgia, the most painful of all gastric neuroses. The intestinal affections in which lupulin is particularly useful are, as among the diseases of the stomach, the neuroses, the functional disorders. Sensory, as well as motor and secretory neuroses, are beneficial influenced by the drug, probably in a higher degree ever than are the analogous conditions prevailing in the stomach. The author concludes that lupulin is not only a palliative, symptomatic, but oftentimes also a curative agent. Its employment, even for protracted periods, is never followed by undesired after effects, which latter are so common with many remedies employed for similar purposes. (See also *Therapeutical Notes.*)

3. **Some of the Factors that Predispose to Phthisis.**—Barbour says that predisposition consists in a condition of the bodily cells or juices in which an amount of infective material that leaves other persons unaffected calls forth an attack of the disease in the person predisposed. It is excessive susceptibility. Whatever lowers the resistance of the individual to the bacilli tuberculosis predisposes him to that disease. There are certain influences and conditions of life, as some occupations, habits, unsanitary homes, other diseases, heredity, etc., that do lower the natural resistance and predispose to phthisis. Among these hereditary plays an important rôle. Children of very old or of very young parents are usually predisposed to disease. Weakening of the parent by long continued hardships, by insufficient foods, by excessive sexual indulgence, by alcoholic or other drug intoxication, or by a hundred and one other causes, may act in a like manner. Of more immediate importance to the family physician are those environments affecting the individual directly in an adverse manner and producing a personal predisposition, such as crowded and unsanitary homes; insufficient food or food of poor qualities; unsanitary workshops and factories. Furthermore, children are more susceptible than adults; excessive child bearing and prolonged lactation undoubtedly increase susceptibility to consumption. A cold, damp climate, by causing more indoor life, indirectly predisposes to tuberculosis. Further, such diseases as bronchial catarrh, pneumonia, etc., are more frequent in such a climate, and these diseases increase the susceptibility to consumption. Of the diseases which are predisposing causes must be taken into consideration any disease that leaves a weakened subject: Pleurisy, diseases of the heart, diabetes. Besides worry and grief, excessive use of alcohol are also predisposing causes. Another point of practical worth regarding the factors that predispose to phthisis, is the application in the treatment. Chronic tuberculosis is a disease of alternating advance and quiescence. By keeping the patient in the "straight and narrow path" of healthful living, we can in most cases avoid the lighting up of the quiescent tuberculosis. We need to be alert to see that nothing is done that makes against the best possible health. Those things that predispose to the first infection will also tend to further infection and to activity of the focus already existing.

4. **Tuberculous Peritonitis.**—Boucher believes that tuberculous peritonitis, like septic peritonitis, has its origin in a local focus in nearly every case. Peritoneal reinfection may be prevented if we are successful in removing the local focus. Whether the patient will remain cured must depend upon whether the local focus thus removed is primary or secondary; if primary, we can hope for good results, but if secondary, it must depend upon the possibility of cure of the primary seat of the disease. The surgical treatment of tuberculosis of the peritonæum involves the following propositions: 1. To remove or shut off the source of supply to the peritonæum of new tuberculous débris. 2. To remove the products of the infective process from the peritonæum. 3. To remove the tissue proliferation for the encapsulation of the foci already present; and 4, to avoid mixed infection (Murphy). Too early intervention is unwise, since the tuberculous process may be still in a period of evolution. Personally, the author believes that simple laparotomy, with removal of the fluid, acts in two ways, first, that in tubal disease the fluid mechanically separates the fimbriated extremity of the tubes from the surrounding tissue; second after removal of the fluid, contact with neighboring structures with resultant adhesions may follow; this prevents peritoneal reinfection and confines the product to the pelvis. It also accounts for the lateral pelvic masses which are sometimes developed after the disappearance of the fluid. It also enables Nature to bring her resources to bear on a localized focus and develops the self cure that has been noted in so many cases. The operative manipulation causes the serum to be poured out, and thereby increases the peritoneal power of absorption (Mayo). The percentage of recoveries in tuberculous peritonitis from operative measures must depend largely upon our classification of cases. The surgery of the disseminated serous variety, which in the great majority of cases is associated with, or due to tuberculosis of the tubes, gives us the most brilliant results, while in the dry and ulcerative forms of the disease it is followed by high mortality and little is accomplished by surgery. In the inflammatory, localized suppurative form, the operative outcome is quite favorable, while in the suppurative multilocular cystic variety but few recover.

LANCET.

September 8, 1906.

1. On the Evolution of Insanity. By R. Jones.
2. Epidemic Cerebrospinal Fever, with Illustrative Cases. By J. L. Steven.

3. The Submucous (or Window) Resection Operation for Correction of Deflections of the Nasal Sæptum, By E. F. POTTER.
4. Presence of the Bacillus Typhosus or a Closely Allied Organism in a Sample of Distilled Water Suspected to Have Caused Typhoid Fever, By R. W. C. PIERCE and J. C. THRESH.
5. Some Remarks on the Therapeutical Action of the Iodides, By J. BURNET.
6. Three Cases of Twisted Pedicle, By W. G. SUTCLIFFE.
7. A Presumed Case of Acute Yellow Atrophy of the Liver, By W. C. HAYWARD.
8. A Preliminary Note on a New Spirochæta Found in a Mouse, By A. BREIUL and A. KINGHORN.
9. A Case of Intussusception Illustrating the Fallacies and Dangers of the "Inflation" Treatment, By J. L. FALCONER.
10. First Report of the Expedition to the Amazon, 1905, By H. W. THOMAS.

2. **Cerebrospinal Meningitis.**—Steven's paper is based on the recent slight outbreak of epidemic cerebrospinal meningitis in Glasgow. After citing three illustrative cases he goes on to discuss certain features of the disease. Its epidemic character has been fully established, and it is probable that the sporadic is essentially the same as the epidemic disease. There can be no doubt that cerebrospinal meningitis is capable of being caused by several microrganisms—the pneumococcus, the meningococcus, the tubercle bacillus, and the streptococcus. The epidemic form, however, is probably caused by the meningococcus alone, the diplococcus intracellularis meningitidis of Weichselbaum. During an epidemic the diagnosis should not be difficult. The onset as sudden as in pneumonia, the vigor, the violent initial vomiting, excruciating headache, retraction of the head, petechial rash, and Kering's sign make up a striking symptom complex. In fulminant cases the rapid passage of the patient into a state of coma and extreme danger, is one of the most striking phenomena of the disease. Mistakes are often made, however, and the author cites a most puzzling case of fæcal poisoning. The diagnosis of epidemic cerebrospinal meningitis from tuberculous meningitis in the case of infants may also cause considerable difficulty. It is quite possible that many of the cases diagnosticated as posterior basic meningitis or cervical opisthotonos are really examples of sporadic cerebrospinal meningitis. As regards prognosis, from thirty to fifty per cent. of cases of the epidemic form of the disease may be recovered from, often with some nervous, functional, or paralytic defect left behind. The duration may vary from two days to seventy-four days. In conclusions the writer formulates the following propositions: 1. That sporadic epidemic cerebrospinal meningitis or fever is probably more frequent in our midst than we have hitherto supposed. 2. That epidemic cerebrospinal fever is to be regarded as a specific disease, and that it is in all probability caused by the diplococcus intracellularis meningitidis of Weichselbaum. 3. That in many cases the diagnosis can only be rendered certain by lumbar puncture. 4. That all personal contact with the sick of such a nature as to render possible contamination by the excretions from the nose or the conjunctivæ should be strictly avoided, and that all such discharges should be thoroughly disinfected.

3. **The Submucous Operation on the Nasal Sæptum.**—Potter discusses the *Fenster* resection or "window" operation for correction of deflections of the nasal sæptum. Briefly defined the operation consists in making an incision or incisions on the convex side of the deviation and separating the mucous membrane from the cartilage and bone over the whole area of the deviation. A vertical cut is then made through the cartilage, taking care to avoid perforating the mucosa on the concave side. Through this slit an elevator is introduced and the mucous membrane is stripped off the concavity. The whole of the deviated portion of the sæptum being freed from mucous membrane is now removed, either by special knives for the purpose or by punch forceps. The flap removed from the convexity is replaced so that its inner surface comes into contact with the inner surface of the mucosa of the other side, which now, instead of being concave, hangs straight like a curtain in the middle of the nasal cavity. The two raw surfaces adhere readily, and the wound in the mucous membrane is usually healed in a week or ten days. The operation can usually be done under cocaine alone. The author prefers the patient to be in the sitting up positon from the commencement.

5. **Therapeutical Action of the Iodides.**—Burnet passes in review some of the therapeutical indications which have been established for the use of the iodides, especially of the potassium salt. *Aneurysm.* Here the beneficial effect of the iodides is probably due to their property of rendering coagulation of the blood more easy of accomplishment. The contraction of the sac is due to the formation of a firm clot. The administration of the iodides by the mouth has no effect whatever, either upon the pulse rate or blood pressure within the arteries. The same is true as regards hypodermic administration. The iodides probably also do good by eliminating those poisons which have produced the arterial degeneration and by removing from the vessel coats the pathological material deposited in them in the course of the disease. In this way the elasticity of the vessel walls is restored and the aneurysmal sac can contract. *Arteriosclerosis.* Here the iodides, if they do any good at all, act by virtue of their power of elimination, enabling the blood to get rid of irritating matters and waste products, and thus aiding in the readier circulation within the sclerosed vessels. The iodides also tend to diminish the excretion of uric acid. *Angina Pectoris.* This is probably due to spasm of the smaller vessels of the heart, producing anæmia and consequent pain. The iodides relieve by a specific antispasmodic action. Their good effect in asthma and chronic bronchitis is due to the same antispasmodic action. *Syphilis.* The iodides are most advantageous in cases of involvement of the mucous membranes, bones, and nervous system. The author here lays stress on the great value of the hypodermic administration of mercury in syphilis. Large doses of the iodides should be given in all syphilitic cases, notably in locomotor ataxia. In chronic rheumatism the iodides help by virtue of their effect upon uric acid excretion. In cases of effusion and all kinds of chronic inflammation the eliminative powers of the iodides come into play. In exophthalmic goitre they do good by their direct action upon the gland itself.

LA SEMAINE MEDICALE.

September 5, 1906.

The Satellites of Alcoholism, By CH. FORNET.

Satellites of Alcoholism.—Fornet claims that there is a large number of substances which produce intoxications that belong to the same order as that produced by alcohol, and these he has denominated the satellites of alcohol. Excitants of all sorts are included under this term, but the ones to which he particularly calls attention are the aromatic liqueurs, coffee, tea, and spicy condiments, the use, or rather the abuse, of which he considers a signal danger.

LA PRESSE MEDICALE.

September 5, 1906.

1. General Considerations Regarding the Medical Service in War, By F. H. RENAUT.
2. Acute Dilatation of the Heart in Newly Born Infants and Blue Asphyxia, By JAIME FERREIRA.
3. Improvisation of Operative Means in the Field, By PIERRE SIKORA.

4. Prophylaxis of Peritoneal Infection by the Injection of Nucleinic Acid, By R. ROMME.

2. Acute Dilatation of the Heart in Newly Born Infants.—Ferreira says that he has employed for several years with good results, in cases where the infants were in a state of apparent death from this trouble, injections into the myocardium of one or two cubic centimetres of the following mixture:

℞ Camphor. .....0.30 gramme;
Sterilized olive oil,.....30.0 grammes.

BERLINER KLINISCHE WOCHENSCHRIFT.

August 27, 1906.

1. Obstetric Disturbances After Ventrifixation of the Uterus, By HOCHEISEN.
2. Miliary Tuberculosis and Scurvy, By GERONNE.
3. Concerning the Action of Quinine on the Coloring Matter of the Blood, Together with an Account of a Simple Method of Demonstration of Carbonic Oxide in the Blood, By ST. V. HOROSKIEWICZ and H. MARX.
4. Is the Modern Diagnosis of Syphilis Sufficient for Scientific Purposes? By O. ROSENBACH.
5. Ehrmann's Combined Resorcin and Röntgen Ray Treatment of Lupus Vulgaris, By REINES.
6. Statistics and Pathogenesis of Quinquaud's Phenomenon (*Concluded*), By E. LAUSCHNER.
7. The Modern Rudiments of Balneology, By L. MOHR.

1. Obstetric Trouble After Ventrofixation of the Uterus.—Hocheisen reports a case in which delivery was rendered extremely difficult because the uterus was bound to the abdominal wall as the result of a ventrofixation which had been performed twelve years before, so that it could not descend into the pelvis.

2. Miliary Tuberculosis and Scurvy.—Geronne gives the history of a case which presented the clinical symptoms of scurvy, but was found on autopsy to be one of subacute miliary tuberculosis of the lungs, serous membranes, liver, kidneys, bladder, spleen, and numerous lymphatic glands.

4. Diagnosis of Syphilis.—Rosenbach claims that in the later forms of syphilis the presence of the *Spirochæta pallida* should be demonstrated in order to render the nature of the disease indubitable.

5. Ehrmann's Combined Resorcin and X Ray Treatment of Lupus Vulgaris.—Reines reports six cases in which he has successfully employed this method. The duration of treatment varied from two to seven months. No recurrence was noted in one case at the end of six months, in another at the end of nine months.

MUENCHENER MEDIZINISCHE WOCHENSCHRIFT.

September 4, 1906.

1. Injuries Produced in the Internal Organs by the X Rays and Means of Protection Against the Same, By KRAUSE.
2. Contribution to the Technique of the Use of the X Rays, By MACHOL.
3. The Diagnosis of Aneurysms of the Aorta, By STRASBURGER.
4. The Reflex and the Innervation of the Diaphragm, By HESS.
5. Amputation of the Rectum, with Preservation of the External Sphincter, By WENZEL.
6. A Contribution to the Study of Mesenteric Cysts, By EVELT.
7. Yeast Treatment of Gastroenteritis in Children, By SITTLER.
8. A Case of Acute Circumscribed Œdema in Tabes Dorsalis, By KÜRBITZ.
9. A New Form of Hysteria in School Children, By SCHÜTTE.
10. A Ring Test for Acetone, By LANGE.
11. Heusner's Extravesical Urine Separator, By TROMP.
12. Instrument for Use in Pubiotomy, By GEISSLER.
13. Seven Cases of Hyperplastic, Stenosing Ileocæcal Tuberculosis Treated by Operation (*Conclusion*), By BAUM.

1 and 2. Protection Against Injuries from the Use of the X Rays.—Krause and Machol each deal with the protection which needs to be afforded both the patient and the operator during the use of the x rays. Krause suggests the use of various appliances, such as protective chambers, rubber gloves, lead spectacles, etc., while Machol describes with illustrations a rather complicated instrument designed for the same purpose.

4. The Reflex and the Innervation of the Diaphragm.—Hess believes that it has been definitely established anatomically and functionally that the innervation of the portion of the diaphragm bordering on the costal cartilages is derived from the intercostal nerves, and that the course followed by the reflex of the diaphragm is along the intercostal nerves, particularly the fifth.

6. Mesenteric Cysts.—Evelt reports a case in which a large cyst was removed from between the two peritoneal layers of the mesentery of the small intestine. Previous to the operation the tumor had been diagnosticated as an ovarian cyst.

8. Acute Circumscribed Œdema in Tabes Dorsalis.—Kürbitz reports the case of a man, forty-eight years old, suffering from tabes dorsalis, who suddenly developed an œdema of the face, confined principally to the upper lip and the upper lids. The conjunctival vessels were much injected. The œdema was sharply defined, did not itch, but caused a feeling of tension. The affected portions were pale, did not retain the imprint of the finger, and nowhere exhibited an inflammatory redness. The œdema was greater on the right side than on the left. On the following day it had involved the right cheek and lower lid, although the swelling of the upper lids and of the lip was somewhat less. The temperature of the affected parts was 0.7 to 0.8 of a degree higher than that of the other parts of the face. The general temperature of the body was not affected. The patient now complained of itching of the hands, and two little vesicular swellings were found on the third and fourth fingers of the left hand. The urine was of the usual quantity and contained neither albumin nor sugar. In the afternoon the patient complained of a pain in his abdomen and loss of appetite. He vomited some mucus once. No diarrhœa. On the next day it was evident that the swelling was gradually diminishing, and on the following day it had disappeared. The author inclines to the opinion that the disease was a form of urticaria.

11. Heusner's Extravesical Urine Separator.—Tromp describes Heusner's apparatus and reports four cases in which he has used it with satisfaction.

13. Ileocæcal Tuberculosis.—Baum's conclusions are: 1. The tuberculous ileocæcal tumor is a relatively benign, truly hyperplastic form of primary intestinal tuberculosis. It is possible that in its development the ordinary appendicitis plays a certain part. 2. The microscopic condition bears a great resemblance to that of hypertrophic lupus. The formation of tubercles the author observed rarely. 3. The intestinal stenosis, caused partly by the new formation of connective tissue, partly by cicatricial contraction in the submucosa, governs the not particularly characteristic group of symptoms. 4. The best operation in such cases is the resection of the ileocæcum. 5. A palliative operation is to be recommended when the patient is feeble, and the disease very severe. 6. Simple laparotomy is sufficient in all cases of extensive tuberculosis of the peritonæum.

ZENTRALBLATT FUER GYNAEKOLOGIE

September 8, 1906.

1. Ureteral Calculi. By F. SCHENK.
2. How Long Should One Wait After Birth Before Performing Plastic Operations? By A. SIPPEL.

1. Ureteral Calculi.—Schenk, in reporting a case, reviews the characteristics of ureteral calculi. They may originate in the kidney or in the ureter itself, although the latter are very rare and are usually small, causing no urinary obstruction. If the calculus is large

and rough, it may evoke complete anuria, especially if both ureters are affected, or, in the case of an unilateral occlusion, if the opposite kidney does not functionate, or a reflex anuria may arise. The calculus is usually impeded in its course in its narrowest portions, either just below the renal pelvis or at the ureterovesical junction. If the occlusion takes place above the junction of ureter and bladder it is known as paraischial, juxtavesical, intramural or intravesical occlusion. The diagnosis presents difficulties, but can be made in suitable subjects.

2. **Plastic Operations.**—Sippel has had two unpleasant experiences in operating upon lacerations six weeks' post partum. He believes that no definite statement can be made as to the time when these secondary operations should be performed. The arbitrary limit of six weeks must be discarded; for frequently the involution of the tissues is not yet complete and the succulence of the tissues causes them to bleed at times very seriously. No secondary plastic operation should be undertaken until the vaginal mucous membrane has been restored to its normal condition.

GAZZETTA DEGLI OSPEDALI E DELLE CLINICHE.

September 2, 1906.

1. The Relations Between Inflammatory Lesions of the Pericardium and those of the Aortic Valves, By SPIRO LIVIERATO.
2. A Case of Psoriatic Syphilides, By CARLO GALLIA.
3. A Case of Duchenne's Myosclerotic Paralysis, By GIAMMARIA FRATINI.
4. The Influence of Fatigue Upon Dogs in Whom a Portion of the Parathyreoid Has Been Removed, By ALDO MOSSAGLIA.
5. Diagnostic Value of Spontaneous Hæmorrhage from the Ear in Diseases of the Ear and in General Diseases, By LUIGI CHIERICI.

1. **Relation of Pericarditis to Endocarditis.**—Livierato discusses the question as to the possibility and the mechanism of transmission of inflammations of the pericardium to the endocardial lining, and vice versa. In his opinion this question can be solved only experimentally, and not by clinical and pathologicoanatomical observation. In dogs and in rabbits he exposed the pericardial sac by an aseptic incision and injected cultures of pneumococcus, bacterium coli, artificially rendered less virulent than ordinarily. The object was to induce a slow, subacute or chronic pericarditis. The wound was closed and the animals were watched. Autopsies were performed two months later. Of the fifteen animals operated upon, three died a few days afterwards. In the survivors there was always a chronic pericarditis, but even microscopical examination of the aortic valves failed to show any lesions in these structures. The theory of propagation of pericarditis to the endocardium should therefore be accepted with much reserve. The two processes which coexist so frequently clinically should, in his opinion, be regarded as two distinct localizations, occurring simultaneously or successively, but always independently of each other, as the result of the same general infectious cause.

2. **Psoriatic Syphilide.**—Gallia's patient was a young man of twenty-seven, who had been treated with injections of mercuric chloride (0.01 gramme daily), in all forty-five injections. The treatment was begun upon the appearance of the secondaries. All symptoms had disappeared after this course of treatment when, six months after the initial lesion, a psoriasis like eruption appeared on the extensor surfaces of the arms, on the chest, and on the anterior surfaces of the thighs. The local treatment consisted of the usual measures for psoriasis, the author believing that he was dealing with a coincidence of psoriasis and syphilis. This treatment proved ineffective, and injections of the basic salicylate of mercury, each of six centigrammes, were resorted to. In addition the patient received from one to two grammes of iodides daily. All signs of the syphilide disappeared after sixteen injections.

4. **Fatigue in Dogs Partly Deprived of Parathyreoid.**—Mossaglia found that when dogs in which he had taken away portions of the parathyreoid body (thymus gland) were exposed to fatigue, he could observe constantly the typical symptoms of convulsions and of marked albuminuria occurring as the result of the removal of the parathyreoid. The secretion of the parathyreoid probably, therefore, neutralizes the toxines of muscular exertion. It has been for a long time known clinically that when a woman is threatened with eclampsia she is more apt to have an attack after she has been exposed to severe muscular fatigue. The albuminuria observed in these animals shows the connection between the parathyreoid and the kidneys, and explains the albuminurias seen in athletes, etc., after fatiguing exertions.

5. **Hæmorrhages from the Ear; What They Mean.**—Chierici divides otorrhagias into two groups—those of local and those of general origin. It is not always possible to ascertain the cause of the hæmorrhage. Chierici deals particularly with the spontaneous forms of ear bleeding, excluding the traumatic cases. Among the local causes one of the least important and most easily diagnosticated is the rupture of bloody blebs occurring as the result of eczema or erythema of the external canal. There is also bleeding due to epithelioma, to furunculosis, and other local lesions of the external canal. In chronic otitis with mulberry granulations, mucous polyps, etc., may give rise to bleeding at slight provocations. Usually only a few drops are seen; occasionally a larger amount. In old cases of chronic otitis with vast destruction and caries we may have severe hæmorrhage from ulceration and finally perforation of the internal carotid. Fortunately this is rare, though thirty odd cases have been reported. In such cases a jet of blood issues from the ear (in one case from the Eustachian tube) with great force—pushing out cotton plugs sometimes. Compression of the carotid distinctly diminishes the flow. On the other hand, hæmorrhages from the sinuses, venous in origin do not issue with such force, are uninfluenced by carotid compression. Symptoms of meningeal involvement may appear in either class of cases. A curious affection has been described by Politzer as "hæmorrhagic otitis." It is accompanied by headache, noises in the ears, and the formation of blebs (phlyctenulæ) filled with blood and serum on the tympanic membrane. These break and discharge some blood. An interesting group of ear hæmorrhages, comparatively little known, are those occurring in general diseases. Among the diseases in which ear bleeding occurs are the eruptive and infectious fevers (typhoid; scarlet; smallpox); leucæmia; Bright's disease, hepatic cirrhosis; malaria; arterial sclerosis; heart disease; certain nervous diseases; suppression of menstrual or hæmorrhoidal bleeding, etc. The menstrual bleedings are characterized by their periodicity, and by the constant substitution of ear bleeding for the normal uterine flow.

LA RIFORMA MEDICA.

September 1, 1906.

1. A Submucous Lipoma of the Right Flexure of the Colon, By STEFANO D'ESTE.
2. Grave Anæmia and Septicæmia Due to the Micrococcus Tetragenes Albus, By A. BRUGNOLA.
3. Observations on the Treatment of Tuberculous Meningitis, By V. E. OVAZZA.

1. **Submucous Lipoma of the Colon.**—D'Este reports a case of lipoma of the colon. The tumor was situated within the lumen of the gut, at the right flexure, projecting into the colon like a polyp, but with a broad base. It could be felt through the intestinal wall when the abdomen was opened. It was enucleated from its niche in the submucosa and the gut was closed, the

patient making an uneventful recovery. Lipomata of the intestine are not very frequent; they usually arise in the submucous layer. As they give rise to obstruction and at times to invagination of the gut they should always be removed.

2. **Anæmia and Septicæmia Due to Tetragenes Infection.**—Brugnola reports two cases of septicæmia accompanied by grave anæmia in which he found the *Micrococcus tetragenes albus* in the blood and the spleen, and was able to cultivate this germ artificially. The germ was found absent in the blood of healthy persons and of patients with various other diseases. He demonstrated, furthermore, the marked hæmolytic power of the micrococcus in question. The anæmia of these patients, which were severe, in his opinion was no mere coincidence, but an effect of the action of the germ which caused the septicæmia. Two cases reported by Baccarani and by Arullani (*Gazzetta degli ospedali e delle cliniche,* 1905, page 885) also were found to be due to the *Micrococcus tetragenes.*

3. **Recoveries from Tuberculous Meningitis.**—Ovazza reports a case of basal meningitis presumably tuberculous, in a boy aged four years. The disease lasted six months, after which the boy was watched for five years. Complete recovery ensued. The treatment was entirely symptomatic, including chiefly ice bags and calomel. Basal meningitis is declared to be invariably fatal, Cotugno claiming that cases in which recovery took place were probably nontuberculous. Even after recovery, relapses are apt to occur which may be fatal. In this case no relapse was seen for five years.

THE JOURNAL OF NERVOUS AND MENTAL DISEASE.

September, 1906.

1. The Great Psychical Importance of Ear Disease, By W. Sohier Bryant.
2. Ear Affections and Mental Disturbances (*To be concluded*), By Emil Amberg.
3. The Question of Protopathic and Epicritic Sensibility and the Distribution of the Trigeminus Nerve (Third Branch), By Charles L. Dana.

1. **The Great Physical Importance of Ear Disease.**—Bryant writes that his attention was called to this subject by a patient who had chronical catarrhal otitis media with tinnitus, and auditory hallucinations. A regular course of treatment for the ear conditions stopped both the tinnitus and the hallucinations. Since then he has had occasion to observe three more patients who had much the same complaints which yielded to treatment in the same way. These cases are described, and the author thinks that the conclusion from his cases and the cases found in the literature point to some connection between ear disease and hallucinations of hearing other than mere coincidence. It is probable that hallucinations of hearing originate in subjective ear sensations in most cases. Cure of the coincident ear disease cures or assists the convalescence from the psychoses in a notable number of cases. Some cases of insanity appear to be excited by ear disease and the convalescence of insane cases is delayed by the presence of ear disease. Unilateral hallucinations of hearing are unquestionably due to unilateral ear disease.

3. **The Question of Protopathic and Epicritic Sensibility and the Distribution of the Trigeminus Nerve (Third Branch).**—Dana describes a case of total anæsthesia of the chin, just below and extending a little externally to the mouth, of the upper lip, and a portion of the inside of the nose and cheek, radiating about half way and within about an inch of the eyelid, and of the mucus membrane of the mouth and tongue, involving the whole inner surface of the mouth and left side, including the gums of the lower and upper jaws and the palate, and the tongue. The patient had been operated upon for an inveterate tic douloureux, involving only the inferior branch of the trigeminus, which was cut cleanly off at its issue from the dura mater. The patient showed an absolute loss of all forms of sensibility to touch, pain, temperature, deep pressure, and movements of the parts. A somewhat similar condition was shown by another patient. This patient had an absolute loss of sensation to light touch and to heavy touch, loss of localization, of sense to heat and cold, while very heavy pressure seemed to be felt, the area being about the same as in the first patient. The two cases are cited by Dana in reference to a monograph by Dr. Head, Dr. Rivers, and Dr. Sherren, published in the summer number issue of *Brain,* with the title: The Afferent Nervous System from a New Aspect. The contention is that the afferent nervous system is composed of two different systems, which conduct to the brain different forms of sensibility. The protopathic system (somatic and visceral part), which, as a whole, consists of fibres of sensibility which supply the skin, the viscera, and all parts of the body, inside and out. It furnishes a low degree of sensibility to the viscera and to the skin, and a special deep kind of sensibility to the muscles, joints, and tendons. This system enables one to appreciate a sense of pain, and temperature, and location, and position, though not to a very delicate extent. The epicritic system which enables us to appreciate light touch, the points of the compass, localization, and minor degrees of temperature, ranging between 22° and 40° C. Both systems seem to be able to appreciate the sense of pain, but the epicritic sensibility furnishes a more delicate and localized appreciation. Protopathic fibres carry sensations which are badly localized, widely diffused, and sometimes referred to other parts than that of the stimulation. The protopathic fibres are incapable of appreciating light touch, and minor degrees of heat and cold. and pain appreciation is a diffuse tingling and thrilling sensation. It seems from Dr. Dana's cases, therefore, that the differentiation of afferent nerves to two kinds, as applied to the body and limbs, does not seem to apply to the head.

AMERICAN JOURNAL OF SURGERY.

September, 1906.

1. On the Frequency of Blindness Due to an Affection of the Accessory Sinuses, By H. M. Fish.
2. Cancer of the Breast. Remarks on the Necessity of Early Radical Operation, By J. C. Stewart.
3. Ether Narcosis by Rectum. Report of Cases, By J. A. Stucky.
4. An Improved Postoperative Rectal Tube, By J. M. Lynch.
5. A Report of Two Cases of Hydatid Cyst of the Liver, By I. S. Haynes.
6. An Interesting Case of Congenital Malformation of the Mouth, By E. K. Macomber.
7. Report of a Case with Hysterical Symptoms Upon Whom the Mastoidotympanic Operation Was Done. Both Sphenoidal Sinuses Were Opened and Partial Turbinectomy Performed Upon Three Turbinates, Besides Much Local Treatment, By W. S. Bryant.

1. **On the Frequency of Blindness Due to an Affection of the Accessory Sinuses.**—Fish states that his personal experience rather than information derived from any of the existing textbooks led him to conclude that obscure ocular lesions were sometimes to be regarded as evidences of an affection of the cavities surrounding the eyes, and to treat them as such, even though the classical symptoms of sinusitis were absent. The results of treatment in a number of cases verified his hypothesis. While the majority of cases either get well spontaneously, or are cured by the customary remedies, it must be admitted that some result in partial or total blindness, and these, he thinks, might be cured by direct treatment of the sinuses. The treatment consists in what he calls a restoration of the normal circulation by drainage of the sinuses. Cases of corneal lesion, measles, erysipelas, cerebrospinal menin-

gitis, and syphilis are mentioned as giving successful results by the timely treatment of the sinuses.

2. **Cancer of the Breast.**—Stewart thinks it is generally admitted that twenty-five per cent. of cases of this disease can be cured by a radical surgical operation. The fact that many of the curable cases are allowed to die by neglect or by bad operative procedures is due in part to the neglect of the general practitioner who does not operate, and in part to the fact that some of those who operate are not qualified or are unwilling to perform the extensive operation which is necessary to insure success. The remedy consists in education of the profession until no one will honestly doubt the curability of this form of cancer, and no one who is untrained will attempt to the necessary thorough operation. All breast tumors in women above thirty years of age should be promptly referred to a surgeon, the great majority of such tumors being malignant. Successful treatment will often depend upon making an operative diagnosis by an exploratory incision before cancer can be demonstrated. Essentials to success are: 1. Removal of the breast without disturbing its attachments to overlying skin or underlying fascia and muscles. 2. Removal of the pectoral fascia, and both muscles still attached to the breast. 3. Removal of the axillary lymph nodes, fat, etc., by a clean dissection. 4. Avoidance of cross section of infiltrated tissue. 5. Perfect hæmostasis. 6. Wound closure and healing by first intention.

3. **Ether Narcosis by Rectum.**—Stucky is of the opinion that this method of narcosis is especially desirable for operations about the head, neck, and face. The patient passes under its influence more quickly and recovers from it more quickly than by inhalation. The absence of rectal irritation in recent practice has been due (1) to more thorough preparation of the patient, (2) to better quality of the ether used, (3) to improved administration. Before administering the ether the bowels must be thoroughly opened. The ether bottle is immersed during administration in a water bath at 80° to 90° F. (six degrees below its boiling point), the ether is vaporized by air pressure through an afferent bulb and tube, and delivered through a stiff rectal tube with a single opening. The tube is inserted from ten to fourteen inches. Should the patient become too deeply narcotized the ether should be massaged out of the bowels, and the latter again distended with oxygen. A small dose of morphia before narcosis will inhibit peristalsis and facilitate etherization. The author thinks it certain that the apparatus will be simplified, the technique of administration better understood, and the method the one of election in selected cases.

ANNALS OF SURGERY.

September, 1906.

1. The Serum Therapy of Tetanus, By N. JACOBSON and H. O. PEASE.
2. The Treatment of Tetanus by Magnesium Sulphate, By J. A. BLAKE.
3. Early Operation in Traumatic Intracranial Hæmorrhage, By F. W. MURRAY.
4. Report of a Case of Tumor of the Carotid Body, By J. C. DA COSTA.
5. Shortening of the Round Ligaments by Subperitoneal Ventroaponeurotic Fixation, By J. M. FISHER.
6. An Experimental Study of Suture of Arteries, with a Description of a New Suture, By G. M. DORRANCE.
7. Combined Superior Tibiofibular and Astragalofibular Osteoplasty as a Means to Prevent Shortening of the Leg After Extensive Osteomyelitis of the Tibia Occurring During Adolescence, By M. KERR.
8. The Relation of Technique of Nurses and of Hospital Apparatus to the Healing of Wounds, By C. P. NOBLE.

1. **The Serum Therapy of Tetanus.**—Jacobson and Pease recall the fact that the tetanus bacillus inhabits the surface dirt, but is incapable of developing in atmospheric oxygen. The bacillus and its spores have a most tenacious vitality. It is frequently present in the intestinal tract of animals, from which it follows that all wounds received in stables or contaminated with animal discharges are to be greatly feared. It is essential for the production of this disease that the bacillus or its spore enter the tissues through a lesion of the skin or mucous membrane. Even within the tissues the bacillus can produce its toxine only under certain conditions. Minute quantities of the toxine may produce the most powerful effect, and only slight development of the bacillus is required for the production of several fatal doses of poison. The bacillus is usually present only at the site of injury. The period of incubation between the site of the injury and the nerve centres is seldom less than three days. While tetanus antitoxine will neutralize the toxine outside the body there is as yet no evidence that it has any effect on the toxine which is passing along the axis cylinders of the nerves. The antitoxine should be administered before the motor nerves have absorbed any toxine. Injured nerve trunks should be treated locally as well as subcutaneously. Prophylactic injections into the muscles may be efficient in some cases, but after tetanus is fully established serum therapy promises little benefit.

2. **The Treatment of Tetanus by Magnesium Sulphate.**—Blake states that this method was suggested by Meltzer's discovery of the inhibitory action of this substance upon nerve tissues both as to afferent and efferent impulses. Absorption of the drug from the spinal canal is slow, and definite action upon the nerve trunks may be obtained, the general effects upon the higher centres not appearing for several hours. Since intraspinal injections relieve spasm it must be inferred that the drug produces a block of nerve impulses by direct action on the nerve trunks. Four cases have thus far been treated by this method, only one of which recovered. In the author's case, which was successful, the injections controlled the convulsions from twenty-nine to thirty-seven hours. Prior to treatment with magnesium sulphate the author's case was treated with tetanus antitoxine, several injections being made into the cervical cord without apparent effect. The author's impression is that, though we cannot be certain of the effect of magnesium sulphate, it is reasonably safe and offers a means of modifying the convulsions and relieving pain as no other drug has done.

3. **Early Operation in Traumatic Intracranial Hæmorrhage.**—Murray states that there should be a more frequent resort to exploration of the skull when this injury is suspected. Intracranial hæmorrhage proceeds most frequently from the middle meningeal artery, next from the vessels of the pia, and next from the venous sinuses of the dura. It may be divided into extradural and subdural. The former is due most frequently to rupture of the middle meningeal artery, next to injury of the pial vessels, and occasionally to injury of the venous sinus. Subdural hæmorrhage proceeds most frequently from injuries of the vessels of the pia mater, next from rupture of the middle meningeal artery, and occasionally from injury of a venous sinus. The author thinks that more frequent resort to exploratory operation in the treatment of these forms of hæmorrhage is clearly indicated.

4. **Report of a Case of Tumor of the Carotid Body.**—Da Costa thinks the removal of such a tumor is a very formidable operation. It may be necessary to tie all the carotid arteries, and injury to nerves may have serious consequences. The danger of death is not the only one in ligating the common carotid, for hemiplegia may follow as the result of thrombosis, embolism, or cerebral softening. The danger of brain symptoms is greater if the patient has passed middle life, arterial atheroma being a complication which is by no means infrequent. If profuse bleeding lowers

the blood pressure a satisfactory restoration of the circulation may be wanting. Owing to the danger in ligating the common carotid many surgeons endeavor to avoid this procedure in removing carotid tumors. As to nerve injury six cases are reported in which injury has been sustained by the sympathetic, the pneumogastric, the hypoglossal, the facial, or the recurrent laryngeal. The growths in question should not be touched unless they are dangerous to life. If they are growing rapidly they must be removed in spite of the danger.

6. An Experimental Study of Suture of Arteries, with Description of a New Suture.—Dorrance describes his method for transverse, longitudinal, or oblique injuries of arteries. He reports fourteen operations, nine on horses and five on dogs. His illustrations give a better idea of the procedure than is possible with a description alone. His results and conclusions are as follows: 1. Only one secondary hæmorrhage occurred and this was traceable to infection from without, as shown by microscopical examination. This is believed to indicate a distinct advantage over other methods. 2. Under the aseptic conditions employed in human surgery the results should be perfect, as thrombosis can usually be traced to infection. 3. Whatever form of suture or suture material may be used, the principle of approximating intima to intima is absolutely essential. 4. The suture must not be involved in the blood current.

7. Combined Superior Tibiofibular and Astragalofibular Osteoplasty.—Kerr concludes from his experience that the periosteum can be relied upon to regenerate new bone, that it is not necessary to wait two and a half months for evidences of repair on the part of this membrane, and that it is even better to remove the shaft of the tibia entirely as soon as it is apparent that the vitality of the involved bone is sacrificed. On account of the difficulty of securing perfect asepsis it is advised to institute through and through drainage, with gauze or tubes just before the edges of the periosteum are sutured together. The principal point of value is that the fibula be substituted for the tibia as the pressure bearing bone, so that continued growth in the length of the leg may be maintained. The procedure which the author would suggest is the following: 1. Remove all infected bone and suture the edges of the periosteum together, except at the ends, and drain. Prevent deformity, as far as possible, by using a splint or cast. 2. After suppuration has ceased destroy the upper tibiofibular joint and cause ankylosis at that point. Divide the lower end of the fibula on a level with the upper surface of the lower epiphysis, if this is not destroyed, or the astragalus if the epiphysis of the tibia has been sacrificed to the disease, and place the end of the fibula at the new situation, either the lower epiphysis of the tibia or the astragalus.

EDINBURGH MEDICAL JOURNAL.

September, 1906.

1. An Introduction to the Clinical Study of Vascular Disease, By W. Ewart.
2. Blastomycosis of the Skin in Man, By A. Primrose.
3. Observations on Perforated Gastric and Duodenal Ulcer Based on a Personal Experience of Forty-six Operations, By A. Miles.
4. The Value of Sodium Salicylate in Scarlatinal Arthritis and Other Joint Infections, By R. Stockman.
5. Personal Experience of Poisoning by Charcoal Fumes, By R. A. Fleming.
6. Ovary Free in the Pelvic Cavity, By H. G. Melville.
7. Notes on a Case of Strangulated Hernia in Which Two Loops of Small Intestine Were Involved, By G. L. Chiene.

1. Clinical Study of Vascular Disease.—Ewart offers the following summary: 1. The study of vascular disease requires a careful elaboration of the elements. 2. A complete and accurate nomenclature is desirable. 3. Uniformity of terminology is imperative since the physiologist, the pathologist, the pathological anatomist, and the clinician must cooperate. 4. More physiology and experimental pathology are required as additions to the pathological anatomy and clinical investigation already contributed. 5. The tendency to merge prevailing divergent types into one title is not conducive to progress. Arteriosclerosis is too large a heading for the practical purposes of clinical definition. 6. A better distinction between the functional arterial diseases and the structural is desirable. It is difficult to distinguish clinically the simulated arteriosclerosis from the true. 7. Separate investigations should be made concerning the capillaries, the arterioles, the sphygmology of the long arteries, and the aorta. 8. Clinical investigations have already been made in connection with the distribution of arterial disease in the various systems of the circulation, in their regional relations to a mechanical and a toxic ætiology. 9 The arterial wall offers opportunities for analytical study which have not yet been fully worked out.

3. Perforated Gastric and Duodenal Ulcer.—Miles summarizes his conclusions as follows: 1. The liability to perforation is as great in the male as in the female. 2. Perforation usually occurs earlier in females. The prognosis is best in early life. 3. There is usually a history of severe indigestion, but rarely of hæmatemesis. 4. Premonitory symptoms of perforation are occasionally present. 5. No constant factor will account for the rupture of the ulcer. 6. Almost all gastric perforations are on the anterior wall and toward the lesser curvature. The duodenal perforations are almost invariably in its first part and on the anterior wall. 7. There is usually but one perforation. 8. The size of the perforation varies from a pin's head to that of a three penny piece. 9. Suddenness of onset, overpowering pain, abdominal rigidity, and severe shock are symptoms of perforation. 10. Vomiting is not a common symptom. 11. Percussion gives unreliable information. 12. The seat of maximum pain is a guide for the incision. 13. Apparent improvement is often very deceptive. 14. Opium is a dangerous remedy, as it masks the symptoms. 15. There is no constant relationship between the ensuing peritonitis and the size of site of the perforation, or any other single factor. 16. The abdomen should be opened as early as possible by a vertical incision. 17. It is seldom necessary to open the stomach to find the perforation. 18. An omental graft should be secured over the line of sutures. 19. Excision of the ulcer is not to be recommended unless it is imperative. 20. If the closure of the ulcer has resulted in serious narrowing of the pylorus gastroenterostomy should be performed, or as an alternative, pyloroplasty 21. The abdomen should be washed out and the head of the bed raised to favor drainage. 22. Saline injections should be given. After twenty-four hours fluids may be given by mouth. 23. Complicating after conditions are temporary gastric fistula, pneumonia, bronchitis, etc. 24. The sooner the operation is performed after perforation the better the chance of recovery.

4. The Value of Sodium Salicylate in Scarlatinal Arthritis and Other Joint Infections.—Stockman notes that pain in the joints with synovitis and swelling may occur with scarlet fever either during the febrile period or during convalescence. Though this is called scarlatinal rheumatism, it is not true acute rheumatism, but is due to the specific poison of scarlet fever. In other cases, however, the rheumatic symptoms are so marked that the conclusion becomes reasonable that an attack of scarlet fever predisposes to the infection of acute rheumatism. In a series of cases observed by the author those which were not treated with sodium

salicylate seemed to do better than those which received this drug. In other words, as sodium salicylate has no beneficial effect on the general course of scarlet fever it also has no effect on the joint affection. If, however, there is a true joint infection the salicylate will exert its usual specific action irrespective of the scarlet fever poison.

Letters to the Editors.

TO REMOVE STAINS OF POTASSIUM PERMANGANATE.

267 WEST FORTIETH STREET,
NEW YORK, *September* 15, 1906.

To the Editors: This small contribution has only been called forth in the hope of saving trouble for my confrères. Perhaps it is already an old story. In fact, I have been doing this same thing for such a long time that I had imagined it to be a matter of general knowledge. However, not long since a fellow practitioner expressed so much surprise over it, I ventured to ask if it were not generally known. He, a very intelligent man, had neither heard nor read of it.

To be brief, potassium permanganate is too useful a drug to be put aside because it stains the clothing or the fingers of the operator. The removal of these stains is so simple that one wonders why oxalic acid is so much used.

I have used potassium permanganate freely, and have never failed to immediately remove its stains by using hydrogen peroxide. If the office towels or the patient's linen are stained, there is no need to hurry. The stains will come out just as readily, no matter how old they may be.

Quite frequently potassium permanganate is used as a mouth wash or as a paint for the tonsils. A textbook recommends its use in these conditions, but warns against its blackening the tissues and the teeth. This warning can be discarded, for pure hydrogen peroxide will immediately bleach the parts.

The operator who uses the permanganate method of hand sterilization will find complete satisfaction by dipping the hands in a bowl of hydrogen peroxide diluted to just the point of sufficient strength. If used in full strength, the only thing to be considered is the cost. However, it will be found a boon to those whose hands get rough after repeated permanganate and oxalic acid washings.

In short, the advantages of this nonpoisonous decolorizer need only be mentioned to be appreciated.

RICHARD A. TAYLOR.

THE INTERNAL SECRETIONS.

2043 WALNUT STREET,
PHILADELPHIA, *September* 19, 1906.

To the Editors: In your issue of September 15th Dr. Theodore G. Davis publishes what I suppose purports to be an acknowledgment that he misquoted me in his article. As we are all liable to such errors, I will refrain from any further criticism on this score.

I regret, however, that he should adduce no proof whatever to offset my statement that the estimate of my work he publishes in his article of August 11th is gratuitous and false. As stated in my previous letter, and as emphasized in my work, I regard the internal secretion of the thyreoid as the agent which sustains or upholds indirectly the functional activity of the adrenals, and iodine (page 777) as "the medicinal prototype of Nature's own adrenal stimulant." This action is the keystone of the whole edifice, just as the stimulating action of digitalis on the heart is characteristic of this drug. Now, Dr. Davis, having misquoted me as including iodine among the *depressants* of the adrenals, proves thereby that he has failed to grasp even this elementary principle of my doctrine. How can he possibly, in all fairness, refer to my work as "a determined effort to support a preconceived theory"—a theory which he, the critic, does not even understand?

Were it even otherwise, there are two ways of interpreting the labors of a colleague; a generous way and an ungenerous way. Dr. Davis would have adopted the former, I am sure, if it had occurred to him that it is *because my views are sound* that, as stated in the preface, page xix, "solidly established data have fallen normally into line." The first volume—a mere outline of my views—which he acknowledges, contains "a great amount concerning the suprarenal gland," is vastly surpassed in this particular by the forthcoming second volume. Can any reasonable man believe that such a mass of solid evidence could possibly be tacked on to a "preconceived theory"? A scientist capable of formulating such a theory would be a wonder, indeed. I lay claim to no such talent, and my plan of work is far simpler: I collect all the sound evidence I can muster on a given subject, and work out a solution which accommodates all *facts* and which (as "control") fits with all other solutions worked out in the same manner.

Now, Dr. Davis's article is "a résumé of recent literature relating to the suprarenal glands." He is therefore eminently prepared, with the aid of *facts* published in other works, including mine if he pleases, to break down my interpretation of the functions of these organs and thus prove to the readers of this journal that his derogatory remark was warranted. He will surely realize that this is the only straightforward and honorable—and therefore professional—course he can adopt under the circumstances, unless he acknowledges that a too hasty perusal of my work has misguided his judgment.

C. E. DE M. SAJOUS.

THE RIGHT TO PRACTISE IN BRAZIL.

LAVRAS, E. DE MINAS,
BRAZIL, *August* 30, 1906.

To the Editors: I have thought the following statement of requirements for foreign physicians to practise in Brazil might be of interest to some of your readers.

The Federal law which is in force in all the States has the following provisions:

1. Professors in any foreign college or university, bringing proof of this, and that they are legally qualified to practise, may be allowed to practise in Brazil by presenting these proofs to the Minister of the Interior.

2. Authors of important works upon any medical or surgical subject may be permitted to practise by the same authority after one of the two medical colleges has passed upon the value of the work.

3. All other foreign physicians are required to comply with the following conditions:

1. Present a diploma from some recognized medical college or university, endorsed by the minister or consul of Brazil to the country from which they come, and bearing revenue stamps to the amount of about $40.00.

2. A letter of identification from some well known person.

3. A statement from the judge of the criminal court where they are residing in Brazil that there is nothing in the records of the court against their character.

These documents having been presented to the secretary of one of the two national medical colleges (there are but two medical colleges in Brazil) in the month of November, the faculty appoint a day in December when an applicant may appear to begin the examinations, which extend over three or four months. The examinations are in four series, the first two be-

ing written, oral, and practical upon each subject; the others are practical only.

There are eighteen distinct examinations, on as many different days. There is a different examining board, composed of three members of the faculty, for each subject and a fee of about $35 is paid for each series. There is an additional fee of about the same amount, payable when the diploma is approved. Failure to pass satisfactorily any examination invalidates all. Thus the fees provided by law amount to nearly two hundred dollars, besides which must be added the expense of living from three to four months in Rio de Janeiro or Bahia. It is rarely that a man gets through for less than a thousand dollars, and many spend twice as much, and when one does not pass the first time the expense is almost doubled. One dentist I knew spent about $3,000 before finally getting his diploma approved.

In view of these facts, if any of the *Journal's* readers are expecting to come to Brazil to practise medicine, it would be well for them to come prepared to take advantage of one of the first two provisions of the law—be a professor or write a book.

H. S. ALLYN.

Proceedings of Societies.

AMERIAN SURGICAL ASSOCIATION.

Annual Meeting, held in Cleveland, Ohio, May 30 and 31 and June 1, 1906.

(*Concluded from page 621.*)

The President, Dr. ALBERT VANDER VEER, of Albany, N. Y., in the chair.

A New Method of Utilization of the Sac in the Radical Cure of Hernia.—Dr. ROSWELL PARK, of Buffalo, said the method consisted simply in utilizing what was usually entirely dissected away, namely, the sac, and in making of it the material with which the canal itself was closed. Briefly, the procedure was as follows, especially with inguinal hernia: To isolate the sac, then to empty it, and to free it of all superficial fat. It was thus separated from the cord and made to appear as a distinct, separate structure up to the level of the internal ring. His usual procedure for many years had been to penetrate the abdominal aponeurosis at a point opposite the internal ring, with forceps made for the purpose, with an alligator jaw, although this was not at all essential. The forceps introduced through this opening was made to appear lower in the inguinal canal and here to seize the sac and, in the act of withdrawal, pull it after it, and thus bring it out at the puncture. Here he formerly twisted the sac, ligated the neck, and tacked it in place with one or two chromicized sutures. He had now modified the procedure in such a way that, instead of cutting off the sac outside the point where it was fastened, he utilized it as a band of material with which a coarse, but strong suture was made, binding together the lateral margins of the inguinal canal. Of course, much would depend upon the thickness and length of the sac. Old and large sacs would be far too cumbersome for this purpose, and short sacs would be too short to serve as sutures when twisted into a cord. These difficulties were easily overcome by either reducing the sac, cutting out a strip which could be used for the purpose in one case, or in the other lengthening it by a division, by which a sac two inches long could be so divided as to furnish a cord five or six inches in length.

Having prepared the sac, or so much of it as was needed for the purpose, one might now use it two or three ways. One might thread it into the eye of a very large needle, such as was used for carrying the silk by which we managed a chain saw, or one might use a Cleveland ligature carrier, passing it through the tissues on either side as if it were an ordinary needle, then grasping the end of the sac and pulling it back through the openings thus made as the instrument was withdrawn. Sometimes he had passed into the end of the sac a silk suture, threading it into the larger needle and making it serve as a means of traction, the procedure varying a little with the density and strength of the sac wall. Again, in certain cases that portion utilized might be divided into two halves, making, as it were, two tapes which could be used for making a shoe lace suture of the pillars of the ring by either of the expedients just mentioned. When the ends were drawn down at the lower edge of the ring they might be tied and fastened with a suture.

The advantages of this method were: 1. It afforded almost as perfect and complete a method of closure of the inguinal canal as any other did. 2. It utilized a portion of this sac which would otherwise be quite discarded, and substituted fresh animal suture of the patient's own tissue for foreign animal material, while, at the same time, under ordinary circumstances, its sterility might be guaranteed. 3. While he had not had an opportunity to demonstrate the fact, he thought it fair to assume that such tissue so used did not disappear by absorption, like tendon or other foreign material, but rather was organized and served as an additional means of strength and security, forming, as it were, a serious of bridges or transverse fastenings by which the obliteration of the inguinal canal could be more securely attained.

Of course, the method could not be applied in all cases and could not be expected always to displace other procedures, nor should one ever think of adopting it when he was not operating deliberately and in the absence of all infectious processes. The same principle was applicable to many cases of femoral hernia, although here it would necessarily require some modifications. He had not yet been able to resort to this procedure in a large number of cases, but in those in which he had so far used it it had given very satisfactory results.

The Use of Thyreoid Extract to Shorten the Coagulation Time of the Blood.—Dr. WILLIAM J. TAYLOR, of Philadelphia, advised that thyreoid extract be used in cases of hæmophiliacs where a surgical operation was demanded, or where they had received any accidental wound, and also in patients whose blood had been altered by disease. He stated that normal blood was not affected in any way by the use of thyreoid extract, even where its use had produced distinct constitutional effects; that it acted only upon blood which lacked fibrin ferment. He mentioned the fact that A. E. Wright had found that the coagulation time of the blood was lengthened by starvation and shortened immediately after a hearty meal, and the efficiency of the action of calcium chloride was increased by combining it with an albuminous substance, such as an aqueous extract of thymus, thyreoid, testicle, or gastric or other mucous membrane.

He cited three cases of bleeders in which thyreoid extract had been used with marked benefit, and mentioned one instance in which it had been used in profound jaundice due to obstruction of the hepatic duct. He recommended that in all cases of delayed coagulation time, suspected or probable, the blood should be carefully tested and the dried thyreoid extract be given in three grain doses, in capsules, three times a day, and stated also that it had been used with very great effect in several cases of purpura and of spongy and bleeding gums occurring during the course of typhoid fever.

Hyperplastic Tuberculosis of the Intestines and Peritonæum.—Dr. CHARLES B. NANCREDE, of Ann Arbor, Mich., put on record another instance of that rare manifestation of tuberculosis in the intestinal

tract, the hyperplastic form, instances of which had been reported during the past fifteen or eighteen years. He gave a brief historical account of the cases reported by various authors. The treatment resolved itself into excision of the affected portion of the bowel. Doubtless fresh air, sunshine, tonics, and the ordinary measures addressed to the treatment of tuberculosis located elsewhere might serve as roborants and increase the peritoneal tissue resistance, as well as that of other parts, but no direct benefit could be expected, as was the case in certain instances of ordinary tuberculous peritonitis.

A Review of 1,500 Operations Upon the Gallbladder and Bile Passages, with Special Reference to the Mortality.—Dr. WILLIAM J. MAYO, of Rochester, Minn., said the mortality in the 1,500 operations had been 4.4 per cent. In the last series of 500 it was 3.2 per cent. Every death in the hospital without regard to time or cause, was counted as affecting the operative mortality. Of operations for uncomplicated gallstone disease, the mortality, ⅓ of 1 per cent., was due to accidental causes. Complications the result of delay caused more than $^{9}/_{10}$ of the death rate; 95 per cent. of all complications occurred in patients who had had marked evidences of gallstone disease and an ample period of good health for a safe operation.

The now recognized necessity for an early operation in appendicitis was due to the former high mortality attending secondary abdominal complications. The same reasons hold good for an early operation in gallstone disease, only it was involvement of liver ducts instead of peritonæum, which gave fatal complications.

Of 845 cholecystostomies, the mortality was 2.13 per cent. In the last series of 500, it was 1.47 per cent. —normal operations for uncomplicated gallstones in an otherwise healthy gallbladder.

Of 319 cholecystectomies, the mortality was 3.13 per cent. In the last series of 500 it was 1.62 per cent. The operation was indicated in all cases in which the gallbladder had lost its function, especially in cystic duct obstructions and in malignant disease. It was a slightly more serious operation than cholecystostomy, but had a growing field of usefulness in all cases in which the gallbladder was involved.

The Serum Therapy of Tetanus.—Dr. C. A. PORTER, of Boston, emphasized the rational use of serum in acute or severe subacute tetanus. While some of the details upon which it had been founded might subsequently require changing, such a consistent method of attacking tetanus toxines, resting in the main upon well founded experiments, had the merits of simplicity. In carrying out this treatment one should picture to himself the toxines traveling along the motor nerves of the arrested part, even upward toward the higher motor ganglia, and also by absorption through the lymphatics, entering the general blood current, to be brought directly to the central ganglia through the motor nerve endings of the rest of the skeletal muscles. Antitoxine, to be effective, must reach the poison before it had entered the motor tract, or must by direct injection into the tissues immunize them in anticipation of the arrival of the after coming toxine, or neutralize it locally before a stable compound had been formed.

In the treatment he recommended the following: 1. Immediate intravenous and subcutaneous injections to neutralize the circulating toxine. 2. Immunizing or neutralizing injections at the highest level which the severity of the symptoms appeared to justify; directly into the cord, as advocated by Rogers, or into the higher motor nerves such as the hypoglossal and spinal accessory, as suggested by the author. 3. Peripheral intraneural injections as near to the cord as possible. Where amputation was indicated or allowed, there was positive experimental evidence that nerve section would isolate the toxines in the limbs. 4. Lymphatic absorption would be diminished by the application of Bier's principle of passive hyperæmia or by circumcision of the limb. 5. Parenchymatous injections, especially into the muscles, might be of distinct value in addition to subcutaneous and intravenous injections. 6. If possible, the local focus should be thoroughly eradicated. 7. We had no right to neglect symptomatic treatment. 8. When once the disease had progressed beyond a certain stage, animal experimentation gave us no ground for hope that any treatment whatever could be successful.

The Treatment of Tetanus by Magnesium Sulphate. —Dr. JOSEPH A. BLAKE, of New York, said that from his experience in human tetanus intraspinal injections relieved spasm, so it must be inferred that they produced a block of nerve impulses by direct action on the nerve trunks. So far their employment in human tetanus had not been attended by uniform results. This might be due to different degrees of susceptibility on the part of the patient, and partly to variations in technique or lack of experience in the use of magnesium sulphate on the part of the medical attendant. So far as he could ascertain, only four patients with tetanus had been treated with magnesium sulphate. Of this number, only one had recovered, and this was his own patient. The case was one of acute tetanus in a boy of fifteen. The injections controlled the convulsions in this patient for periods varying from twenty-nine to thirty-seven hours each. The author's impression of this drug was that, although we could not be certain of its effect, yet it was reasonably safe and offered a means of modifying the convulsions and relieving pain in a way no other drug had approached. For those reasons alone it was worthy of a more extended trial.

The Present Status of Our Knowledge of the Serum Therapy of Surgical Affections.—Dr. CHARLES A. POWERS, of Denver, read a paper thus entitled (to be published).

Bacteriological Studies in the Surgical Clinic.—Dr. WILLIS G. MACDONALD, of Albany, N. Y., spoke, first, of the necessity of constant cultural work in order that the personnel of the clinic should be made alert and feel a personal responsibility. Second, to establish consistent daily detail work, both in the wards and in the operating room, without constant criticism. Third, to be able to trace to its source occasional infection and remedy it before serious damage was done. Fourth, to establish the inefficiency of many plans recommended in medical literature which were essentially fallacious, as, for example, the fourfold gauze mask. There remained another and equally important function of surgical bacteriology, namely, its purely clinical and diagnostic value in tuberculosis, tetanus, actinomycosis, and other infectious processes.

Traumatic Gastric and Duodenal Ulcer, Due to a Direct Blow, Revealed by Operation.—Dr. A. F. JONAS, of Omaha, said the progress of cases of extensive contusions of the stomach and intestines was rapid; death occurred early unless prompt surgical aid was brought to bear. It was difficult to judge correctly in cases where the injury had produced a contusion or laceration of a part of the gastric parietes, as, for instance, the mucosa, or where a hæmatoma had developed between the coats of the gastric wall, i. e., between the mucosa and the muscularis. Illustrative cases were cited showing the value of prompt surgical intervention.

Dr. A. J. OCHSNER, of Chicago, reported his further investigations upon the anatomy of the duodenum, and detailed his clinical observations.

The Treatment of Gastric and Duodenal Ulcers and Benign Obstructions of the Pylorus.—Dr. ARCHIBALD MACLAREN, of St. Paul, Minn., said the question of how we might distinguish between medical and sur-

gical gastric ulcer was of the greatest importance to the medical world to-day. It was known that some ulcers cured themselves, and that many gave no symptoms. Shattuck said: "There are only two conditions occurring in gastric ulcer which demand operation: (1) Perforation; (2) obstruction."

He agreed with him as to the necessity of operating in these two classes. In perforation due to an acute ulcer, if the opening could be closed, the wound sponged or irrigated, and a large suprapubic drain put in soon after operation, a large percentage would recover, with the aid of Fowler's position. In obstruction cases the condition was mechanical and demanded mechanical relief.

One other class should be added to this list, i. e., relapsing gastric ulcer; the ordinary medical treatment was useless in these cases; proper medical treatment was putting the patient to bed, avoiding all food by the mouth for some days, and supplying water and nourishment by the rectum. He reported two cases lately seen of congenital obstruction. One of the patients died after gastroenterostomy, and the other without an operation.

Early Operations for the Cerebral Hæmorrhages of Childhood.—Dr. Charles H. Frazier, of Philadelphia, said that in order to put on a rational basis the surgical treatment of epilepsy, greater discrimination must be made in the selection of cases. No opportunity should be lost in operations upon epileptic subjects to observe as closely as possible the existing pathological conditions. A more intimate knowledge of the pathology of the disease was necessary for the establishment of a basis upon which to determine the propriety of operative intervention and its character. Epilepsy developed sooner or later in from thirty to fifty per cent. of cases of infantile hemiplegia. In many of these the lesion had been proved by autopsies to have been a hæmorrhage, and in children the hæmorrhage was often either on or near the cortex rather than intracerebral, as in adults. The tendency toward secondary degenerative changes, such as atrophy and softening, the greater disposition in epileptic subjects toward mental defects, especially idiocy, and the otherwise hopeless nature of the disease constituted the principal arguments for surgical intervention.

Intussusception.—Dr. Ellsworth Eliot, Jr., of New York, contributed a paper on acute intussusception in infants and young children, in which he reported seven cases, with four recoveries and three deaths.

Dr. W. Joseph Hearn, of Philadelphia, reported a case of resection of the sigmoid flexure of the large intestine, and an inch and a half of the fundus of the bladder, for carcinoma, from which the patient made a good recovery.

Pulsating Exophthalmos; Ligature of the Common Carotid, External Carotid, and Superior Thyreoid Arteries.—Dr. Joseph Ransohoff, of Cincinnati, presented a case of this nature. The patient was twenty-one years of age, and after an injury to the temple had paralysis of the outer rectus and a pulsating exophthalmos. The pulsating exophthalmos did not come on until about four weeks after the injury was sustained. It was not known how long the paralysis of the abducens had continued. There was intense chemosis of the ocular conjunctiva, which threatened to produce ulceration of the cornea. There was no pain, but great discomfort produced by the ringing and buzzing noises in the head. The case was treated by tying the common carotid, external carotid, and superior thyreoid arteries. This extensive operation was done through one incision, and was done in order to prevent as far as possible the establishment of an anastomotic circulation too early. Three months after the operation the patient continued well, without return of pulsation in the facial or temporal artery. The abducens paralysis persisted.

The author had collected twenty-one recent cases in which the tying of the common carotid artery had resulted in fourteen cures. In five the cures were partial or there was a recurrence. Death had followed the operation in only one instance.

Medicomilitary Notes in Manchuria.—General John Van R. Hoff, United States Army, said that the remarkable sanitary results achieved by the belligerents in Manchuria had taught the world: 1. That there was no legitimate reason why in war the mortality from disease should exceed that from trauma. 2. That the extraordinarily large excess of deaths from battle injuries over those from disease, obtained for the first time in history, was directly due to the observance of well established hygienic rules, proper sanitary organization, sufficient personnel, and adequate material, not to mention persistent fighting. 3. That, so far as known to the writer, this war had developed nothing new in medical treatment or surgical technique, its one lesson for us being summed up in a single word, *prevention*.

The Russian hospital records in the Far East to September 1, 1905, not including Port Arthur, accounted for 352,412 cases, in which 8,983 patients died in the theatre of war, 24,255 were discharged for disability, 120,394 recovered, and 25,135 remained under treatment. The deaths from disease, at home and abroad, totaled 18,830.

The total Russian military population, from the beginning to the end of the war, was estimated at 1,400,000, which would give a mortality from disease of 13.4 and from wounds of 26.8 per thousand.

Typhoid fever and bacillary dysentery were endemic in Manchuria, and the Russian military authorities had reason to expect that these diseases would cut a considerable figure in the morbidity and mortality bills.

The writer discussed at some length the predominating conditions in the spread of typhoid infection, and laid stress upon the fact that, while water was probably the most potent factor among house dwellers, flies and personal connection cut the largest figures in the infection of camp dwellers. The Russian medical authorities, however, did not think that flies had anything to do with the spread of the Eberth bacilli, though they thought that the bacilli of Shiga were disseminated by this means.

The latrines were primitive and wide open to flies, adequate police of camp grounds was impossible during the rainy season, as was the case with the tents and persons of the men, and flies swarmed everywhere.

The use of raw running water was absolutely forbidden, but, of course, this rule could not always be enforced. Where the camps were at all permanent, wells were dug.

The food habits of the Russian soldier were ideal, from a health standpoint. All his food, except bread, went into the soup pot. His national beverage was tea, which he received *ad libitum*.

It would appear that absolute isolation of typhoid cases was not practised by the Russians. In summing up the typhoid results, the writer asked, "Can a field army do better?" He answered, "I think so, but there will have to be wider dissemination of knowledge of the laws of right living before the white man will do it."

The subject of camp dysentery was touched upon at some length. A comparatively small number of cases of this scourge of armies appeared among the Russians in Manchuria, and the mortality was small. The Shiga antitoxine was used with satisfactory results.

There were 13,000 cases of venereal reported, and 1,000 of insanity. No beriberi was noted. The trau-

[illegible] circumstances of the campaign were singular only in the extraordinarily large number of wounded and the great mortality from artillery fire. Over twenty per cent. of the deaths and wounds were chargeable to artillery, more than twice that recorded by the Germans in the war of 1870. Wounds from cold steel cut little figure in the mortality, in spite of the sensational stories of terrific bayonet charges, etc.

The writer did not believe that the time had yet come to draw anything more than very general conclusions from the obtainable statistics of the war, but what was now known pointed to the probability of there being no occasion to modify the views held regarding the effects of the high powered, jacketed bullets at different ranges.

As to cœliotomy, or indeed any other immediately avoidable major operation, on the battlefield or in mobile hospitals, the consensus supported the view heretofore held that they were absolutely interdicted. In these cases expectancy was the correct procedure, and rest and morphine the treatment.

Officers for the Ensuing Year were elected as follows: President, Dr. Dudley P. Allen, of Cleveland; vice-presidents, Dr. Thomas W. Huntington, of San Francisco, and Dr. A. F. Jonas, of Omaha; secretary, Dr. Robert G. Le Conte, of Philadelphia; recorder, Dr. Richard H. Harte, of Philadelphia; treasurer, Dr. Charles A. Powers, of Denver.

The next meeting will be held in Washington, D. C., in conjunction with the Congress of American Physicians and Surgeons, in 1907.

Book Notices.

Lectures on Tropical Diseases, being the Lane Lecture for 1905, delivered at Cooper Medical College, San Francisco, U. S. A., August, 1905. By Sir Patrick Manson, K. C. M. G., M. D., LL. D. (Aber.), F. R. C. P. (Lond), F. R. S., Hon. D. Sc. (Oxon.), Medical Adviser to the Colonial Office, etc. Chicago: W. T. Keener & Co. Pp. viii-230. (Price, $2.50.)

In 1905 the author delivered the Lane lectures in San Francisco, and this volume includes accounts of ankylostomiasis, dracontiasis, bilharziosis, filariasis, malarial disease, trypanosomiasis, kala-azar, the diagnosis and the treatment of tropical fevers, and a lecture on problems in tropical medicine. Our knowledge of all of these diseases has been increased by the author's investigations, and the growing interest in tropical diseases makes this volume a timely and desirable addition to the literature of the subject.

The Subconscious. By Joseph Jastrow, Professor of Psychology in the University of Wisconsin. Boston and New York: Houghton, Mifflin & Co., 1906. Pp. 549. (Price, $2.50.)

Professor Jastrow, by a vivid and picturesque literary style, rich in the language of metaphor, and by an unusual talent for illustration, has the happy faculty of investing the most abstruse subjects with unfailing interest. In this, his latest volume, he has chosen a difficult and elusive field which has been obscured by much humbug and charlatanry. The medical reader will find much of real interest in his scientific analysis of the phenomena of dreams, hypnosis, delirium, the trance state, anæsthesia and drug intoxications, hysteria, the curious phases of disintegrated and altered personality, the inspirations of genius, the extraordinary feats of mathematical prodigies, and the mediumship of alleged spiritism. For these and allied manifestations he finds in the psychological conception of the subconscious an adequate interpretation, at once free from supernaturalism and consistent with the rigid principles of scientific reasoning. His book is a model of clear thinking. It is unfortunate that few of the dupes who indulge their whimsies and flabby minded inclinations for the occult, the followers of spiritualism, theosophy, Christian Science, Dowieism, and other strange cults, have not sufficient mental capacity to understand this logical and convincing exposition. Had the argument required it, many additional curious facts pertinent to the subject might have been found in the delusions of medical quackery.

Surgical Diagnosis. A Manual for Students and Practitioners. By Albert A. Berg, M. D., Adjunct Surgeon to the Mount Sinai Hospital, New York. Illustrated with Two Hundred and Fifteen Engravings and Twenty-one Plates. New York: Lea Brothers & Co., 1905. Pp. xvi-543.

The author states that he has endeavored to cover the whole subject of surgical diagnosis concisely and in its modern development, so as to present the matter in a clear and definite way to meet the needs of students and general practitioners. To accomplish his aim he gives a brief description of the causes, onset, and course of each disease, and recites the points of difference between it and other conditions for which it might be mistaken. It seems that in attaining brevity the author assumes too much knowledge on the part of the reader; there is no good description of the use of the x ray apparatus or of the cystoscope, proctoscope, and similar instruments that are used principally for diagnosis. Fig. 10 is repeated in Fig. 32.

The Medical Diseases of Egypt. By F. M. Sandwith, M. D., F. R. C P., Consulting Physician to H. H. the Khedive and to Kasr-el-ainy Hospital, Cairo; Lecturer at the London School of Tropical Medicine, etc. Part 1. London: Henry Kimpton, 1905. Pp. vi-316.

In this work the author presents in an amplified form his lectures to the students of the Egyptian Government School of Medicine, and he has restricted his topics to those diseases that an experience of more than twenty years in Egypt has shown to be of importance to the practitioner in that country. This volume is devoted to the more important infectious diseases that occur in Egypt, and in addition to the general description of a disease the author gives such information as he has been able to acquire about its history and geographical distribution, and includes references to published literature. The volume is of interest to those physicians who expect to pursue their professional career in Egypt and to those who are interested in the diseases of hot countries.

The Prophylaxis and Treatment of Internal Diseases. Designed for the Use of Practitioners and of Advanced Students of Medicine. By F. Forchheimer, M. D., Professor of Theory and Practice of Medicine and Clinical Medicine, Medical College of Ohio, Department of Medicine of the University of Cincinnati, etc. New York: D. Appleton & Co., 1906. Pp. xvii-652.

We have no hesitation in saying that this book is one of the most valuable of recent additions to the literature of medicine. It is not a mere cold catalogue of facts and opinions; it is replete with the wisdom of its accomplished author, an experienced practitioner and teacher. It is arranged for ready reference, but it may with profit be read from cover to cover. It is without pictorial illustrations, but their absence is rather a treat in these days.

Dr. Forchheimer's views seem to us sound in every respect, and they are expressed in clear and simple language as a rule, though there seems to be some haziness in the opening sentence of the section on the pro-

phylaxis of inflammation of the vermiform appendix. The sentence (page 292), reads as follows: "The members of a family in which there is a decided hereditary tendency to this disease should especially avoid those things to be recommended in the relapsing form."

Miscellany.

Classification of Nonspecific Surgical Fevers.—Ford. in *American Journal of Obstetrics,* summarizes his views as follows: 1. Aseptic traumatic fever is that form which is due to absorption of substances little altered from normal tissues from a sterile wound. 2. Passive sapræmia is due to absorption of bacterial proteids and ptomains elaborated by bacteria of decay in a putrid wound. 3. Passive septicæmia is due to absorption of ptomains and toralbumins elaborated by germs of suppuration in an area of suppuration. 4. Active sapræmia is due to toxic elaboration of decay germs in the circulation. 5. Active septicæmia is due to toxic elaborations of bacteria of suppuration in the circulation: local inflammation is not essential. 6. Pyæmia is due to the presence of a septic embolus in the circulation characterized by metastatic abscesses.

The After Care of the Consumptive.—In the antituberculosis crusade attention has been devoted to the means of preventing infection. the discussion of laws relating to notification and also to treatment of the tuberculous, particularly the establishment of sanatoria both public and private. There can be no doubt of the value of this movement and of the amount of good which it has already accomplished. There is another feature which has been given comparatively little attention, and that is the after care of the tuberculous. In those who are well to do this problem is not difficult, but for the workingman, and particularly for the working woman, the problem of how to live after the disease has been arrested is one of paramount importance. Already the public is becoming fairly well educated on the main topics relating to tuberculosis, and the one that has sunk the deepest in the public mind is the feeling that tuberculosis is contagious: hence in the narrower field that is open to the employment of women, which is largely in a sedentary way and in comparatively close contact with others, the problem of occupation is all important. For workingmen there is a much wider range of choice. The man who has been employed within doors can obtain work on the farm or in various out of door occupations, but the number of places open to women in out of door work is very limited. To return to the same surroundings under which the disease was contracted is almost certain to mean a recurrence. Discussing this one feature of the antituberculosis crusade shows how the problem of tuberculosis is essentially a sociologic and economic one. With the disease arrested it is highly important to discuss the question of after cure.—*Medicine.*

Official News.

Public Health and Marine Hospital Service Health Reports:

[illegible] and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the [illegible]

[illegible]

Places.	[illegible]	Cases	Deaths.
Louisiana—New Orleans	Sept. 1-8	4	1
Massachusetts—Lawrence	Sept. 1-8	1	
Montana—State	July 1-31	[illegible]	
New York—New York	Aug. 25-Sept. 15	7	

[illegible]

[illegible]	[illegible] Aug. 4	[illegible]	
[illegible]	[illegible] Aug. 12	[illegible]	
[illegible]	[illegible]	47	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]		[illegible]
[illegible]	[illegible]		[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]		[illegible]
India—Rangoon	July 28-Aug. 4	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]		[illegible]
[illegible]	[illegible]		[illegible]

[illegible]

Brazil—Rio de Janeiro	July 29-Aug. 5	1	1
[illegible]	[illegible]	[illegible]	
Honduras—Ceiba	Aug. 5-Sept. 1	Present.	
[illegible]	[illegible]	4	[illegible]
[illegible]	[illegible]	10	6
[illegible]	[illegible]	[illegible]	

Cholera—Foreign.

India—Bombay	Aug. 7-14		[illegible]
[illegible]	[illegible]		[illegible]
[illegible]	[illegible]		[illegible]

[illegible]

[illegible]	[illegible]	[illegible]	2
Egypt—Alexandria	Aug. 17-23	10	[illegible]
[illegible]	[illegible]		[illegible]
India—Bombay	Aug. 7-14		[illegible]
India—Calcutta	July 28-Aug. 4		17
India—Karachi	Aug. 5-12	[illegible]	6
India—Rangoon	July 28-Aug. 4		136
[illegible]	[illegible]	[illegible]	1
[illegible]	[illegible]	[illegible]	[illegible]

Public Health and Marine Hospital Service:

[illegible] and Noncommissioned Officers of the Public Health and Marine Hospital Service, for the seven days ending September [illegible]

Allen, G. C., Pharmacist. Granted leave of absence for two months, from September 28, 1906, without pay.

Ashford, F. A., Assistant Surgeon. Directed to proceed from Ellis Island, N. Y., to Philadelphia, Pa., for temporary duty.

[illegible] L. C., Acting Assistant Surgeon. Granted leave of absence for eight days, from September 11, 1906.

[illegible] W. C., Passed Assistant Surgeon. Relieved from duty on the U. S. S. *Rush*, and directed to proceed to Vancouver, B. C., for duty in connection with the examination of aliens.

[illegible], Passed Assistant Surgeon. Granted leave of absence for two months, from September 15, 1906.

Glover, M. W., Passed Assistant Surgeon. Relieved from duty at Vancouver, B. C., and directed to proceed to Sitka, Alaska, for duty on the U. S. S. *Rush*, relieving Passed Assistant Surgeon W. C. Billings.

Holt, J. M., Passed Assistant Surgeon. Relieved from duty at San Francisco, Cal., and directed to proceed to Columbia River Quarantine Station, Astoria, Oregon, assuming command of the Service at that port.

Korn, W. A., Passed Assistant Surgeon. Relieved from duty at Perth Amboy, N. J., and directed to proceed to Reedy Island Quarantine Station and assume command of the Service at that port.

Miller, W. W., Assistant Surgeon. Directed to proceed to Ellis Island, N. Y., reporting to the Medical Officer in command for duty.

McCoy, G. W., Passed Assistant Surgeon. Granted leave of absence for two months, from October 4, 1906.

McKeon, F. H., Assistant Surgeon. Relieved from temporary duty at Columbia River Quarantine Station and directed to proceed to San Francisco for duty and assignment to quarters.

[illegible] A. J., Acting Assistant Surgeon. Granted leave of absence for seventeen days, from September 25, 1906.

Smith, F. C., Assistant Surgeon. Relieved from duty at Detroit, Mich., and directed to proceed to Perth Amboy Quarantine Station, N. J., and assume command of the Service at that port.

Stoner, G. W., Surgeon. Granted four days' leave of absence from September 8, 1906, under the provisions of Paragraph 189 of the Regulations.

VAN NESS, G. I., JR., Pharmacist. Directed to report to Surgeon P. M. Carrington, chairman of board of examiners, to determine his fitness for promotion to the grade of pharmacist of the second class.

WALLENBERG, R. A. C., Assistant Surgeon. Directed to report to the Medical Officer in command at Detroit, Mich., for duty and assignment to quarters.

Board Convened.

A board was convened to meet at Fort Stanton, N. M., upon the call of the chairman, for the examination of Pharmacist G. I. Van Ness, Jr., to determine his fitness for promotion to the grade of pharmacist of the second class. Detail for the Board: Surgeon P. M. Carrington, Chairman; Passed Assistant Surgeon L. D. Fricks, Recorder.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, for the week ending September 23, 1906:

CARTER, E. C., Major and Surgeon. Granted fifteen days' leave of absence.

FIFE, JAMES D., First Lieutenant and Assistant Surgeon. Ordered to accompany Company B and Company D, 4th infantry, from Fort Slocum, N. Y., to Fort McKenzie, Wyo.

HARVEY, PHILIP F., Colonel and Assistant Surgeon General. Granted leave of absence for fifteen days.

LE WALD, LEON T., First Lieutenant and Assistant Surgeon. Left Fort Slocum, N. Y., on seven days' leave of absence.

LYSTER, WILLIAM J. L., Captain and Assistant Surgeon. Granted leave of absence for two months and twenty-four days, to take effect on or about October 6th.

MILLER, E. W., First Lieutenant and Assistant Surgeon. Granted leave of absence for five days.

MILLER, R. B., First Lieutenant and Assistant Surgeon. Granted leave of absence for fifteen days.

ROBBINS, C. P., Captain and Assistant Surgeon. Upon arrival at Madison Barracks, N. Y., with troops from Mt. Gretna, Pa., will proceed to his proper station, Fort Ethan Allen, Vt.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending September 22, 1906:

BELL, W. H., Surgeon. Ordered to report to the Surgeon General for special duty.

BLOCK, W. H., Acting Assistant Surgeon. Detached from the New Orleans Naval Station and ordered to Navy Recruiting Party No. 4.

BOGAN, F. M., Passed Assistant Surgeon. Detached from the *Marietta* and ordered to the New York Hospital for treatment.

BROWN, J. L., Assistant Surgeon. Ordered to duty with Recruiting Party No. 3.

DEAN, F. W. S., Assistant Surgeon. Ordered to the New York Navy Yard for duty.

DE BRULER, J. P., Assistant Surgeon. Ordered to report to the Surgeon General for special duty.

DYKES, J. R., Assistant Surgeon. Detached from the Navy Yard, New York, N. Y., and ordered to the Naval Station, New Orleans, La.

GRIEVE, C. C., Assistant Surgeon. Ordered to the Omaha, Neb., Naval Recruiting Office.

HOYT, R. E., Passed Assistant Surgeon. Ordered to the Naval Academy, Annapolis, Md.

IDEN, J. H., Passed Assistant Surgeon. Ordered to the *Newark*.

KENNEDY, R. M., Surgeon. Detached from the *Missouri* and ordered to the Bureau of Medicine and Surgery, Washington, D. C.

MOORE, J. M., Surgeon. Detached from the *Franklin* and ordered to the *Newark*.

MURPHY, J. F., Passed Assistant Surgeon. Detached from the Omaha Naval Recruiting Office and ordered to the *Georgia*.

NORTON, O. D., Surgeon. Detached from the *Yankee* and ordered to the *Missouri*.

RICHARDSON, E. A., Acting Assistant Surgeon. Ordered home to await orders.

SEAMAN, WILLIAM, Passed Assistant Surgeon. Detached from the Navy Yard, Boston, Mass., and ordered to the *Prairie*.

The following named assistant surgeons have been ordered to the Naval Medical School, Washington, D. C.: A. H. Allen, M. H. Ames, M. C. Baker, H. Butts, F. D. Chappelear, I. F. Cohen, E. E. Curtis, H. L. Dollard, J. O. Downey, J. Flint, P. E. Garrison, J. P. Haynes, E. P. Huff, A. McK. Jones, J. B. Kaufman, W S. Kuder, R. I. Longabaugh, J. M. Minter, T. W. Raison, R. C. Ransdell, A. H. Robnett, W. E. Schaller, H. L. Smith, W. G. Steadman, and C. K. Winn.

Births, Marriages and Deaths.

Married.

ADAMS—SHELDON.—In New York, on Saturday, September 8th, Dr. Warren Sanford Adams and Mrs. James Sheldon.

DOWD—LYMAN.—In Buffalo, N. Y., on Monday, September 17th, Dr. J. Henry Dowd and Miss Louise Lyman.

EICHEL—REINHARDT.—In Evansville, Indiana, on Tuesday, September 18th, Dr. Sidney J. Eichel and Miss Rose Bonn Reinhardt.

GALLAGHER—HAGAN.—In Philadelphia, on Tuesday, September 18th, Dr. Thomas Y. Gallagher and Miss Katharyn Hagan.

HOUSER—BOYSEN.—In Egg Harbor, N. J., on Wednesday, September 19th, Dr. Louis J. Houser and Miss Rose Boysen.

O'CONNOR—GOULD.—In Oakland, California, on Saturday, September 1st, Dr. Roderic P. O'Connor, U. S. Army, and Miss Gertrude Gould.

SATTERLEE—ISELIN.—In New York, on Wednesday, September 19th, Dr. F. Le Roy Satterlee and Mrs. Mary Philips Iselin.

SCHWARTZ—BARASCH.—In New York, on Sunday, September 23rd, Dr. A. I. Schwartz and Miss Anna Barasch.

STEARNS—POWERS.—In Jamaica Plain, Massachusetts, on Wednesday, September 12th, Dr. Charles H. Stearns, U. S. Army, and Miss Pamelia Seabury Powers.

TORNEY—WYNCOOP.—In Utica, N. Y., on Saturday, September 15th, Dr. George H. Torney, U. S. Army, and Miss Anna S. Wynkoop.

Died.

ANDERS.—In Gloster, Mississippi, on Sunday, September 16th, Dr. J. R. Anders.

FLINT.—In Watertown, N. Y., on Saturday, September 8th, Dr. Charles H. Flint, aged forty years.

KNIGHT.—In Sauquoit, N. Y., on Sunday, September 16th, Dr. Arthur Knight, aged sixty-five years.

LIGHTFOOT.—In Newark, N. J., on Tuesday, September 18th, Dr. George F. Lightfoot, aged forty-one years.

LINK.—In Millard, Nebraska, on Tuesday, September 11th, Dr. Harvey Link, aged eighty-two years.

MCCABE.—In Berlin, N. H., on Sunday, September 16th, Dr. D. J. McCabe.

MUNN.—In Syracuse, N. Y., on Sunday, September 16th, Dr. James F. Munn, aged fifty-five years.

OATES.—In Wheeling, West Virginia, on Tuesday, September 18th, Dr. William Oates, of Bridgeport, Ohio, aged thirty-four years.

OTIS.—In New York, on Saturday, September 22nd, Dr. William K. Otis, son of the late Dr. Fessenden N. Otis.

PEABODY.—In Omaha, Nebraska, on Sunday, September 9th, Dr. James H. Peabody, aged seventy-three years.

PINCKNEY.—In Grandview, N. Y., on Thursday, September 20th, Dr. S. G. Courtney Pinckney, aged thirty-seven years.

SAVAGE.—In Bath, Maine, on Tuesday, September 8th, Dr. James W. Savage.

WHEELER.—In Brooklyn, N. Y., on Wednesday, September 19th, Dr. E. A. Wheeler, aged fifty-six years.

WILSON.—In Washington, D. C., on Monday, September 10th, Dr. Jay Greenwood Wilson, aged sixty-six years.

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Original Communications.

THE FUNCTIONS OF THE CEREBELLUM AND THE SYMPTOMS OF ITS DISEASE.*

BY CHARLES L. DANA, M. D.,
New York.

The cerebellum is in some respects the most remarkable organ of the brain. Its lateral lobes are a measure of the development of intelligence as much as the frontal lobes of the cerebrum. Its characters are most persistent throughout the different animal species. Its structure is relatively simple, but its functions are elusive, difficult to define, and in a measure easily substituted. Its importance in the symptomatology of disease is, I venture to say, greater than has been supposed. A great amount of study has been applied to the subject, but mostly in relation to tumors of that organ. In the present article I wish to call attention to the general subject of the functions of the cerebellum, and then to the morbid phenomena, caused especially by other conditions than tumors, especially hæmorrhages, softenings, degenerative, sclerotic, and functional disturbances.

Anatomical Connections and Functions.—The cerebellum is a small organ in reptiles which animals have few problems of equilibrium to consider. It is a little larger in fishes, especially the active fishes like sharks. It is still larger and begins to have lateral lobes in birds and it is largest in mammals. The median lobe which is connected functionally with the spinal cord is most early to develop, while the lateral lobes are hardly present in reptiles and fishes. They develop in proportion to the development of the cerebral hemispheres, and are largest in mammals and in man.

The cerebellum is essentially a reflex and automatic organ. Its activities are continuous and great, but are never attended by consciousness. To a certain extent, it has the same relation to the cerebrum that the posterior cerebral ganglia have to the spinal cord, because it has a similar group of receiving impulses which give tone to the muscular acts. The cerebellum is relatively simple in its structure, and even in its relations. It consists of a middle and two lateral lobes, and these two parts seem to be almost independent organs. They are, anatomically, not very closely united in so far as the tracts of fibres are concerned. The two lateral lobes have their relations with the parts above and below, and so does the middle lobe. The gray matter of the cerebellum lies mainly in its richly enfolded cortex, but it has within it certain nuclei, which may be spoken of as their "basal ganglia." Thus, the basal ganglion of the lateral lobes is the *corpus dentatum*, that of the middle lobe, or vermis, the smaller collection of cells known as "nucleus of the roof" (nucleus tegmenti).

It has recently been shown by R. H. Clark and Horsley (*Brain*, 1905) that the cerebellum has two very distinct systems by which it is connected with the brain and spinal cord. The first system is that which connects the cerebral hemispheres with the lateral lobes.

The Lateral Lobe System.—1. A tract of fibres comes down from the frontal and temporal lobes in the internal capsule, carrying impulses to nuclei in the pons. 2. Thence another set of neurones passes across the median line of the pons, ascends in the middle peduncle of the opposite side to the cortex of the lateral lobe of the cerebellum. 3. Here the afferent impulses are associated and, 4, a set of efferent neurones carries impulses to the dentate nucleus, which is the basal ganglion of the cerebellum. 5. From here new neurones cross the median line in the anterior peduncles of the cerebellum and go to the red nucleus and the optic thalamus, and 6, thence to the cortex, chiefly of the parietal lobe. (From the red nucleus the rubrospinal tract carries impuses down to the anterior horns of the spinal cord, forming a high reflex centre.) The lateral lobes of the cerebellum are therefore a centre from which impulses from the cerebrum come and go; and the development of these lateral lobes corresponds with the development of the cerebral hemispheres and the acquirement and adjustment of new aptitudes with greater intelligence. It is safe to infer that this mechanism is the one which is used in the acquirement of new dexterities of equilibrium and coordination. But as most of these movements become automatic, the function of this system is later assigned to a lower one. Lesions therefore of the lateral lobes or of the pons nuclei and of the temporal and frontal lobes may cause ataxia, vertiginous feelings, forced movements, but this does not always occur and the symptoms abate after a time.

The Middle Lobe System.—The middle lobe of the cerebellum is, no doubt, somewhat in touch with the mechanism just described, but it has a fairly distinct mechanism of its

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own. Impulses mainly from the vestibular branch of the eighth nerve and from the primary visual centres and vagus and trigeminus pass to nuclei in the pons, cross over and go to the cortex of the middle lobe or vermis. Impulses from the spinal cord pass up along the direct cerebellar tract, and in the posterior columns, and thence they pass to the cortex of the middle lobe. From here they are sent back down to the basal or roof nucleus of the middle lobe, thence to a large nucleus in the pons, known as Deiters's nucleus, and thence down in the lateral columns of the spinal cord to the anterior horns. (Impulses from the vestibular nerve also are reflected from Deiters's nucleus down the spinal cord directly to the anterior horns.) Thus, we have a spinocerebellar mechanism, which also has to do with the coordination and equilibrium. This system has much to do with the acts of equilibrium and automatic coordination, and it is most important in the economy of the cerebellar system. Lesions and diseases of the verms and cerebellar spinal tract cause much more disturbance than those of the mechanism first described.

The essential function of the cerebellum is that of attending to the equilibrium, using that term in its broadest sense, for it means the proper poise of the head as well as that of the body. It means the quick adjustment of bodily position so as to preserve our gravity in running and walking, but also in listening and seeing and in every activity of life. Indirectly, then it helps in coordinating all muscular movements from those of the limbs and trunk to those of the eyes. But it does not teach us or help much in the manual or pedal devteries of ordinary life. It is a secondary organ for the piano player, the painter, the wood carver, the mechanic. It is especially essential to the dancer, the equilibrist, and the artist who works with his feet.

The cerebellum controls equilibrium by means of sensory stimulations which it receives mainly from the ears (organ of Corti), joints, and muscles. These tell at once the position of the body's segments. If the head is turned down to the shoulder, the muscles and vestibular nerves send notice to the cerebellum, and it returns a direction to the motor nerves, and new adjustments are made if necessary. If the act is quite unconscious and automatic, there is brought into play only the spinocerebellar mechanism of the cord and middle lobe. If it is deliberate and the consciousness intervenes, there is brought into action the cerebrocerebellar mechanism of the cerebeum and lateral lobes also.

DIRECT CEREBELLAR SYMPTOMS.

When anything disturbs these mechanisms we have a painful form of sensation known as vertigo, and with it irregular and ataxic and forced movements, and loss of equilibrium. This sense of vertigo is one of the commonest of our disagreeable sensations, because the cerebellospinal mechanism has so many factors in its make up.

Thus the nerves from the labyrinth, which are the most important single group, most easily disturb the cerebellar machinery when irritated. The visual nerves come next, because they especially are associated with movements of the head and neck. On the other hand, the cutaneous and muscular sensations have to do much more with the movements and control of the trunk and limbs and their disordered movements affect consciousness less. Hence, we do not get vertigo from lesions of the spinal cord tracts and nerves. We have rather in these conditions more a disturbance of gait and the automatic movements necessary to station and locomotion. The vestibular nerve is the special sensory nerve of the cerebellum, and irritations of it cause severe vertigo and violent movements almost as the painful irritations of the trigeminus cause neuralgia.

But this cerebellospinal machine has, in its control over equilibrium, to do other things than simply preserve balance and adjust head, eyes, and bodily movements to the changes in the centre of gravity.

It also gives a certain degree of "tonus" to the muscles so that they are always ready to respond to the proper stimulus. When the cerebellum is injured there may occur a loss of deep reflexes and a muscular atony, such as is found in locomotor ataxia, though less marked.

The cerebellum has also the function of regulating muscular movements so that flexors and extensors respond in proper balance, and so that each segment of the limb follows in its movements in proper order, as in the orderly blow of the hand or kick of the foot. This is called synergy. When the cerebellar "tonus" and synergy of the muscles are lost the muscular effort is attended with labor and weakness, we have a symptom known as parasthenia. This is interpreted by the patient as a general weakness and easy fatigability, and such patients have attacks or periods of exhaustion which appear like conditions of neurasthenia. Hence, a person with a weak cerebellum may be to all practical purposes neurasthenic, and cases of cerebellar defect may pass as cases of chronic neurasthenia.

The lack of power to properly tone and coordinate muscles leads also to rhythmical contractions or tremors of a coarse intentional type. This is a very constant symptom in experiments on animals, but not so often seen in man. It shows itself also in lateral oscillatory movements of the eyes and head. Further, the disorder of this mechanism leads to a constant feeling of wrong equilibrium, so that the body is held in a peculiar constrained position, as to the head or neck or the trunk. A common and characteristic symptom of cerebellar tumor, for example, is a wry neck position of the head, while in cerebellar lesions due to hæmorrhage or sclerosis, the head is often carried in a stiff, rigid way as if the patient was balancing something on the vertex.

The uncertainty of movement in cerebellar disease leads the patients also sometimes to move very carefully and to change from one position to another with slowness, so that a condition suggesting almost katatonia is observed.

The direct effects of lesions of the cerebellum and its afferent and efferent tracts then consist of: 1, Ataxic and reeling gait; 2, forced movements; 3, constrained attitudes; 4, tremors, nystagnus and head oscillations; 6, disorders of segmental

peripheral movements of the hands or "asynergy;" 7, vertigo and its accompanying sensations; and 8, sense of weakness and myasthenia.

INDIRECT SYMPTOMS.

The cerebellum is enclosed in a tight brain case and, furthermore, is again enclosed in a separate case made by the tentorium above and the pons medulla and fossa of the skull below, with the fourth ventricle between.

When a disease like a tumor or hæmorrhage occurs, there is compression of the cerebellum, the aqueduct of Sylvius connecting the fourth and third ventricles is stopped up, fluid accumulates in the ventricles, the nuclei of the cranial nerves on the floor of the medulla are pressed upon, and we get a great many serious, secondary symptoms; I call these secondary, but they are often early and important symptoms. They consist of headache, vomiting, optic neuritis, and in the later stages disordered breathing and pulse, and involvement of the oculomotor and other cranial nerves, and retraction of the head. These, however, are all pressure symptoms and not directly cerebellar. They enter into the mental picture of the disease, but not into the pathology of the cerebellum.

The foregoing include the symptoms seen in different forms of cerebellar disease, including lesions of its special nerve, the vestibular branch of the eighth.

CEREBELLAR FITS.

But in experiments on animals in which one half the organ is cut away, or the peduncles are cut; other more striking features are observed. The animal has retraction of the head and opisthotonos, or the trunk is twisted to one side. The limbs on one side are adducted, on the other adducted, there is forcible extension or flexion of the limb, and the animal lies in an awkward, sprawling position. With this there may be clonic movements of the head and eyes, forced rotation of the body, and violent tremors.

These symptoms are rarely seen in ordinary chronic cerebellar disease, but they do occur as an epiphenomenon at the onset of some acute diseases, such as hæmorrhages, and in the course of some chronic disease, such as tumors. In these cases, the patient suddenly has a sense of pain or of rushing of blood to the head, with vertigo and roaring noises in the ears, stiffening and irregular tonic spasm of the limbs, the patient lying in a sprawling attitude, such as is seen in animals, who have received injuries to the cerebellum. Or the seizure may consist simply of a sudden accession of pain as if the head were struck by a blow, followed by a pitching forward or sinking in a heap to the floor.

I have described these cerebellar seizures as occurring in three groups of diseases: 1, Tumors, especially those of the cerebellar pontine angle; 2, hæmorrhage of the cerebellum directly, and after the clot is absorbed leaving an irritating cicatrix; 3, in cerebellar abscess; 4, in primary defects of the cerebellum; 5, in neuropathic constitutions as epileptic equivalents.

Thus we have three groups of cerebellar symptoms: 1, Those due to direct injury or irritation of the cerebellum; 2, those due to increased intracranial pressure, and thus causing general cerebral or local pons medullary symptoms; and 3, those due to sudden irritations or vascular changes leading to seizures.

The diseases of the cerebellum which produce symptoms that have been most frequently studied are tumors of that region, but the subject of the symptoms of cerebellar tumors has been so thoroughly gone over, and that quite recently, that I shall not refer to the subject in any detail now.

In the course of the past few years I have seen a good many cases of distinct cerebellar symptoms, due to either hæmorrhage or softening, to syphilitic exudates, to lead encephalopathy, to multiple sclerosis, and to hereditary cerebellar atrophy, and also to functional conditions of a neurasthenic or toxic character. Perhaps the most typical and distinctive group of cerebellar symptoms is that produced by small cerebellar hæmorrhages or softenings, in which the lesion is not large, and does not break into the ventricle. These cases, I believe, are not so very rare. They occur in persons of middle age or a little later period of life, who have arterial sclerosis, and who have, perhaps, alcoholic or specific histories. Cerebellar hæmorrhages of a severe type, which come to autopsy, are very rare, making up not much more than three per cent. to five per cent. of the total. But I believe that the smaller hæmorrhages or thrombotic lesions are not so extremely infrequent, and are often overlooked as being evidences of some general arterial sclerosis, or stomach or ear disease. A typical case, for example, runs somewhat like this:

SYMPTOMS OF CEREBELLAR HÆMORRHAGE.

CASE I.—Mary W., age forty-eight, widow; housewife. The family history is unimportant. The patient had typhoid fever and smallpox as a child, but has since been very well. Had menopause four years ago. Has had four children, no miscarriages. She came to the clinic, complaining mainly of headache, unsteadiness of gait, dizziness, and sometimes double vision, all of which symptoms had lasted for over a year. Her habits had been good, she had had no specific infection. A year and a half ago, after she had been suffering for about three months with frequent headaches, she was attacked one morning with a severe vertigo. She fell down and became unconscious, and this period of unconsciousness lasted about three weeks, during which time she was delirious, but not paralyzed. She recovered consciousness, but her speech was thick for about two weeks. She slowly recovered her power to walk, but never got so that she could walk steadily. At the time of first examination she staggered in her gait like an intoxicated person, and said that she suffered at times from double vision. She stated that she always walked in this uncertain way. Sometimes her legs gave way from under her, and she would drop things from her hands, and the arms would suddenly become powerless. She did not have any distinct attacks of vertigo, but was apparently suffering from a kind of subjective vertigo or uncertainty of equilibrium. She had, she said, a tendency to pitch forward while walking and standing, and she walked carrying her head in a constrained position, as though she were trying to balance something on the top of it. She had a severe headache, the pain being in the region of the eyes and of the top of the head. She had no nausea nor vomiting. The vision and optic discs

were normal, and the hearing and acoustic nerves were also normal and she had no tinnitus. She could stand with the eyes closed, but swayed a little. The speech showed some incoordination. The reflexes were a little exaggerated. There was tremor of the hands. Pupils reacted to light. There was now a slight rotatory nystagmus, more in the left than in the right eye.

The patient was not seen for one and a half years during which time she continued to improve gradually. She was able to take up her housework. At a recent examination she still walks with a reeling gait, and still has the peculiar constrained attitude, the nystagmus, the tremor of the hands, increased by intention movements; also some oscillatory tremor of the head; sudden forward movements of the head produce vertigo. All her movements are slow and cautious.

This patient, then, after a single seizure, has been suffering for two years from a reeling gait, a constrained attitude, nystagmus, intention tremor, vertigo, slight tendency to forced movements. She has not been strong, but has been able to do her work. She has had no further seizures. The examination of the urine was negative. Handwriting was fairly good.

Case II.—Michael D., Italian, age forty-two, foreman on a railroad, came to the clinic complaining of severe vertigo. He stated that he had had rheumatism six years ago and had had an attack of lumbago, but never had had any other serious disease, and had no ear trouble and no syphilis. He was a man of temperate habits. About fourteen weeks before admission, he was, while at work, suddenly taken with an attack of dizziness which was so severe that he had to be put to bed, and had then a vomiting spell, but he did not lose consciousness. The dizziness passed off in a day or two. He had a second severe attack a month later which left him with a vertigo that has continued ever since. It disappears when he lies on his back, but comes on whenever he sits, or stands, or moves. He has no headache, but has a sense of occipital heaviness and some tinnitus.

The patient is a large man, rather obese. He walks with care and holds his head carefully, because he says: "it feels heavy and hurts him," and he is afraid of getting dizzy. There is no static ataxia, but there is a slight cerebellar gait. There is a tremor of the hands and slight lateral nystagmus to the left. Since his second attack he has not been able to work on account of the vertigo, feelings of general weakness, and discomfort in the head. There is no disorder of the reflexes, or cutaneous sensation. The pupils react to light and distance, and the optic nerves are normal. The tongue is coated; the heart, liver, and spleen are normal. The patient very slowly improved, but even two months after the attack he was yet unable to attend to his work.

The case, then, presents the symptoms of a slightly ataxic gait, hardly observable, a somewhat constrained position of the head, slight nystagmus, tremor, vomiting, and severe vertigo with, at times, some general tinnitus and muscular weakness.

Case III.—William M., age fifty-two, married, mason and plumber by occupation. Family history is of no importance.

He has always been a strong, hard workingman, and has had no serious sickness except an attack of grippe four years ago. No specific infection, but he has drank a great deal of alcohol, not being accustomed to going on sprees, but simply soaking himself with it daily.

On November 11th, about 1 p. m., just after getting up from a couch, he became very dizzy, fell down and fainted. In this attack of dizziness he had a numb sensation come on over him, objects went around from right to left, and he had a sense of pressure over the back of the head. He got over his first attack in a few hours and went to work. A week later, while sitting at meal, he had another spell and nearly lost consciousness. He was very dizzy and nauseated and vomited. The sweat broke out on him. He had the feeling of numbness and pressure over the occiput, was unable to sit up, and had to be helped to a lounge. He was obliged to keep to his bed after this for five weeks. He felt comparatively comfortable while lying in a recumbent posture, but if he tried to get up, he would fall over in an attack of vertigo. After five weeks, he began to improve and gradually got out to his work, but he has never been as well since, though he has no severe recurrences of the attacks.

I saw him first in February, three months after the beginning of his illness. He then complained of great lassitude, being very easily tired and getting confused, and having headache if he got into a crowd, or attempted to concentrate his mind on work. His memory was a little impaired, and he could not think continuously. He was somewhat depressed and easily confused. A drink of whiskey would brace him up so that he could attend to work a little. He complained of the pressure and parathesia of the head and also of a peculiar feeling of tension in the calves of the legs. Also at times he had a sudden feeling as if he would fall, but without objective vertigo, and with a sense of fulness in front of the head. His gait was unsteady, and when he stood still with the eyes closed he had a tendency to fall backwards. His arm movements were normal, speech normal, pupils and reflexes normal, and he had no tremor of the hands. His arterial tension was very low, but his urine was at specific gravity 1.007, and no albumin. He had no nystagmus, but whenever he turned his head to one side it oscillated. He gradually improved in his condition, but during the next three months suffered from very slight vertiginous attacks and also from attacks in which he became profoundly weak, feeling that he might fall to one side.

The syndrome in this case thus was: 1, An attack of severe vertigo, objective and subjective; 2, a second attack with vomiting, projectile in character; 3, headache with mental confusion and apprehension at times; 4, mild abortive attacks of vertigo, consisting of a sensation like a flash coming up into his head, and a feeling as if he would drop; 5, lateral oscillation of the head when turned to right or left; 6, no static ataxia, but a tendency to fall backward with his eyes closed; 7, some unsteadiness of gait; 8, attacks of excessive weakness; 9, no disturbance of the eighth nerve.

Case IV.—Jacob E., Russian, age fifty, barber by occupation. His early and family history are unimportant. He was sent to Dr. R. M. Daley, at the Cornell clinic, by Dr. J. Block, with the request to determine whether he had a cerebellar tumor. His story was that ten days ago he went to bed feeling perfectly well. The next morning on waking he could not walk or stand, because his head felt so dizzy, and this condition has persisted ever since, that is to say, a period of about two weeks. He stated that when the attack came on, he was nauseated, but did not vomit; he had no headache. There was a slight tendency to sway on walking, but he had no static ataxia. He had some slight nystagmus on looking to the right, less on looking to the left. He had no tinnitus, and no trouble with the ears. The urine showed a specific gravity of 1020, with a trace of albumin and of sugar. There was a systolic murmur over the aortic valve. The reflexes were all normal. The pupils and optic nerves normal. The most dominant symptom was a persistent

vertigo, which was most marked on standing and walking, and which prevented him from following his calling. It was not associated with any stomach disturbance or any ear disturbance, or any eye trouble. Its sudden onset, without vomiting, and its disappearance in the recumbent posture, the presence of some nystagmus, and slight cerebellar gait, led to the conclusion that it was a cerebellar trouble.

The syndrome of the cerebellar hæmorrhage, then, consists of headache, vomiting, and frequently with a seizure in which there is faintness and sometimes loss of consciousness, and sometimes tonic and clonic movements of the limbs. This is followed by a residuum of symptoms, which consist of headache or uncomfortable sensations in the region of the occiput, persistent vertigo, mainly subjective in character, increased on moving, and relieved by the recumbent posture; the peculiar attitude or constrained position of the head, some degree of ataxia, or a reeling gait, nystagmus, with oscillations, quicker in one direction than in the other, a general easy exhaustibility of muscular force, and sometimes spells or periods of muscular weakness, sometimes also, with tremor of the hands, face, and tongue. In some cases the course of the residual symptoms is interrupted by attacks of severe vertigo, and even by attacks characterized by muscular spasms or cerebellar seizures. There may or may not be with these, a good deal of tinnitus, and sometimes attacks of vomiting. The dominant symptom, however, in all these cases is a vertigo, and feeling of inability to do the work, because all muscular exertions are accompanied with a sense of uncertainty and effort.

Symptoms of Syphilis of the Cerebellum.—Another group of symptoms is that which is seen in connection with specific troubles. Here the lesion may be, perhaps, a specific endoarteritis, with some softening, or a gummatous exudate. A typical case is the following:

Case V.—Mrs. Ida Z., age thirty-eight, a Russian, came to the clinic complaining of headache, dizziness, and inability to do her work. There was a fairly probable specific history. She had never had any children, and her husband had had an early hemiplegia. She had had no special diseases previous to the onset of the present trouble, which began six weeks ago. This consists of a persistent dizziness, with some headache, which came on rather suddenly, and has been accompanied with loss of appetite and attacks of vomiting, so that she is unable to take solid food, and has been obliged to live upon fluids. She complains that she cannot move her head at all on account of a dizziness, and feels as if she were intoxicated. She has some tinnitus and nystagmus, and sees double on looking towards the left. The nystagmus is very marked, and is lateral in character. She holds her head in a peculiar constrained position, as though she were balancing it, and the gait is a careful one. She was under observation for some weeks, and during that time improved somewhat, but continued to show the symptoms which quite incapacitated her from doing any work. The characteristic symptoms in her case were the constrained attitude, the nystagmus, tinnitus, the persistent nausea, and vomiting, headache, and the slight cerebellar gait. She had no disturbance of the reflexes, no trouble with the ears or optic nerves, no anæsthesiæ. There was a sensation of burning and heat over the area of the left trigeminus.

Another case of specific cerebellar disease is still more typical and definite.

Case VI.—Mr. G. L., age thirty-eight, married, three children; he had an infection in 1894. He had secondary symptoms and was treated steadily for three and a half years, when he married and had healthy children. His habits were good and he worked hard. Four years ago he had an attack of amnesia, lasting half an hour. He recovered from this under a severe course of exercise and sweatings, without any medicine. Two years ago he had an attack of vertigo, subjective in character, with nausea. He recovered from this, but three weeks later he had another attack, from which he recovered, but it left him rather weak and listless. He took no interest in his work, and was discouraged and depressed. Examination at this time showed no objective symptoms of any kind in the way of central nervous disease, and no disturbance of the ears. A few months later he reported to me, still complaining of this subjective vertigo, of his listless and tired feeling. There was then discovered by Dr. J. Ramsay Hunt a slight dilatation of the right pupil.

He got fairly well from his condition, however, and continued his work until two years later, that is to say, at the present time. He said that he had had, four months ago, an attack of vomiting with vertigo, which lasted five weeks. He had no headache whatever, but the vomiting was so severe that he could not lift his head from the pillow. The vomiting was not accompanied with nausea and was not very explosive. The mental condition was good, and the cranial nerves were normal. He stayed in bed nine weeks, and then went to Mount Clemens and got better. About three months later he had a series of attacks of vertigo. These attacks would last about five minutes and then pass away. Then they would recur again a little later during the same day. He had no nausea or headache with these attacks, which were subjective in character. After about three weeks the vertigo ceased, and he got an attack of persistent vomiting. This was brought on by any motion of the body, so that he was obliged to stay in bed and keep perfectly still in the recumbent posture. Any attempt to rise would lead to an attack of explosive vomiting, which was followed by several hours of severe prostration; but he had no headache or vertigo with the vomiting attacks. He lay in bed, preferably on one side, holding his head rather rigidly. When he was encouraged to get up and walk, he held his head in a very constrained position, as if balancing something on it. He had a decided nystagmus, but no tremor, no distinct cerebellar gait, no tinnitus, and no ear trouble. This attack of vomiting lasted for nearly two months. During this time he was obliged to be fed at times by the rectum. He never, during this time, had headache, except a short paroxysm of pain on one or two occasions. He had no convulsive attacks, the mind was clear, though he was much depressed and apathetic, disinclined to any exertion or initiative. There were no objective symptoms, aside from those mentioned, during the whole course of his trouble; that is to say, his objective symptoms consisted of the vomiting on any attempt to change his position or get into the sitting or erect position. The nystagmus and the constrained attitude were all that could be observed. He had no organic disease of the stomach, or of any of the other viscera.

Symptoms of Cerebellar Sclerosis.—In some cases of multiple sclerosis there are foci of disease in the cerebellum. These lead to disturbances of gait, of speech, nystagmus, tremors, parasthenia, and constrained attitude. The condition naturally suggests somewhat that of tumor, but there are lacking the optic neuritis, vomiting, headache, and rapidly progressive character.

Symptoms of Functional Cerebellar Disease (Cerebellar Neurasthenia).—There are cases, and I have recorded a typical one in an article on Cerebellar Seizures (*New York Medical Journal*, February 11, 1905), in which the patient seems to inherit a defective cerebellum. These patients are neurasthenic, or parasthenic. They never are quick or agile on their feet, never able to dance well, or at all; they are easily tired, and have periods of special exhaustion and drowsiness. They are great sleepers. They have to walk carefully and hold their heads in a constrained position. They

Fig. 1.—Attitude in cerebellar disease (Fraenkel), tumor of pontine angle.

cannot move it quickly without vertigo. They get sea sick and car sick very easily, they have sometimes an oscillatory spasm of the head, especially when tired. They may have some nystagmus. The handwriting is cramped and peculiar. They have attacks of severe vertigo, resembling labyrinthine disease, and these attacks may even end in unconsciousness and be accompanied with rigid spasms. In the early stages they often pass as neurasthenics.

Study of Individual Symptoms.—The symptoms of cerebellar disease are not very numerous. It is important to understand exactly their character, and I should like to say a few words regarding those which I have enumerated.

First, and most important of all, as it is the most frequent, is the *vertigo.* The vertigo that goes with cerebellar disease may be objective or subjective, or both, but the characteristic quality of the vertigo in which the cerebellum itself alone is involved, and not the vestibular or other nerves, seems to be this: The vertigo is a subjective one, and is often not so much a real vertigo as a sense of insecurity and fear of falling. Patients who have this peculiar vertigo are attacked with much the same sensations that one would have if poised on a narrow support over a dangerous abyss. They have a feeling that their sense of equilibrium may not be equal to supporting themselves, and there comes a feeling of apprehension along with the distinct sense of inadequacy to keep the equilibrium steady. The patient with ordinary objective vertigo is often content to grasp something and hold the head against the support; but a person with the true subjective cerebellar vertigo seeks at once a place where he can lie down or brace himself. Objects do not whirl around before his eyes, but the floor in front of him seems to move up and down, like the deck of an unsteady ship. This vertigo is particularly apt to disappear when the patient is in a recumbent posture, and to quickly develop when the patient rises or stands. It is accompanied with feelings of weakness and exhaustion also—an acute myasthenia. Ringing in the ears may accompany it, but it is only an incident. There is not apt to be nausea with this form of vertigo, except when it is of very intense degree, when the patients often fall to the ground and lose consciousness.

All these phenomena may occur in very severe cerebellar lesions. In the typical labyrinthine vertigo, however, there is always some objective as well as subjective disturbance, and the patients often make quick, staggering, forced movements, and are more apt to fall to the ground with nausea and faintness. There is also a tremendous amount of tinnitus, and one finds disturbances of the functions of the internal ear.

Secondly.—The *nystagmus* of cerebellar disease, I cannot say, is always distinctive, but it seems to me that it is usually and rather different from the ordinary nystagmus, due to peripheral and nuclear changes of the oculomotor nerves. It has been found experimentally in animals that in the nystagmus which results from cerebellar injury, the movements are slower to one side than to the other, and that the quicker movements are towards the side of the lesion. This is also the case in some brain tumor cases. The nystagmus is usually not a persistent one, but only brought out by turning the eyes to the side or up and down, and the nystagmus is much more commonly a lateral one. Oscillatory movements, which are, perhaps, correlated in character to the nystagmus, occur also in cerebellar lesions. These consist sometimes of a simple lateral oscillation of the head, which may be termed a "lateral head nystagmus," or sometimes a persistent nodding oscillation.

Thirdly.—The *constrained attitudes* of cerebellar disease are among the most characteristic of the symptoms. In cerebellar tumors these positions

most often suggest something of the position of a person with a wry neck; that is, the head is turned to one side and the chin a little elevated, and the body is sometimes curved away from the side towards which the head is turned. In other cases, the head is held in a rather fixed position, and the trunk is curved laterally, so that

Fig. 2.—Attitude in cerebellar disease (sclerosis).

the patient stands as if he had a pain in the side. In still other cases, the patient simply seems to stand in a slouching, lopsided way, which is looked upon by friends as being simply an ungraceful habit of posture. Tremors of the hands and of the face, while frequently produced, and very characteristic in animal experiments, are not constantly seen in cerebellar disease in man.

Fourthly.—The *muscular weakness*, or "parasthenia," as it is called of cerebellar disease, is a thing about which we have rather few clinical studies. After an attack of a comparatively mild type of vertigo or after an attack of cerebellar vomiting, there is a long period of muscular exhaustion. There occur also in cerebellar disease periods in which the patient seems to be unusually exhausted, drowsy, and when all effort seems to be very difficult. Such patients also are very easily fatigued, because the effort of working the muscles that are not well guided, is generally great. Sometimes cases of ordinary "nervous prostration" are probably due to a defective or perhaps originally weak cerebellum. It is much harder to walk a mile, balancing along on a railroad track, than to walk on a straight, broad path, and this, I take it, explains the easy exhaustibility of the muscles in cases where the cerebellum does not properly innervate the system.

The *asynergy* which is described by French writers I have not noticed often or found very characteristic.

Fifthly.—The *Gait.*—The cerebellar patient has a reeling gait like that of a drunken man in serious cases. But this is not found in smaller lesions. Here we find only a careful gait, the patient taking short steps, and walking with a rather wide base, and inclining to one or the other side. It is especially in the bad labyrinthine irritations that he reels and pitches violently. Sometimes there is a kind of festination or pitching forward as in paralysis agitans, and the patient takes short steps as in an exaggeration of the gait of senility. While the cerebellar patient walks unsteadily he generally can stand fairly with his eyes closed, but unlike the patient in locomotor ataxia, he has sometimes a tendency to pitch backwards or forwards or sideways; more often it is the backward pitch.

These disorders nearly disappear when the patient is in the recumbent posture. Then he moves the limbs and head freely and purposely.

53 West Fifty-third Street.

PROGRESSIVE MUSCULAR ATROPHY OF CERVICOBULBAR TYPE OCCURRING WITH CERVICAL RIB.*

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and
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Hugo Levi[1] refers to a case reported by Borchardt in 1901, in which in association with bilateral cervical rib, symptoms regarded by Oppenheim as those of syringomyelia were found. Borchardt concluded that cervical rib may occur with diseases of the nervous system, especially syringomyelia. Oppenheim mentions a second case of syringomyelia with cervical rib observed by him. Levi gives the history

* Read before the Section on General Medicine of the College of Physicians, March, 1906.

[1] Hugo Levi, *Neurologisches Zentralblatt*, November 1, 1904, p. 988.

FIG. 1.—Showing great atrophy in the lower part of the face, the shoulders, and especially the upper part of the upper limbs.

of a case in which the symptoms of multiple sclerosis were found associated with cervical rib. He refers to Helbing's statement that scoliosis is almost constant with cervical rib. In the case that we report lordosis was present.

Levi acknowledges that multiple sclerosis in his case may not have had a close connection with cervical rib, but as many regard each of these conditions as a congenital defect, some relation between them may have existed. Oppenheim has advanced a similar view in regard to the association of syringomyelia with cervical rib. I have recently had the opportunity to study a case, which presented the symptoms of cervicobulbar palsy associated with cervical rib, and without sensory disturbances. The occurrence of such a palsy in so young a person is extraordinary, and makes the case one of unusual interest. We may assume that some defect of the central motor system was present from the embryonic period in this case, and that the cervical rib was merely another congenital anomaly. It is well known that where one congenital malformation is present careful search may reveal others. Every effort was made to obtain a necropy in this case, but without success. The patient died a few months after examination. The symptoms indicate a progressive atrophy of the cells of the anterior horns of the cervical region and of the motor bulbar nuclei with probably little implication of the pyramidal tracts.

Two cases of syringomyelia (Borchardt, Oppenheim), one of multiple sclerosis (Levi), and one of cervicobulbar palsy (Spiller and Gittings) associated with cervical rib have been observed. These are all diseases that are supposed to result from faulty development of the central nervous system, and such as might occur with anomalous developments elsewhere in the body.

The notes of our case made December 10, 1904, are as follows:

G., nineteen years old, is the younger of two children. He was healthy until about six months ago. He never was very stout. He has not had any pain except in the back of the neck, but this has not radiated into the shoulders, and was probably a result of the atrophy. When he was nine years old he had a severe fall on the pavement, was unconscious, and had convulsions, but has not had any convulsions since. He has not had headache. He has smoked much, and has been a great swimmer. He is very irritable and complains of much difficulty in swallowing; he has had many falls. Speech has been peculiar, he talks with great difficulty, and his speech is very indistinct and bulbar in type. He is not aphasic and can say what he wishes to. The tongue is protruded straight, is greatly atrophied, especially on the left side, and presents marked fibrillary tremors. The soft palate is almost immovable. The masseter muscle on each side contracts, but the contraction is not very strong. Saliva dribbles from the mouth. The jaw jerk is not very prompt. He cannot blow out a lighted match. He separates his lips with difficulty, when his teeth are placed together, and while he can draw up each corner of the mouth imperfectly, he does not draw up the left corner quite so well as the right. He closes the eyelids firmly, and wrinkles the forehead well on each side. The cheeks are extremely atrophied, and there is very little flesh on the lower part of the face. Sensations of touch and pain in the face are normal, as are also the extraocular muscles. The

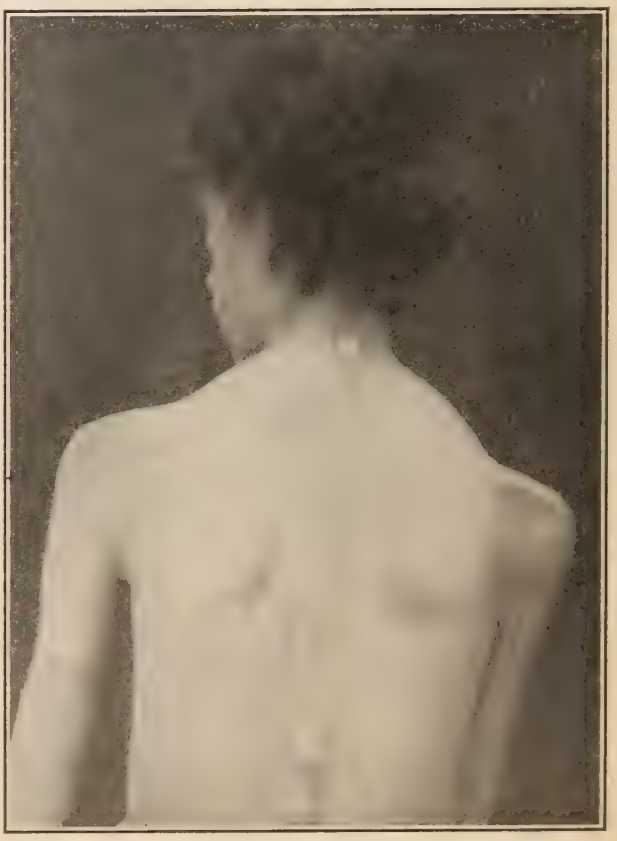

FIG. 2.—Showing the prominence of the scapulæ.

FIG. 3.—Bilateral cervical rib, more pronounced on one side. Not so distinct in the reproduction as in the photograph.

iritic reflex to light is prompt. When his head is moved backward he has pain directly over the upper part of the spinal column. He can bend his head backward and forward and to the left, but cannot turn it to the right. There is no tenderness to pressure over the upper part of the neck. The vertebræ are prominent, and the muscles of the neck are atrophied. Hearing as tested by a watch seems to be normal in each ear.

The upper limbs and trunk are greatly wasted. He cannot raise the right upper limb at the shoulder at all, and can raise the left only to a right angle with the trunk. The biceps jerk is very weak on each side. The right upper limb in the upper part is more wasted than the left. He has no triceps reflex on either side, no biceps reflex on the right side, and very little on the left. He cannot flex the right forearm on the arm, but can flex the left. The grasp of the right hand is feeble, and that of the left hand is good, though not normal. The scapulæ stand well away from the trunk, leaving a deep depression beneath each. The vertebral column is curbed backward in the thoracic and cervical portions. Sensations for touch and pain are normal in the trunk and upper limbs. Fibrillary tremors are not distinct (at a later examination, December 30, 1904, they were very distinct in both upper limbs). The lower limbs are much better developed than the upper, but are somewhat wasted. Voluntary power and resistance to passive movements in the lower limbs are good. The patellar reflex is prompter than normal on each side, the Achilles reflexes are about normal. Babinski's sign is not present. Sensations for touch and for cold are normal in the lower limbs. He walks up and down stairs, dances and seems to have little or or no loss of power in the lower limbs.

Dr. Grayson made an examination of the throat on December 30, 1904, and reported: "Pronounced paresis of palatal muscles on both sides, possibly a little more on the right side, also some atrophy of palatal muscles on the right side. Paresis of upper pharyngeal muscles. Complete paralysis of the epiglottis. Sensation for touch in the pharynx and soft palate is apparently normal."

A PRACTICAL VIEW OF TENT LIFE IN THE SOUTHWEST.

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"Where, in the great Southwest, should this tuberculous patient be sent to obtain the best results?" "Where will he find open air tent life the most satisfactory?" "What instructions should he receive to insure the quickest benefits?" These questions are asked oftener than they are answered.

An immense amount of work has been done of late years to inform the public as well as the medical profession regarding the prevention, diagnosis, and treatment of tuberculosis in its various forms. There is one phase of the treatment of the disease, however, which has been but lightly touched upon, i. e., the proper location and instruction to the patient, that he may get the best and quickest results from open air or tent life, as well as the necessary information to govern him in the change from the familiar home climate to one often totally different. The question as to where each individual patient will be the most quickly and permanently benefited is, of course, to some extent conjectural, but practical experience has done much to solve the problem. The writer has from necessity lived for several years in many locations in the West and Southwest, which are popularly considered bene-

FIG. 1. A three-room tent house near Phœnix, Arizona.

ficial for this disease, and has met many hundreds of sufferers in every condition, from the so-called incipient stage to the hopelessly incurable.

The lamentable fact which even the casual observer cannot help but notice is that very many patients are sent to locations not suitable for their condition, or are sent to "the land of perpetual sunshine" without regard to definite location, whether of altitude, temperature, or relative humidity. The most valuable time in the cure of the disease is thus wasted, while the patient wanders from place to place, often receiving widely different advice, and becoming more and more despondent with each move. To add to his discomfort he is frequently without advice in advance regarding conditions to be met with, such as proper apparel, tent living, and dietary conditions to be encountered.

Many cases have come within the writer's observation where lives might have been saved had proper detailed instructions been given in advance in the home town. For instance, patients with weak hearts and diseased lungs trying to get well in great altitudes where the simplest effort causes suffering; in cold, windly sections in the winter time instead of in those of quiet, warm sunshine; men used to steam-heated rooms advised to live in tents, when the temperature was often below the freezing point. The usual result is a rise in his temperature, pneumonia, or kindred complications.

It is impossible for many physicians to personally inform themselves regarding the virtues of different climates by personal visits. Advertising matter of this sort is usually deceptive and

FIG. 2.—A private sanatorium near Phœnix, Arizona; tent house in the rear.

misleading, and interested people in any location believe that their particular location is the best for all stages of the disease—except the hopeless one.

Reliable, detailed information can seldom be obtained from any particular location itself (owing to this prejudice), but such information should be obtained from disinterested observers. Nor can information be reliable, unless considerable time is given to each location. All of these Southwestern places have the "best climate in the world" for some portion of the year, of either long or short duration. Unprejudiced facts regarding different locations having widely different climatic conditions should be available for every physician. Unbiased information from those who have been compelled to make wide, personal investigation should benefit many sufferers.

THE DESERT.

Towns in the Southwest that are comparatively near together often have widely different altitudes, temperatures, and other climatic conditions. Within a radius of a few hundred miles altitudes may vary several thousand feet, while temperature, wind velocity, and other conditions

FIG. 3.—A tent settlement in Arizona.

change correspondingly. It is not generally understood that within the boundaries of the Territories of Arizona and New Mexico the conditions are so different that, while one location may in the summer have broiling heat, another location may at the same time have very cool weather; that in winter one section may have delightfully warm days, while the other is wrapped in snow and ice, with a temperature below zero. It is on account of these conditions that the greatest care should be used in placing a patient at any season of the year, especially where tent life is recommended.

The southern portions of Arizona and New Mexico are, in the main, of comparatively low altitude, and are much warmer during the entire year. The northern portions are mountainous, mainly of great altitude, and therefore cooler in summer and with severe winters, snow, zero weather, and high winds are not infrequent.

Southern Arizona and New Mexico.—The altitude of towns in the southern portion vary from about sea level at Yuma, eleven hundred feet at Phœnix, two thousand feet at Castle Hot Springs, and twenty-five hundred feet at Tucson, and thirty-five hundred feet at Roswell, N. M. These are all practically desert towns, and the humidity in each case is very low under ordinary weather conditions. The total yearly rainfall is comparatively slight, and owing to the limited amount of vegetation any ordinary moisture is

FIG. 4. A group of tents, Roswell Tent City and Sanatorium, Roswell, New Mexico.

quickly absorbed or evaporated. There are few days during the winter when tent life is uncomfortable for patients who are naturally robust and used to some exposure. There are nights during January and February, and occasionally March, when the thermometer will go as low as 28 to 32°, but in the main the night temperature will not be below 40° or more. At this season of the year the thermometer will show a range of thirty to forty degrees in the twenty-four hours. Owing to these conditions patients who are not naturally strong or who are in a somewhat advanced stage of the disease run great risk in living in tents during this season. Sudden changes of temperature frequently produce complications which more than offset the benefits received. Most resorts, sanatoria, and boarding houses in this region are provided with rooms which have screened porches. On these porches patients can rest and sleep during inclement weather, sleeping within the rooms or on the porches as weather conditions dictate. This arrangement is by far the safest, during cold or rainy weather, for patients who are accustomed to the comforts of town and city life. There are bound to be nights in the most favorable climates during the winter season, when a tent is either cold or damp, or both. It is here that the danger of tent life comes in, and this can be overcome in many cases by temporarily occupying a room which is provided with a screened porch. This is not difficult for the reason that the great majority of living houses in this section of the country are built with screened porch sleeping rooms.

All tents are provided with small sheet iron stoves, but these should be used only when necessary for comfort, as they require constant attention and often vitiate the air with smoke. Tents become hot places under the burning sun and cool off very quickly at night. Most of the great number of tents inspected are satisfactory in their arrangements, and many are as comfortable as the average hotel rooms during favorable weather.

A large majority of days during the autumn, winter, and spring months are warm, delightfully clear, and free from wind or humidity. There are very few patients, and these usually hopeless, that do not do well, gaining weight and strength rapidly. Patients living in tents during proper weather usually make far more rapid gains than those living in hotels or apartments.

The section of the country referred to in the preceding is most agreeable for seven to eight months of the year. May and October are very warm, while June, July, and August, and sometimes September are too hot for invalids not used to tropical or semitropical climates. The heat is so intense that it becomes debilitating, particularly for nervous temperaments. This fact is not always conceded, but practical experience proves it to be correct, especially for tent dwellers.

Tent life in this section has multiplied with great rapidity in the past few years. Individual tents and tent settlements or resorts are mostly placed outside the town limits, usually several miles out on the desert where they are free from moisture caused by street sprinkling, irrigation, and contaminating dust from the streets. Of the towns mentioned before Phœnix, being the largest and in many ways the most enterprising, is best equipped for furnishing both the necessary comforts as well as the luxuries so essential to the recovery of the average sick person. There are a number of tent sanatoria, tent settlements, and hundreds of smaller places of every degree from cheap to high class. They are usually well conducted, but no rigid rules as to conduct or diet are enforced. For this reason the home physicians should be most careful in giving detailed instructions as regards matters of personal conduct, hygiene, and diet. Carelessness in such matters is common and often retards quick recovery.

These conditions prevail to a somewhat less extent in Tucson and the other towns mentioned. The altitude of Tucson is greater than at Phœnix, being about twenty-five hundred feet, and the prevailing winds stronger and more persistent, owing to conditions surrounding the town. As there is practically no irrigation or cultivated land it is somewhat dryer than Phœnix. There are very few tent resorts, the patient in many

FIG. 5.—Outside view of patient's tent, Roswell Tent City and Sanatorium, Roswell, New Mexico.

cases buying or renting an isolated tent, and supplying his own food. Properly cooked, nutritious food can seldom be prepared within the limits of a tent, and this course is therefore usually very undesirable.

In many other cases the patient rents a furnished room or tent, and obtains his meals at restaurants. As these are usually not good, more than ordinary care should be used in prescribing a system of diet that will render a high quality of meats less necessary, fine, nutritious, well cooked meats can seldom be found anywhere in the Southwest. Other food stuffs of good quality can nearly always be found in abundance.

Northern Arizona and New Mexico.—Towns in the northern sections of these territories, as well as in Colorado, are in a much greater altitude, and therefore cooler during the summer months, and very much colder during the winter months. Prescott, Albuquerque, Santa Fé, Las Vegas, Silver City, and Fort Bayard (farther to the South), as well as Colorado Springs and Denver, range in altitude from 4,800 feet to 7,000 feet. They have rain, snow, and at times very cold weather during all but the summer months. These towns have strong, almost daily winds during all but the warm months, making the colder months often unpleasant to the invalid and often dangerous to tent dwellers. Living in tents during severely cold weather should be *forbidden*. These towns and cities have fairly good, but somewhat expensive hotels, furnished rooms, and tent settlements, but the tents are much less numerous.

Practical experience proves that for patients who are not robust the great altitude, wind, and cold combined make too heavy a drain on the system, and the vast majority of sick people do not do more than hold their own. These places are, however, delightful during the warm summer months. About eight months of the year (October to June) in the southern section and four months in the northern section is as nearly ideal as possible. It is almost absolutely necessary to make this change in location in order to get the best results in the twelve months. No patients, unless they be physically strong and with excellent nervous systems, should be subjected to the blistering heat of the South in the summer or the cold, windy days of the winter in the northern section.

Southern California has been expensively advertised as having an "all the year round" climate good for *everyone*, but a careful study of every town in that section proves that with the exception of San Diego they all have too much moisture, too constant fogs, and too long a rainy season for pulmonary disorders. This may sound like heresy, but a careful, unbiased investigation amongst hundreds of patients proves it to be a fact. There are dry, delightful months there, but these should be selected with care. The late summer and autumn months are usually dry, pleasantly warm, and very dusty.

In all of the towns mentioned in Arizona and New Mexico there are catholic institutions or hospitals, and they are in nearly every case exceptionally well conducted and are particularly desirable for advanced cases, as the patient receives better attention than in hotels or tent settlements. They are, however, undesirable for sensitive people to whom the constant sight of invalids is exceedingly depressing.

In this whole section the food question is a more or less serious one for the invalid. For this reason the milk and egg diet should be most persistently insisted upon. These articles of food can be obtained of the best quality with little or no effort. Cold storage eggs are much in use throughout the West, and the patient should be warned against them. While the city bred man will miss the choice cuts of meat he is used to at home, there is no reason why he should not gain weight and strength on a diet from which they are practically omitted. The majority of patients sent to this region are almost or totally uninstructed regarding the proper diet for his individual case. The local physician can do much, of course, but the home physician is, or should be, much better informed regarding his patients requirements.

Physicians should insist on patients providing themselves with their own woolen blankets when-

FIG. 6.—Inside view of bedroom, Roswell Tent City and Sanatorium, Roswell, New Mexico.

ever possible, disinfection of bed clothing is far more rare, than is generally supposed. In many places also only cotton blankets are provided. Patients should be most carefully warned against careless expectoration, such instructions are frequently omitted altogether. It is appalling to see the almost universal habit of careless expectoration in streets and about hotels, tents, and rooms.

Cost of Living.—To people of ample means the expense of a temporary sojourn for health's sake is a matter of no importance. To the average man. however, it is a serious matter, and he should be advised, to some extent at least, regarding the conditions he is bound to meet. The cost of living in the Southwest, especially to the "tenderfoot," is much higher than in the eastern or middle States. This section produces but a small fraction of what it consumes, and owing to high freight rates and the rapacity of nearly every one with whom the stranger comes in contact, the necessary expense of decent living is fifty per cent. or more higher than the average man is accustomed to.

Board may be obtained in sanatoria, tent settlements, etc., at from ten to twenty-five dollars per week. The best hotels (which should all be classed as second or third rate) charge from three to six dollars per day. Wearing apparel, provisions, house furnishings, etc., are much higher than in the East.

In this connection a word of warning must be given against sending patients to this country who are not provided with sufficient means to carry them through a protracted period. One of the sad sights to be met in every town is the large number of weak invalids in a penniless condition. Charitable people and public institutions are taxed beyond their limit to provide support or transportation for weak or dying invalids. Such people should be kept at home. No tuberculous invalid can improve under privation. Employment at paying wages *cannot be obtained,* except for a few skilled mechanics who are strong enough to work. Hundreds of men are constantly looking for work which will only yield them the poorest food and lodgings. *Keep such patients at home.*

Mental Occupation.—It is almost universally the case that the invalid suffers from a lack of anything to keep his mind from dwelling on his troubles. He is told not to worry and not to do anything. The result is he frets and worries all the time. In sheer desperation he often succumbs to the blandishments of the town nuisances, gambling, cards, the saloon, etc. Here the tent dweller has the advantage for as he is usually removed from the immediate vicinity of the town, he can easily find more healthy ways of occupying his time. Riding and driving are nearly always beneficial (especially the latter), and if a man has the right stuff in him he can and will take care of his own outfit. With his horse, his books (some study if possible), and perhaps his gun and dog, it is surprising how quickly and pleasantly the days will pass. He forgets to worry in amusing himself. Any part of this section of the country is interesting if the patient will stop fretting and open his eyes.

Time Necessary for a Complete Cure.—Most business men sent west with tuberculosis go against their wills, and too often are led to believe that comparatively few weeks or months will completely restore them to health. The quick and often amazing gains which they frequently make only helps on the delusion. They gain in weight, appearance, and apparent strength in a few weeks or months, return home only to break down again, return for a somewhat longer period, recuperate more slowly, but return to city life and ways. The third time they return they do not do well, and are either confirmed invalids, or die away from home. Many such mistakes might be prevented if the home physicians would make the patient thoroughly understand what a long tedious battle he has got to fight. Those who understand this disease know that no more than a sham cure can be effected in a few weeks or months. More lives are practically and actually lost by this delusion than were ever lost in battle.

The Southwest with its pure, dry, warm air and tent life can do good to all tuberculous patients, can do much for many and can work wonders for a few, but to get the greatest benefits in the shortest time he must be *placed right* at the start and be told what to do and *what not to do* at all times.

A NOTE ON PECULIAR ATTITUDES IN EPILEPSY DURING SLEEP.*

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One who works in a community of more than a thousand epileptics, and who has occasion to make nightly visits to large numbers of them, can select certain distinctive phases of their lives that are not apparent to physicians who have an occasional epileptic among their patients.

Fig. 1.—Low grade imbecile from epilepsy.

In the men's infirmary at the Craig Colony in which 150 low grade patients are cared for, I have observed a peculiar similarity of posture during sleep in a large number of them. As will

* Read before the fifth annual meeting of the National Association for the Study of Epilepsy and the Care and Treatment of Epileptics, held in New York Academy of Medicine, November 29, 1905.

FIG. 2. Epileptic imbecile, high grade.

be noticed from the accompanying photographs, many of them sleep "curled up," that is, with legs flexed upon the thighs, while the arms are in a semiflexed position back of the knees when the latter are flexed. In addition the head is found bent forward until it rests securely upon the knees. Many of these low grade patients invariably cover their heads entirely with blankets which exposes them to the dangers of asphyxia in case of attacks occurring during sleep. Other patients of low mentality sleep in a sitting posture night after night the year around, while

FIG. 3. Epileptic imbecile, hemiplegic type.

still others simply brace the head against the pillow as it stands on edge at the head of the bed, as shown in the morning by the perfect impression of the back of the head on the pillow. One of the accompanying photographs shows a boy who for twenty months past has slept flat upon his abdomen with one arm outstretched above the head, while the other arm is in a semiflexed position behind the head. A number of such patients occupy the same position during sleep. One sleeps soundly the entire night with his head hanging over the side of the bed in a dependent position—a position that to a normal individual would be one of the utmost discomfort.

Still others sleep with their arms above the head, the fingers clasped and supporting the head in this manner. Some sleep with their heads resting upon elbows and hands, while others sleep in a posture in which the head is flexed until it touches the breast, without giving any support whatever to the head. A few lay outstretched upon the back with heads greatly extended, doing so by means of a pillow rolled up and arranged to conform to the scapular and interscapular region of the back. A great number of these patients prefer to sleep curled up on a mattress upon the floor, for the reason that they fear attacks during the night. They would rather

FIG. 4.—Epileptic idiocy.

sleep thus than occupy a bed of ordinary height from which they might possibly fall. Some occasionally do this, receiving scalp wounds and bruises, but I have never known of a serious accident to follow such falls.

FIG. 5.—Epileptic dementia.

While there may not be anything of any particular scientific import in this clinical note, it seems to me to be interesting chiefly from the fact that all patients who assume these extraordinary attitudes during sleep have practically no mentality, standing but little if any above animals in this respect.

SUPRACONDYLOID FRACTURE OF THE HUMERUS.

By Charles C. Page, M. D.,
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The following case illustrates the excellent result obtained by the prompt reduction and accurate replacement of the fragments in a supracondyloid fracture of the left humerus:

The patient, a boy, age four and one half years, was brought to the New York Hospital on September 15, 1905, by his father, who stated the child had just fallen several feet high from a ladder. Inspection showed an exaggerated backward displacement of the condylous fragment, closely simulating a backward dislocation of both bones of the forearm. Ether was administered and examination revealed a fracture at the

Fig. 1.—M. K., aged four years. Supracondyloid fracture of the left humerus, two days after the injury.

base of the condyles, the lower fragment being freely movable, and overriding the upper posteriorly. Reduction was made by traction with the forearm extended in full sapination with gradual flexion of the elbow and counter fraction on the humerus. In this way I brought the elbow into flexion at a little less than a right angle. A posterior moulded splint of plaster of Paris was applied, and an x ray taken the following day without removing the dressings. The accompanying skiograph shows that reduction was not altogether complete. Further traction and counter traction was made, the elbow being at a right angle, the forearm was brought up easily into acute flexion, which position was maintained for three weeks, when light passive motion was begun.

At the end of five weeks union was complete and all dressings removed. A second skiograph was then taken with the splint removed, which shows the good opposition of the fragments. The photograph was taken twelve weeks after the injury. Flexion and extension are perfect. No "gun stock" deformity or loss of "carrying function."

I was particularly astonished at the ease with

Fig. 2.—M. K., aged four years. Supracondyloid fracture of the left humerus, five weeks after the injury.

which the elbow was brought into acute flexion upon my second attempt at reduction. When the elbow can be easily flexed to an acute angle, it is good evidence that the displacement has been overcome. Care should be taken, however, in the pres-

Fig. 3.—Supracondyloid fracture of the left humerus, five weeks after the injury.

ence of much swelling not to flex the elbow too acutely at first, otherwise dangerous constriction of the brachial vessels might result. Daily inspection of the hand and fingers for the first few days and the condition of the radial pulse should be noted.

218 West Fourth Street.

DIFFERENTIAL DIAGNOSIS OF THE ACUTE INFECTIOUS DISEASES.*

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In considering the diagnosis of the acute infectious diseases, I would first call your attention to that of smallpox, as, although I have seen more than a thousand cases of the disease, I have seen as many incorrectly diagnosticated. In a typical case there should be no difficulty, but there are so many irregular forms, to perplex even the expert, that the physician who says he has never made a mistake in the diagnosis of smallpox, either has not had a large experience, or does not tell the truth.

SMALLPOX.

Smallpox is one of the most contagious of the exanthemata, and few persons exposed to the disease escape, unless protected by a previous attack or by vaccination; and just how long the immunity will last in a given case is impossible to say. The glycerinated virus does not give as long immunity as the humanized lymph did.

The period of incubation of smallpox is usually ten to twelve days, and during that time there are no subjective symptoms or danger of contagion. The stage of invasion is frequently marked by a chill, often convulsions in children, intense headache, and severe pain in the back, the latter is present in more than half the cases, and it should be noted that it is not common in the other contagious diseases. There may be delirium, nausea, and vomiting. The temperature as a rule is high, and may reach 103° to 104° F. the first day; the pulse is rapid and full, and the face flushed.

Before the true eruption, usually on the second day of the disease, a rash sometimes appears, morbilliform, scarlatiniform, or purpuric in appearance, and is oftener seen in the milder cases. The inguinal region and the axillæ are the favorite locations, although it may appear on the back and arms. As a rule it lasts twenty-four to forty-eight hours, and vanishes with the appearance of the papules. Its frequency seem to vary in different epidemics. The morbilliform is the most common, and resembles measles, but the absence of catarrhal symptoms, the rash appearing on the second day with the irregular distribution, lesions not elevated and disappearing quickly, should leave no doubt as to the diagnosis. The scarlatiniform may be mistaken for scarlet fever, but the absence of angina and characteristic tongue, the uneven distribution of the rash and absence on the face, and later the appearance of papules, would clear the diagnosis. When the lesions are confined to the inguinal region it is about certain that we are dealing with a case of smallpox. The purpuric rash may be seen in a mild attack, or it may be followed by hæmorrhages in the lesions later.

On the third or fourth day the true eruption appears, as small red spots, which in a few hours become papular, elevated, and indurated, and are usually seen first on the mucous membrane on the mouth, then on the forehead and wrists, and after spreading to the face, extend over the whole body. With the appearance of the eruption there is a marked alleviation of the constitutional symptoms, and the temperature is said to fall, but my experience has been that it usually does not until two or three days later. The papules increase in size, turn to vesicles with clear contents on the fifth to sixth day, and then become umbilicated. The eighth day the contents become yellowish in color, the shape changes, becoming globular, and the umbilication disappears; there is an aveola around the pustules. With the pustulation the fever and general symptoms recur and may be severe. They subside in two or three days, although in some cases they persist for a week or more. The pustules begin to dry first on the face, and follow the course of eruption. They break and crusts are formed, and it may be some time before they all disappear.

The papular stage has often been mistaken for measles, but the marked constitutional disturbances with severe pain in the back and absence of catarrhal symptoms, should put one on his guard. In smallpox the temperature falls soon after the appearance of the lesions, but continues high in measles. The eruption on the soft palate in smallpox is raised, red and elevated, differing from Koplik's spots, which are bluish with white dots, and seen on the buccal membrane. In smallpox the concentric grouping is absent and vesicles soon appear. To one with experience there is a marked difference in the feeling of the eruption, that of measles is softer to the touch, while in smallpox it is firm and shotty.

There is an hæmorrhagic form of smallpox, where an eruption is often seen on the first day, and extends over the whole body, dusky, dark red in color, not disapppearing on pressure. Dark red and purplish ecchymoses develop and the skin may become black. Hæmorrhages take place in the conjunctivæ and various mucous membranes. The patient may die before any papules appear, or on close inspection a few small vesicles may be seen on the forehead, wrist or groin, grayish in color, which never develop to any extent. These cases are always fatal, and the character of the disease is often not recognized.

The following is an example of many cases which have occurred in this city:

A man died before the apppearance of any papules, and his physician diagnosticated it as malignant scarlet fever. Fourteen days later two other members of the family developed smallpox, and subsequent investigation showed that the man had undoubtedly died from that disease.

Another case was that of a woman, who died after three days' illness with a marked hæmorrhagic eruption over the whole body, with hæmorrhages from the uterus, bowels, kidneys, and mucous membrane of the mouth. Careful investigation just before death showed three smallpox lesions.

This form is most likely to be confused with scarlet fever, where we have the characteristic

* Read before the West Side Clinical Society of New York, May 10, 1906.

angina and tongue, the constitutional symptoms are not so pronounced and the severe backache is absent. The eruption in smallpox is darker and more dusky in color, does not disappear on pressure, and there are hæmorrhages in the conjunctivæ. Some claim that it is more likely smallpox if the patient is an adult, but this is of no value in making a diagnosis.

When both smallpox and typhus fever are prevalent and death occurs before the appearance of the true eruption, it is sometimes very difficult to make a diagnosis. The characteristic facial expression seen in typhus is of great aid, and when the true eruption appears it clears the diagnosis. In cerebrospinal meningitis the rash develops gradually, and in successive crops, with irregular distribution. Retraction of the head and rigidity of the neck are present. Lumbar puncture would settle the diagnosis in doubtful cases. Hæmorrhagic measles has an eruption, which is more bluish or purplish in color, and Koplik's spots and catarrhal symptoms are present. Hæmorrhagic smallpox has been diagnosticated as purpura hæmorrhagica, but a diagnosis should always be made from the history of the case and character of the eruption.

One would not suppose there would be any difficulty in diagnosticating septicæmia from smallpox, and the following case will therefore be of interest:

A few years ago a woman, who was supposed to have been exposed to smallpox, was taken suddenly ill with headache, vomiting, fever, backache, and on the third day a hæmorrhagic eruption resembling scarlet fever, but darker in color, appeared over the whole body with hæmorrhages from the uterus. The following day it was reported to the board of health as smallpox. There were no papules or vesicles on the body, nor hæmorrhages in the conjunctivæ; and besides there was a peculiar appearance to the eruption, which made me doubt its being smallpox.

The woman died the next day, and a post mortem showed a septic endometritis, and streptococci were obtained from the blood and peritoneal serum. Besides, no other case of smallpox developed.

Hæmorrhages may take place in the lesions during any stage of the eruption, but the later they appear the less serious the attack. In mild cases I have seen hæmorrhages take place in the pocks on the legs during the vesicular stage and then abort.

Another toxic secondary eruption sometimes appears about the fourteenth day on the body and often on the face, accompanied with rise in temperature. It consists of an erythematous rash, diffuse and dusky red, lasting two to three days, and followed by a profuse and rapid desquamation. The skin directly around the pock is often free from the eruption, which gives it a peculiar appearance. The rash may resemble either scarlet fever or measles, but the desquamation is very different, and the points of diagnosis previously given would apply.

Mild or modified cases may have few, if any symptoms, the patient merely having a feeling of malaise, and the eruption may be the first thing noticed. This may be slight and run a very irregular course; lesions may be small and dry in a few days, some of them not advancing beyond the papular stage. Again, they may run a typical course, until they become turbid, when there is a retrocession, as in varicella. Sometimes the lesions are very superficial and become vesicles during the first twenty-four hours, appearing first on the body instead of the face. Cases have been reported with only a single lesion on the body.

The lightest case I have seen was in a boy of six years, who was successfully vaccinated for the first time twelve days before, when his brother was removed to the hospital with smallpox. I saw him the day before the eruption appeared, and he felt perfectly well. Twenty-four hours later, although there was nothing to be seen in the mouth, he had two small papules on his right wrist and one on his forehead. These were shotty, elevated, and firm. There was no elevation of temperature, and he had no symptoms during the whole course of the disease. The next day I found six lesions on the face and wrists, vesicular, and some of them were umbilicated. No other lesions appeared, and all disappeared in seven days, leaving very superficial scars. Another very mild case was that of a child of seven years, five years after a successful vaccination. There were no subjective symptoms, and about twenty characteristic vesicles were scattered over the body, which disappeared in ten days. In both cases the disease might have escaped notice had it not been for the previous cases in the family.

We sometimes see a very mild type in persons who have never been vaccinated, but it usually occurs when a certain degree of immunity remains from a previous vaccination.

Cases have been reported without any eruption. The following case occurred in this city some years ago:

A woman nursed her husband during an attack of confluent smallpox. She was pregnant, and gave birth to a six months' fœtus, which had on the face and hand pustules, apparently of the eighth day of smallpox. The mother had had no eruption, nor any of the other symptoms, except pain in the back, which was attributed to her condition.

Some assert that there is a peculiar odor from the body which is diagnostic of smallpox, but I have failed to discover it. During the suppurating stage there is an odor from the decomposition of the discharge, but it is not characteristic of the disease.

The question is often asked whether there is any use in vaccinating a person who has been exposed and probably contracted smallpox. Within the first three days, vaccination, if successful, will probably abort the disease, and between that time and the fifth or sixth day will materially modify it, but performed later will have no effect upon the attack.

The differential diagnosis between smallpox and chickenpox in many cases presents the greatest difficulties. Some maintain that the two diseases are the same, and others that there is a difference between the two. Time will not allow me to discuss this, except to say that one disease has never been contracted from the other. Patients ill with variola contract chickenpox, and those with varicella take smallpox. Chickenpox cannot be transmitted by inoculation, as can smallpox. A person ill with chickenpox can be successfully vaccinated, and I have vaccinated a large number of persons ill with smallpox, with-

out a single successful result. Many claim that chickenpox does not occur in adults. I have seen a large number of such cases, and the condition is not rare. It is still said by some writers that lesions of different stages present at the same time in one locality is diagnostic of chickenpox. The first well marked case of smallpox of this character that I ever saw was in an Italian many years ago, and I, as well as several experts, made the diagnosis of varicella.

He had been ill about ten days, and scattered over the whole body was a discrete eruption, consisting mainly of rather superficial pustules, about the size of a small pea, and crusts. There were also some vesicles and commencing papules. On the abdomen were papules, vesicles, pustules, and crusts, and traces also showed where the crusts had been thrown off. Many of the lesions were fairly superficial, and the duration of most of them was only a few days. Later other members of the family developed smallpox, and I changed my diagnosis.

About the same time I saw a young man with a profuse eruption covering the whole body, the lesions coming out in successive crops, so that there were papules, vesicles, and pustules side by side. I, as well as several experts, made the diagnosis of varicella, until his brother developed a typical case of smallpox.

In both cases I discarded the thought of smallpox on account of the polymorphous eruption. At that time, as far as I know, all the authorities maintained that such a condition could not exist in smallpox. Since then I have seen a number of such cases. It is stated by some that when a polymorphous eruption is present, it is a combination of smallpox and some other disease, but in the cases I have seen, all the lesions have been those of smallpox. Even recently I have seen it stated that lesions are always present on the palms and soles in smallpox and never in chickenpox, but I have seen them in many cases of chickenpox, as well as absent in variola. If, however, there are many lesions on the palms and soles and few on the rest of the body, it is pretty certain to be smallpox.

The following were interesting cases:

Some years ago a woman was admitted to Bellevue Hospital for tonsillitis. There was no eruption, but the next morning when I saw her there were a few vesicles on the mucous membrane of the mouth, and about a dozen on the face and neck, all of them superficial and irregular in shape. Three or four had ruptured, forming crusts. The lesions were very similar to those in varicella, but as there were none on the back or body, I considered the case suspicious, and had the patient isolated. She was seen again in the afternoon, when a number of characteristic smallpox papules had appeared. I saw her in the smallpox hospital two days later, and the eruption was general, but apparently of the seventh day, instead of the third.

In this case only the first lesions were superficial, but in many cases seen since all the lesions have been superficial, and many flat and irregular in shape, and at no time have there been any typical lesions of smallpox.

A young lady, of eighteen years, whom I saw in consultation, was supposed to be suffering from a case of modified smallpox. She gave the history of headache, pain in the back, slight constitutional symptoms, with a temperature of 101° F., and on the following morning she noticed two lesions on the left side of her neck, followed a few hours later by others on her forehead, the eruption gradually extending over the body. On the fauces were distinct vesicles, the size of a small pea. The forehead and face showed about a dozen vesicles, shot like in character, some slightly umbilicated, also a few lesions which appeared to be papules, but careful examination showed that they were commencing vesicles. These lesions were all about the same size, none of them irregular in shape, or very superficial, and from them alone a diagnosis could not have been made. On the left side of the neck were two vesicles, about three eighths of an inch long by one quarter of an inch wide, elevated, flat, fairly superficial, irregular in shape; the centre had dried, forming a crust. The neck and chest were covered with a discrete eruption, consisting of vesicles, pinhead in size and larger, some deep and firm, others superficial, surrounded by an inflammatory area. A few lesions, superficial, slightly elevated, pinpoint in size, were appearing, which quickly became larger and vesicular in character. The same condition existed on the arms, although there were very few lesions. The back was thickly covered with vesicles, some just appearing, varying in size from pinpoint to that of a small pea. The majority were superficial, but a few were deep and firm. Two vesicles were large, flat and irregularly shaped. Small vesicles were just beginning to appear on the legs, but there were no lesions on the palms or soles. The diagnosis of varicella was made from the lesions on the back and chest, there being no distinct papules, the life duration of individual lesions being short, most of them superficial and irregular in size, and absence of lesions on the palms and soles.

The following points will be of aid in a differential diagnosis between most cases of smallpox and varicella, although there is a great variation in the unusual types, and no one point alone can be relied upon.

If the person has been recently successfully vaccinated it is probably not smallpox.

In smallpox the invasion is usually more severe and lasts from three to four days, while in varicella the eruption appears on the first day, and there is no secondary fever. In some cases of smallpox the invasion is not noticed, and the secondary fever is absent.

In variola, the eruption appears first on the mucous membrane of the mouth, then on the forehead and wrists, while in varicella, though it may be present in the mouth, it is first seen on the shoulders and chest. It may appear, however, on other localities in both diseases.

In smallpox the lesions are more uniform and deeply seated, while in varicella they are superficial, flat, and irregular in shape.

They may be superficial in smallpox and deep seated in varicella, but in the latter it is rare not to find some large irregular lesions, distinctly characteristic.

The eruption in smallpox commences as small papules, not usually becoming vesicles before the second day, while in varicella they appear as macules, becoming vesicles in a few hours, and are seldom shotlike, except on the palms and soles, localities where they are not so commonly seen.

The first lesions in smallpox may be vesicles, or they may become vesicular in a few hours, but by carefully examining the patient there will usually be found, in the early stage of the dis-

ease, some papules which will decide the diagnosis.

In variola the vesicles, as a rule, have indurated bases, while in chickenpox they are superficial, and can be easily brushed off, collapsing early, forming crusts by the second to the fourth day, with a characteristic puckering at the periphery.

The secretion in varicella is more transparent, and the pustules are composed of a single cell, while in variola they are made up of several. In smallpox the lesions, as a rule, appear in a regular course over the whole body, while in varicella they usually come out in successive crops.

Few scars result in varicella, and the duration of the disease is considerably shorter than in smallpox.

Monkeys can be successfully inoculated with the secretion of patients ill with smallpox, but they cannot be with varicella; and this means has been used to determine a doubtful diagnosis.

Pustular syphilis is another disease that has often been mistaken for smallpox. The distribution of the eruption may be similar, but in syphilis there are more lesions on the body than the face, the size of the lesions vary, and papules and pustules are mixed. The vesicles and pustules invade the summit of the lesions, which do not become full and globular. The eruption in smallpox is more uniform, and in severe cases is always seen on the palms and soles, where it is not so common in syphilis. The lesions run a different course, chronic in syphilis and changing rapidly in variola; besides, the history of the onset, lesions coming out in successive crops and grouped in syphilis, would aid one to make a diagnosis.

Between smallpox and a severe attack of influenza with marked headache, fever, delirium, and backache, it may be impossible to make a diagnosis without the eruption.

Smallpox and acne have often been confused. A book agent came to the Polyclinic some years ago to be treated for what he supposed was acne. He did have a few acne lesions, but mixed with them were some smallpox papules, which might have escaped notice. The mistake should never be made, after a careful investigation into the history of the case, constitutional symptoms, character, and evolution of the lesions.

Iodide and bromide eruptions often resemble that of smallpox, but are never seen on the palms of hand and soles.

I saw a patient of Dr. A. R. Robinson, who had a pustular eruption from taking potassium iodide. The lesions on the face were similar to those I had seen in several cases of smallpox, and from them alone a diagnosis could not be made. However, there was no difficulty from the history and examination of the body.

Smallpox has been mistaken for typhoid, but the insidious onset and gradual rise of temperature should aid in the diagnosis.

A number of cases of crusted eczema of the face have been reported as smallpox, but this mistake should never occur.

CHICKENPOX.

The only disease besides smallpox that is apt to be confused with chickenpox is impetigo contagiosum, which has no constitutional symptoms, and the lesions as a rule are confined to the face and neck, appearing as vesicles, small and superficial, which increase in size, coalescing with flat crusts.

MEASLES.

Koplik's spots are pathognomonic of measles, and are present in about ninety per cent. of the cases, appearing one to four days before the eruption, as irregular or round rose colored spots, with a bluish white speck in the centre on the buccal membranes. A strong sunlight is usually necessary to discover them. They are accompanied by redness of the pharynx and anterior and posterior pillars of the fauces.

The disease which is most commonly confused with measles is rubella, and although there is no difficulty in making a diagnosis in a marked case of either disease, there are atypical cases where it is almost impossible.

Measles is the more contagious, and the period of incubation is about ten days, while it is longer in rubella. Prodromal symptoms in measles last three or four days, while in rubella rarely longer than twenty-four hours, or may be absent. The invasion in measles is more severe, while catarrhal symptoms are slight or absent in rubella. Koplik's spots are usually present in measles and never in rubella. Forchheimer's spots on the palate are not seen in measles.

The eruption in measles is macular or papular, arranged in irregular concentric groups, and begins on the face, while it gradually spreads over the rest of the body, a process taking two to three days. In rubella the lesions are smaller, not as elevated, as a rule discrete, not arranged in groups, spread rapidly, fading in part before they are fully developed elsewhere, and disappear more quickly. During the eruption stage catarrhal symptoms are severe in measles and usually absent in rubella. Lymphatic glands are enlarged in rubella, also seen in measles, but not to so marked a degree. In rubella there is no characteristic temperature curve, and it is rarely 102°; in measles it is 102° to 104°, reaching maximum with the eruption. Desquamation in measles is branny, while it is absent or slight in rubella.

Some years ago the attending physician of one of the large institutions in this city asked me to see twenty-four children whom he had considered to be suffering from measles, but other cases developed that made him doubtful of the diagnosis. There had been no cases of scarlet fever or measles in the institution for some time, and many of the children had had both diseases. Some of the children were quite ill, with marked bronchitis, coryza, and conjunctivitis, and a temperature varying between 102° and 103°. The tongue was coated, the cervical glands enlarged, and an eruption, papular in character and arranged in irregular groups, resembling measles, was present over the whole body. These cases showed all stages of the eruption, some at its full height, others when it was just appearing, and again when it was disappearing. A few of the cases if seen alone could not have been diagnosticated from measles.

Other children had no acute invasion or catarrhal symptoms, the fauces were congested, the tongue clean

or slightly coated, with a few red papillæ at the tip, and the temperature ranged from 99° to 101°. The cervical glands were enlarged and the eruption was erythematous, not elevated, punctate in places, and resembled that of scarlet fever, but did not remain on any part of the body over twenty-four hours, and was not followed by any noticeable desquamation. Two showed a mixed eruption, resembling measles on part of the body and scarlet fever on other parts.

The other cases were characteristic of rubella, there was slight congestion of the conjunctivæ and fauces, other catarrhal symptoms absent or slight. The tongue was fairly clean, the temperature ranged from normal to 101°, and the cervical glands were enlarged. The eruption was characteristic, consisting of papules, pinpoint in size and larger, especially marked on the trunk and extremities, with patches of normal skin between.

I diagnosticated all as rubella and other cases of this disease developed. They were all isolated in one large dormitory, and none of them acquired any other disease, nor did any appear in the institution.

I have known a number of cases of typhus fever to be diagnosticated as measles, and there is more danger of this in children, where typhus runs a mild course. In measles there are the catarrhal symptoms, and the rash is abundant on the face and extends downward; in typhus the eruption is usually absent on the face, and soon petechiæ appear, with marked nervous symptoms.

Macular syphilis has been mistaken for measles. The eruption in syphilis is slower in developing, and the lesions are more uniform in size and distribution, and the face is not so involved; in addition, the history of the case will be of assistance.

Antipyrine, quinine, chloral, copaiba, and cubebs sometimes cause an eruption which resembles that of measles, but Koplik's spots, constitutional and catarrhal symptoms are absent. The eruption is not elevated and is irregular in distribution and usually absent on the face. Itching is more marked.

One would not expect to make a mistake between measles and scarlet fever, but there are irregular cases in which this has occurred. In measles the macules may coalesce and resemble the eruption of scarlet fever, but somewhere on the body the characteristic eruption of measles is apt to be found. In scarlet fever the rash is sometimes blotchy, especially on the extremities. Careful examination of the case should leave no doubt of the diagnosis. In measles we have Koplik's spots and the catarrhal symptoms; the initial fever is not as high, and the eruption appears later than in scarlet fever. Angina, strawberry tongue, great glandular enlargement, and lamella desquamation are absent.

Influenza may resemble measles during the stage of invasion, but Koplik's spots and photophobia are never present.

Erythema multiforme has been mistaken for measles, although it is more likely to be confounded with rubella. The eruption is usually confined to the hands, arms, face, and legs, and is rarely present on the trunk. The history of the onset, and difference in the constitutional and catarrhal symptoms would aid one when in doubt.

A rash, following the administration of diphtheria antitoxine, may resemble that of measles, although it is more apt to simulate scarlet fever. The same points as for erythema multiforme would apply.

SCARLET FEVER.

Mistakes in the diagnosis of scarlet fever are very common, mild cases not being recognized, and rashes called scarlet fever. A rash is not pathognomic of the disease, and we may have scarlet fever without any eruption.

Many writers say there is no difficulty in diagnosticating scarlet fever from rubella, but there are cases where it is impossible from the eruption or without watching the case.

The period of incubation in scarlet fever is from one to seven days, instead of two to three weeks in rubella. Scarlet fever has an acute invasion, prodromal symptoms and angina more marked, vomiting usually present, and catarrhal symptoms absent. The temperature is apt to be 104° for three or four days from the onset. In rubella, the tongue is not as red, and although there may be a few elevated papillæ at the tip, it does not have the marked strawberry appearance. Forchheimer's spots, consisting of soft, discrete dark red papules on the soft palate, sometimes extending on the hard palate, are not seen in scarlatina.

The eruption in scarlet fever appears first on the neck and shoulders, instead of on the face as in rubella, and spreads more slowly, consisting of minute red points, confluent in patches, which reach their maximum in three or four days, and usually remain six or seven. The rash in rubella disappears more quickly and is less punctate. In some cases the eruption disappears after a few hours, only to reappear the next day. Patches are seen about the lips, a condition not usually seen in scarlet fever. The glands below the angle of the jaw are more apt to be enlarged than the cervical in scarlatina. A few discrete pinhead macules or papules can sometimes be seen on the wrists in rubella, which would aid in the diagnosis. The desquamation is more marked in scarlet fever, and the cuticle comes off in flakes. Complications and sequellæ are also common.

I have seen a rash with influenza that resembled that of scarlatina, but the pains, catarrhal symptoms, absence of characteristic angina and tongue would aid one in the diagnosis.

Scarlatina ought not to be mistaken for diphtheria, but this has often happened by physicians seeing an exudate in the throat, and calling the case diphtheria without carefully examining the patient. It should not be forgotten that both diseases often exist at the same ime.

Quinine, mercury, belladonna, and salicylic acid sometimes cause a rash, which is difficult to diagnosticate from scarlatina, but the invasion symptoms are absent; the throat may be red, but the tonsils and uvula are not swollen and the strawberry tongue is absent. The eruption is usually irregular in distribution or diffuse without punctation, and there is apt to be somewhere on the body a sharp line of demarcation from the normal skin, a condition not seen in scarlet fever. Besides, the intensity of the rash

is out of all proportion to the constitutional disturbance. The desquamation begins earlier on the hands and feet than in scarlet fever.

Cases of intestinal autointoxication often have a rash that resembles scarlet fever, and sometimes when the eruption is not marked, constitutional symptoms mild or absent, tongue and throat not characteristic, it is impossible to make a diagnosis, and one has to wait and see whether the patient desquamates. It should not be forgotten that sometimes in young children there is no noticeable desquamation following scarlet fever. In mild cases of scarlet fever the eruption may not be general and escape notice, or may be very slight, disappearing in a few hours.

Some years ago I saw a child, four years of age, who appeared to be in perfect health the evening before. There was a slight erythematous eruption on her face and chest, which disappeared within twelve hours. The temperature became normal with the disappearance of the eruption, and at no time was it over 100°. The tongue was slightly coated, with a few enlarged red papillæ, there was no vomiting nor enlargement of the glands, and the throat was normal. I did not think it was scarlet fever, as at that time I had never seen a case with a normal throat, although I have seen several since. Later albumin was found in the urine, and the characteristic desquamation of scarlet fever followed, which proved it to be a case of that disease.

Another case was that of a boy, eight years of age, who complained during the afternoon of being drowsy, and when he went to bed an eruption was noticed on his body. I saw him an hour later and found a faint erythematous rash on his face and body, which disappeared on pressure, but was not punctate in character. The temperature was 100°, the tongue was coated with fine fur and covered with elevated red papillæ. There was slight angina and no enlarged glands or catarrhal symptoms. The boy was constipated, but there had been no vomiting. I gave him one grain of calomel in 0.1 grain doses, and when I saw him the next morning his bowels had acted freely, and the eruption had disappeared. His temperature was 99°, but the tongue and throat remained the same. I made a diagnosis of scarlet fever, and later the characteristic desquamation of that disease developed.

I have seen many times in the diphtheria hospital a rash following the administration of antitoxine, when it was impossible to say that it was not scarlet fever; but the eruption disappears more quickly, and the desquamation is more like that of measles.

Dermatitis exfoliativa and erythema scarlatinoides may resemble scarlet fever, but the constitutional symptoms are absent or slight, the rash is not as general, and angina and characteristic tongue are absent.

I had an interesting case in a woman ill with a very severe attack of scarlet fever. The rash had disappeared, and in the second week she became sick with a chill and all the symptoms of an acute invasion, the eruption reappeared, and for the second time she went through the regular course of the disease.

TYPHUS FEVER.

In typhus fever the period of incubation is usually twelve to fourteen days, and the invasion abrupt, the patient being seized with chills or a rigor. Muscular pains are present and headache is severe and continuous, usually confined to the forehead and temples. The temperature the first day, as a rule, is 102° to 104°, and the pulse is rapid. In the beginning the mind is clear, although patients seem to have little interest in their surroundings. Prostration is very marked early in the disease, and if they attempt to walk after the second day they stagger as if intoxicated. The facial expression is characteristic, the eyes are intensely congested, the face dull, dusky red in color, most marked over the cheek bones, which gives a very stupid expression. I have walked through the wards of an institution and diagnosticated cases of typhus from the facial expression alone.

The temperature has a slight morning remission until the fourth day, when it may be 104° to 107°, and remains continuous for four or five days, after which it falls suddenly or decreases more gradually. A catarrhal condition of the entire respiratory tract is present, and pneumonia is a common complication.

Welch says the eruption is present in ninety-five per cent. of the cases, but I have never seen a case where it was not present some time during the disease. It usually appears on the fourth or fifth day, and I have seen it preceded by a rash resembling scarlet fever. I will cite one case.

Henry C., thirty years of age, attacked with vomiting and sore throat. The next day the temperature was 103°, pulse 108, respirations 20. An erythematous eruption resembling scarlet fever was present on his chest and legs. There was slight angina, and the tongue was red, with enlarged papillæ. Two days later the rash had disappeared, and the characteristic eruption of typhus fever developed. There was no desquamation.

The true eruption comes out in one crop and consists of a subcuticular mottling and small rose colored macules with petechiæ. The lesions are pin head in size and larger, irregular and roundish in shape, very slightly elevated, and at first disappear on pressure. They are usually seen first on the anterior surface of the trunk, and later on the back and extremities; the face, palms, and soles, as a rule, are free. After 24 to 48 hours they do not disappear on pressure, and the brightness of color is lost. The lesions may be few in number or very numerous, and their disappearance is followed by a branny scaling. The petechial spots are most common about the flexors of the joints, groin and back.

With the full development of the eruption the temperature is at its height, pulse rapid, and tongue dry and brown. Delirium develops, which may be followed by stupor or semiconsciousness. The patient lies with his mouth half open, teeth covered with sordes, and is often too weak to put out his tongue. The abdomen is tense and somewhat tympanitic. Constipation is present, as a rule, but diarrhœa may develop toward the end of the disease. The bladder may become paralyzed and incontinence or retention of urine result. There is an odor from the body that is very unpleasant and pathognomonic. If death has not occurred, about the fourteenth day the temperature falls, the tongue becomes moist, the mind clears, and recovery is more rapid than one would expect.

There is an hæmorrhagic form in which the patient dies before the characteristic eruption appears.

The differential diagnosis between typhus and typhoid sometimes presents great difficulties. In typhoid the invasion is not so abrupt, the temperature runs a different course, and the eyes are clear.

The eruption, which is more papular and lighter in color, appears later, and comes out in successive crops, lasting only a few days, and disappearing on pressure. It is usually confined to the abdomen, and is not so profuse as in typhus, and petechiæ are not present. Diarrhœa is more apt to be present, and the character of the stools is different. Widal's test may settle some doubtful cases. In typhus we have the headache, and prostration and nervous symptoms are more marked early in the disease. Some say the eruption is never seen on the extremities in typhoid, but I have seen several such cases.

I saw in consultation a man and his wife who were taken ill about the same time. Both had a profuse eruption on the abdomen, arms, and legs, so that the attending physician, who had seen a number of cases of typhus, was doubtful of his diagnosis. I was able to make a diagnosis of typhoid, and subsequent development proved my diagnosis to be correct.

I have seen four cases where the eruption came out in successive crops. The following case shows some of the difficulties in diagnosis:

A. K., twenty-two years old, had been sick five days, not feeling well for a few days before. The face and eyes were not congested, and he had no headache. The tongue was moist and only slightly furred. The temperature was 101° in the morning and 103° at night. Diarrhœa was present and stools light in color. The eruption appeared a day later, coming out in successive crops of small rose-colored papules on the abdomen, slightly elevated, and disappearing on pressure. Three days later the condition had completely changed: intense headache alternating with delirium was present, the face was dusky and the eyes congested; temperature was 105° and continuous. The eruption had become dark colored with petechiæ, profuse over abdomen, chest, sides, and back, and not disappearing on pressure. Death took place a few days later, and a post-mortem showed no lesions of Pyer's patches, and only such conditions as are found in typhus.

In relapsing fever there is no eruption, and the prostration is not so severe. After five to seven days the temperature becomes normal, followed by a relapse.

Cerebrospinal meningitis has an eruption that is somewhat similar to that of typhus, but develops in successive crops, with irregular distribution. The headache is more apt to be in the back of the head, and is sharp and boring in character. The temperature is irregular and the pulse slow. Rigidity of the muscles of the neck, opisthotonous, and strabismus are present. Lumbar puncture would settle the diagnosis in doubtful cases.

I saw an interesting case in one of the hospitals in the city which was reported as typhus fever. The patient was unconscious, and no history could be obtained, but a petechial eruption was present on the body, especially marked on the wrists. I excluded typhus and the other exanthemata, and said I thought it was a case of ulcerative endocarditis, which the autopsy confirmed.

It should not be forgotten that a person may be ill with two or even three of the exanthemata at the same time.

In conclusion, I would say that each case must be carefully studied in regard to its history, its symptoms, and its lesions. The character and life duration of the lesions, individually and collectively, must be taken into consideration. Besides, there is something in the general appearance of most of the exanthemata, which cannot be described, that aids the physician with experience in his diagnosis.

148 WEST EIGHTY-FIFTH STREET.

THE RELATIONS OF GASTRIC ULCER TO GASTRIC CANCER.

BY M. R. BARKER, M. S., M. D.,
Chicago.

It is quite impossible for us to discuss any definite and positive relations between gastric ulcer and cancer, because we do not know that such exist. We believe that traumatism is an ætiological factor in both conditions, but we cannot say that this constitutes a relation between them any more than there would be a relationship between gastric ulcer and a broken arm, traumatism being an ætiological factor in each of these cases.

There are certain well known facts, however, that seem to indicate a relationship between gastric ulcer and cancer, which may be much closer than we know. By keeping these facts in view all the time we may be able to discuss this subject so as to at least create a suspicion of these relations, and not become lost in some of the surrounding by paths, which are liable to terminate, as did Emerson's road in the forest, in a squirrel track that went up a tree; some such ending being not at all unfamiliar to those who engage in or follow medical discussions.

What are these facts, the constant sight of which is to prevent us from such a doom? They are as follows: We have a reasonable theory as to the ætiology of gastric ulcer. It is an established truth that we are in ignorance as to the ætiology of cancer. It is an established fact that a cancer may invade a fresh open gastric ulcer, or it may invade the cicatrix of an ulcer long after the ulcer has healed. Hyperchlorhydria is an essential factor in the ætiology of gastric peptic ulcer. Gastric cancer and hyperchlorhydria are incompatible conditions, yet the two may exist in the same stomach at the same time. We must bear in mind, however, that the incompatibility of these two conditions is not because of the destructive influence of the hyperchlorhydria upon the cancer, but because of the vicious influence of the cancer upon the production of hydrochloric acid.

When the condition of gastric peptic ulcer prevails and is first invaded by cancer, or in other words, when cancer first begins to infiltrate the tissues of a gastric peptic ulcer, the ulcer is more benign than malignant; yet if a microscopical examination of this tissue was made at this time cancer would be demonstrated and hyperchlor-

hydria would be present. As the ulcer, however, becomes more and more malignant and less benign in character, as it is sure to do, the hyperchlorhydria decreases, and when the ulcer becomes wholly malignant the hyperchlorhydria will have disappeared, not only this, but the hydrochloric acid will have totally vanished from the gastric juice. A perplexing condition is sometimes produced by these changes. When the invasion of the cancer takes place the hyperchlorhydria begins to disappear from the gastric juice, and an improved condition of the patient supervenes, this continues until the hydrochloric acid is reduced to below normal, or until it has entirely disappeared, the patient being relieved from the distress due to the excessive hydrochloric acid and the distress caused by the malignant condition not having developed. In other words, there is an interval between the beginning of the decline of the excessive hydrochloric acid in the gastric juice and the occurrence of the malignant symptoms in which the patient is greatly improved, and in some cases had considered himself well, only to be disappointed by the appearance of a worse condition than the first. The improved condition of our patients in gastric ulcer should not lull us to sleep, but place us on our guard, attention being given to the declining hyperchlorhydria, and if the hydrochloric acid continues to decline after it has reached the normal, suspicions of cancer involvement should be entertained, and if it totally disappears, though the patient is greatly improved, we should regard the condition as serious and watch for the first appearance of positive symptoms of cancer.

Dr. Leube reports a case having all the symptoms of gastric ulcer, according to history and symptomatology. The patient was ordered to a rest cure, with a strict observation of diet. He improved remarkably so that after a few weeks he could partake of beefsteak, etc., with great appetite and without pain, and gained three pounds a week in weight. Suddenly during apparently complete recovery symptoms of perforation occurred, chills, severe pain, and drum like distention of the abdomen, with collapse, death occurring after two days. The autopsy (Ranser) revealed an ulcer the size of a two mark piece in the pylorus with carcinomatously infiltrated borders and a small perforation.

In this connection I will report one of my own cases:

Mr. K., aged forty-seven years, presented himself for treatment August, 1898. The following history was elicited: He had been ill about one year, during which time he had complained of dyspeptic symptoms of constantly increasing severity. His present symptoms and findings were hyperchlorhydria nine tenths of one per cent., examination following test meal. There was hæmatemesis, fresh blood, every two or three days, sometimes quite profuse, at other times only a trace; pain commencing a short time after eating, always in the pylorus and always aggravated or reproduced by shifting contents of stomach to the site of the pain. There were many other minor symptoms, anorexia, vomiting, sleeplessness, etc., etc., with marked constipation. A positive diagnosis of gastric peptic ulcer was made. The following treatment was advised: Liquid diet, consisting mostly of milk; lavage of the stomach, daily at first; rest and proper therapeutics as indicated. The results following this treatment were a gradual improvement with returning courage. This treatment varied somewhat from time to time as seemed indicated, and was pursued for seven months, at the end of which time the patient was considerably improved. At this time, however, he began to improve much more rapidly than at any time before. All symptoms were ameliorated. An examination of the stomach contents after a test meal showed a decided decrease in the free hydrochloric acid. The patient continued to improve, his appetite returned, he could eat a large variety of foods without discomfort, and he gained in weight rapidly. I made quite frequent examaminations of the gastric juice after test meals and found the hydrochloric acid gradually but surely decreasing; this continued until the normal free hydrochloric acid in the gastric juice was reached. This required three months, during which time the patient rapidly improved. The hydrochloric acid, however, continued to disappear until the examinations showed no trace of it in the gastric juice. This required about two months longer, or five months from the time the hydrochloric acid began to disappear, until it was all gone. The patient improved all this time. The patient now began to develop symptoms of gastric cancer, constant pain, cachexia, the ominous coffee ground vomit, marked emaciation, and tumor in the pylorus. These symptoms became more and more aggravated, and the patient died in two months. Post mortem findings. Open ulcer in pylorus, the size of a silver half dollar, edges elevated and infiltrated with cancer cells.

There is no question about this case; first all the symptoms and findings necessary to make a positive diagnosis of gastric peptic ulcer, which under proper treatment for a long period of time gradually improved, when for some reason the hydrochloric acid began to disappear and continued to do so steadily. Constantly without a stay from the time it commenced until all had disappeared, marked improvement in the patient while this process was going on; then the development of all the symptoms of gastric cancer; death of the patient; and post mortem findings of ulcer, infiltrated with a carcinomatous growth. This case was at first a gastric peptic ulcer, which afterwards was invaded by a cancerous condition, and for a time both ulcer and cancer were present in the same ulcer, but later the malignant condition occupied the whole field and the condition became wholly malignant. I believe such cases are not infrequent. Physicians believing their first diagnosis of ulcer wrong, because their patients died of cancer later, have not reported their cases. As hinted before, I believe the continued, gradual, disappearance of the hydrochloric acid from the gastric juice below the normal, in gastric ulcer, indicates the invasion of the ulcer by cancer and should be regarded with the gravest suspicions, even though the patient is improving by leaps and bounds, and a careful watchfulness should be kept of such a patient to discover the first recognized symptoms of cancer.

It has been frequently demonstrated in post mortem findings and operative work that cancer invades the cicatrices of healed gastric ulcers. This is such a common occurrence that none are surprised to find it.

An interesting question arises: Is there any explanation of the fact that cancer invades the tissues occupied by the gastric ulcer in one case and the scar tissue left by the healing of the ulcer

in another case? In the first case the benign gastric ulcer being transformed into a malignant ulcer in a very short time, and in the second case the innocent appearing scar tissue, left after the ulcer has healed, changed into a malignant growth many years afterwards. Whatever may be the direct cause of cancer anywhere in the body, the medical mind has pretty well decided that traumatism is a very important ætiological factor in cancer. The cancerous growth that develops in the cicatrix of a healed ulcer does not usually develop at once after the ulcer heals, but usually after an elapse of several years. Parallel cases are cancers of the uterus and breasts. The uterus does not develop cancer during the child bearing period at the time when the traumatic insults to the tissues are being perpetrated, but long years after. The mammary glands do not show cancerous conditions while the nurslings are at the breast and the traumatisms are being inflicted, but long after when the youngest child has attained to adult life.

Another question. When did this morbific agent, the outgrowth of which is cancer, enter these tissues; when they were bruised and lacerated and least resistant, when the injuries were being inflicted or years after at the time the malignant condition appears? Before attempting to answer this question let us present another fact. While it is the general rule that cancer occurs long after the traumatism is inflicted, it is not the universal rule. Some young women develop cancer of the uterus and breasts during the child bearing period. When does the morbific agent of cancer enter the tissues in these cases? Evidently at the time the traumatisms were perpetrated when the tissues were least resistant and most susceptible. I believe that the morbific agent of cancer always enters the tissues at this time, but in a large majority of cases lies dormant for many years before developing. Perhaps the beginning of senility presents the perfected conditions for its development, and until then it remains inactive. In gastric ulcer, as anywhere else in the body, in my judgment, the invasion of the tissues by the morbific agent of cancer takes place at the time of the ulcer, at the time when the traumatisms are being inflicted, in some of which the cancer develops at once, and the benign ulcer becomes the malignant ulcer and destroys the patient's life, the ulcer never healing. While in the majority of cases the cancer does not develop at once, but the ulcer heals, the cancer element being in it, which after lying dormant for a variable time develops in the scar tissue produced by the healed ulcer, or if those conditions which favor the development of cancer (whatever they may be) do not appear in the cancer infected tissues, the cancer may never develop.

Another question of interest and general significance arises in connection with this discussion. Why does the excessive hydrochloric acid in gastric peptic ulcer begin to disappear as quickly as cancer begins to invade the ulcer, and continue to disappear until the invasion is complete and the ulcer has become wholly malignant, at which time the hydrochloric acid has totally disappeared from the gastric juice? This query is rendered less easily answered by the fact that the glands of the stomach which secrete the hydrochloric acid are remote from that part of the stomach usually invaded by cancer, hence we are precluded from saying, these glands are destroyed by the cancerous growth, hence the disappearance of the hydrochloric acid from the gastric juice, the fact being that the glands are not destroyed, but rendered functionless. Plainly then we are dealing with a condition, the viscious influences of which are perpetrated otherwise than by direct contact. In other words, the cancer located at one end of the stomach acts through other agents than the tissues themselves upon the glands at the other end of the stomach, producing in them loss of function. We must conclude then that in cancerous devastation a toxine is produced which, acting upon the nerve centres which control the gastric cells, paralyzes them, thus rendering these cells inactive, and that this toxine is produced as quickly as the cancer invades the tissues, and increases as the cancer increases and as the toxine increases, the hydrochloric acid decreases, until it has totally disappeared.

It is a well known fact that cancer and hydrochloric acid only exceptionally exist together in the stomach, and I believe instances like those as I have stated are the only exceptions to the rule. In other words, when cancer and hydrochloric acid are demonstrated in the same stomach at the same time it is because the primary condition was a gastric peptic ulcer, which has been invaded by cancer, but has not become totally malignant. Or the toxines from the malignant growth have not yet fully paralyzed the nerve centres controlling the gastric cells.

We believe there is a peculiar relationship between ulcers of the stomach and cancer, and just what the Gordian knot is that unites these two is a question. We are satisfied that hyperchlorhydria, which is the underlying causative factor of gastric peptic ulcer, has no influence in either promoting nor retarding the complication of gastric peptic ulcer by cancer. In other words, if the ulcer was due to any of the other conditions which cause ulcer of the stomach, it would be just as liable to be complicated by cancer. I believe this is proved by the fact that ulcers of the rectum are often complicated by cancer, and we believe that ulcers of the stomach and ulcers of the rectum, which become complicated by cancer, are exactly parallel cases.

Still we are confronted with the fact that there seems to be some peculiar condition which makes gastric ulcer a suitable soil for the invasion and development of cancer. What this condition is we can only conjecture, owing to our ignorance, perhaps, of the ætiology of cancer. But we believe that traumatism is an important factor in the ætiology of both of these conditions, and that the long continued and never ceasing insults which are being constantly perpetrated upon the mucous membrane of the pylorus in gastric ulcer also produces in these tissues a suitable soil for the invasion and development of cancer.

4625 Greenwood Avenue.

Our Readers' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LIV.—How do you treat spasmodic croup? (Closed September 15, 1906.)

LV.—How do you treat acute articular rheumatism? (Answers due not later than October 15, 1906.)

LVI.—How do you treat sciatica? (Answers due not later than November 15, 1906.)

Whoever answers one of these questions in the manner most satisfactory to the editors and their advisors will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short; if practicable, no one answer to contain more than six hundred words.*

All persons will be entitled to compete under the regulations laid down by the postal authorities. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL.

The prize of $25 for the best essay submitted in answer to question LIII, has been awarded to Dr. L. S. Oppenheimer, of Tampa, Fla., whose article appeared on page 646.

PRIZE QUESTION NO. LIII.

THE TREATMENT OF BURNS.

(Continued from page 651.)

Dr. J. Benedict Prager, of New York, notes:

The treatment of burns varies with the severity and kind of burn. Dupuytren's classification of burns into six classes is too complicated; the simplest classification and the one we all know is that of the first, second, and third degree burn. The treatment may be further subdivided into local and constitutional.

Local Treatment.—The indications are: 1, To relieve the pain and overcome the shock; 2, to guard against congestion and inflammation of the internal organs; 3, to prevent sepsis from absorption of the toxines of the sloughing tissue; 4, to counteract the exhaustion incident to such suppuration. In burns of the first degree the patient is generally relieved by applications of a soothing nature, such as olive oil, that popular remedy called Carron oil, which is a mixture of linseed oil and lime water, and other alkaline applications. The best and simplest remedy that I have found in burns of the first degree is powdered sodium bicarbonate, dusted freely over the affected area; any application that excludes the air and makes a protective covering for the irritated nerve filaments is good; the addition of carbolic acid to the oils or ointments is an excellent procedure; as it produces a certain amount of surface anæsthesia, therefore it relieves the pain. and the acid thoroughly disinfects any discharge that may occur.

An emergency remedy which is excellent in burns of even the second degree is ordinary molasses, which is best put on by soaking bits of blotting paper, ½ inch by 2 inches, in it. and laying them evenly on the entire surface, they must overlap each other, and when sufficiently dry an excellent covering is obtained for the affected area; any excess of molasses at the edges may be wiped away, and dry powder such as sodium bicarbonate or fuller's earth dusted on them. Thus applied molasses excludes the air, is soothing, and prevents decomposition, sugar being an excellent antiseptic. In burns of the second degree in which we have vesication and inflammation of the skin with the formation of bullæ, it is absolutely necessary that strict asepsis should be adhered to. The vesicles and bullæ should be punctured at their lowest point and their contents allowed to drain off, particularly if the burn has been caused by corrosive fluids, as the serum in the vesicles is of a highly irritating nature. Care should be taken that the cuticle should not be removed, as it forms an excellent protection for the excoriated surface; the burnt area should be thoroughly cleaned by bichloride of mercury, 1-10,000 to 1-20,000. After this cleansing the burnt surface should be covered by sterilized rubber tissue, then a few layers of sterile gauze, followed finally by a roller bandage. This rubber tissue dressing acts as a substitute for the destroyed integument, it excludes the air, and makes an excellent and painless covering. The dressings need not be changed oftener than every second or third day unless the odor is quite marked, or the amount of discharge great.

When a burn is at all extensive, in either a second or a third degree burn, no single procedure compares in value to the hot bath. The bath should be about 100° F., and should not be allowed to drop below 98.5° F. It may be continued for days and even weeks; it gives instant relief from the pain by protecting the burnt surface from the air, and for a similar reason it prevents decomposition; when pus is formed it is washed away immediately, and thus a fairly aseptic condition of the burnt surface is maintained; and above all, in the early stages it vigorously combats shock and collapse, which is so often present. From time to time as the solution becomes fouled it will be necessary to replace it. The patient should not be removed from the bath until all the sloughs have been separated, and the denuded surface is ready for grafting.

For lesions of the third degree, but comparatively local in extent, the first thing to do is to carefully disinfect the area with a solution of bichloride 1-2,000, or carbolic acid 1-40, and to cut away all tissue actually dead; this must be done under an anæsthetic, which should be given before the removal of the clothing, as care must be taken not to remove the epithelial covering which protects the burnt area to a certain extent. In the majority of cases the use of some antiseptic powder is preferable to ointments as a dressing. Powders are more apt to remain antiseptic, and their power to prevent suppuration is certainly greater. An excellent powder for this purpose is:

℞ Iodoform, ... 1 part;
Boric acid, ... 7 parts.

This mixture should be sterilized by steaming

it for fifteen or twenty minutes before using. It can be used generously without fear of iodoform poisoning, except possibly in the more extensive burns in young children, when a hot saline bath is usually indicated. Thymol iodide I have found to work well, also zinc oxide, bismuth, and others. Over this dressing there should be placed a few layers of sterile gauze, followed by a roller bandage.

Much good can be accomplished, and deformity from the resulting scar be avoided by keeping the various parts well separated, and by maintaining them in an appropriate position, either by fixation on splints, or some proper mechanical device or appliance.

Constitutional Treatment.—In cases of severe burn it resolves itself into judicious stimulation, that is strychnine sulphate $^1/_{30}$ grain every four hours. Digitalis in the form of tincture of digitalis, 8 minims, may be combined with it. Pain should be alleviated, and later tonics and restoratives be administered; diffusible stimulants such as alcohol and ether may be given hypodermatically when indicated, and where the patient can swallow they may be given by mouth.

Before closing it would be well to speak of the treatment of burns caused by x rays and lightning. Here the treatment does not differ materially from that of any other burn; that is: (1) The lesion must be kept as clean as circumstances will permit of. (2.) All dressings should be thoroughly aseptic, more so in x ray burns than others, as the weakened condition of the surrounding tissues renders them prone to harbor infection which in any way may gain an entrance. (3.) The use of a one per cent. watery solution of picric acid has a beneficial effect of lessening the pain in all cases of burn, and at the same time exerts a beneficial effect on the healing of the condition. Otherwise the treatment should be carried out according to the lines laid down in the foregoing paragraphs.

Dr. Egil T. Olsen, of the U. S. Public Health and Marine Service, observes:

There being no true pathological difference between burns and scalds they will be treated as one in this article. Burns are apt to be deeper and more circumscribed, and scalds superficial and covering a wider area.

Burns are variously classified by different authorities, according to their extent, the most familiar being those of Dupuytren and Morton. For the purpose of consideration of treatment that of the latter is probably the more practical, and is therefore followed.

SYMPTOMS—LOCAL.

First degree: The inflammation manifests itself by a diffuse redness, swelling may occur, and the pain is of a burning or smarting character. These symptoms may last a few hours only, or may persist for several days, and are followed by a desquamation of the superficial epithelium.

Second degree: In this case the inflammation proceeds to a separation of the epidermis from the derma, due to the effusion of serum, with the resulting formation of vesicles or bullæ. If infection of this area is prevented, the epidermis is immediately reformed, and in most cases only slight pigmentation remains. The pain and smarting may be very severe.

Third degree: The local symptoms in burns of this degree vary according to the amount of tissue destroyed, but even this is not always recognizable at once, as much subsequent destruction of tissue usually occurs from sloughing or gangrene, following infection. Pain may be only slight, or may be entirely absent, even in extreme cases, but shock is an almost invariable accompaniment.

SYMPTOMS—CONSTITUTIONAL.

The severity of these symptoms is modified by several conditions. Extensive superficial burns, those occurring on the face, chest, and abdomen, and in the young and aged, being more serious in their immediate effects than a smaller, deep burn, save those even more extensive on the extremities, or than those occurring to healthy young or middle aged adults.

First degree: Constitutional symptoms are unusual, but when an extensive surface is involved, or in the extremely young or aged, shock may be pronounced, and even death may result.

Second degree: When only a small area is involved the symptoms are slight or entirely absent, but when an extensive surface is affected the shock is usually severe and its presence is indicated by symptoms similar to those found in shock due to other causes, i. e., weak and rapid pulse, rapid and shallow respiration, subnormal temperature; the skin is blanched and cold, and even a chill may occur. This sometimes terminates in death with delirium and coma, or with symptoms of internal congestion, but in most cases a reaction soon occurs, manifested by a rise of temperature and symptoms of congestion of the internal organs, nausea or vomiting (in children especially), thirst, constipation (followed by diarrhœa in some cases), and other symptoms of an acute febrile attack. Duodenal ulceration, with perforation, peritonitis, and death has been noted as an accompaniment of severe burns, especially those of the abdomen.

Third degree: Burns of this degree are always accompanied by shock, varying in degree. In severe cases, even if reaction is established, death may follow from coma due to cerebral effusion, or from inflammation of the lungs, kidneys, or intestines following congestion of the internal organs, or it may occur later from exhaustion following pyæmia, septicæmia, or tetanus.

Treatment: The presence of shock and pain command our first consideration. Shock is combated by the use of stimulants, whiskey or brandy, strychnine, atropine, and ammonia, used to such an extent as may be deemed necessary by the condition of the patient, and also by the application of external heat. At the same time the pain should be relieved by the use of morphine hypodermatically. Shivering or chills are best treated by complete immersion in a hot bath, to which sodium bicarbonate may be added for the relief of pain, or, if this is impracticable, the unburnt parts should be wrapped in blankets and surrounded by bags or bottles containing hot water. The after treatment consists in keeping the kidneys and bowels active, but not de-

pletion, and the administration of nutritious and easily assimilated articles of diet is recommended. Diarrhœa should be controlled by the use of astringents, such as bismuth subnitrate, lead and opium (pills containing 1, and ½ grains of each, respectively), or the vegetable astringents, kino or krameria, combined with some form of opium. Complications should be treated on general principles.

Local Treatment: This will vary somewhat according to the extent and severity of the burn. The first consideration is to afford the parts protection from the air and from further traumatism, and the prevention of infection.

In a simple erythema, sunburn being a common form, the application of a simple cooling alkaline lotion, as a solution of sodium bicarbonate or a paste made of the same, is very grateful, or, the old household remedy, Carron oil (equal parts of lime water and linseed oil), or cold cream, or zinc oxide ointment may be used. The fatty preparations are objectionable, however, on account of their uncleanliness, and the Carron oil also on account of its being a frequent cause of infection when applied to denuded surfaces. In some cases the mere use of an impalpable dusting powder to prevent chafing by adjacent parts or clothing is sufficient. Talcum powder or talcum and starch answer very well for this purpose.

Limited burns of the second degree are very satisfactorily treated with picric acid, a compress being saturated with a one per cent. aqueous solution, applied to the burned area, and covered with absorbent cotton and a bandage. This dressing need not be removed for two to four days, and should then be renewed, and the second dressing may be allowed to remain until the burn heals. This solution, containing gauze compresses ready for immediate use, is always kept on hand.

Extensive burns of the second degree are best treated by means of wet dressings. The clothing should be carefully removed, in such a manner as to carry with it as little undestroyed skin as possible, being cut away if necessary. The surrounding uninjured surfaces should then be cleansed and rendered as sterile as possible, and the burnt area gently irrigated with a 1:5000 solution of mercuric chloride. Vesicles and bullæ are opened antiseptically and allowed to collapse after the serum has been removed. No skin is removed, however loose it may be. Several layers of lint or gauze, previously wet, are then applied to the entire part, extending some distance outside of the affected area, and this again covered with gutta percha tissue, oiled muslin or silk, in order to prevent the too rapid evaporation of the fluid. This dressing should not be removed for forty-eight hours, but should be kept wet continuously, which can readily be done by simply loosening the outer impervious covering and pouring the solution upon the cloths, until they are saturated, every four to six hours. For this purpose I am in the habit of using a saturated solution of bicarbonate sodium, or one composed of equal parts of saturated solutions of boric acid and sodium bicarbonate. When either of these is not immediately available, a normal saline solution is used and answers fully as well. After forty-eight hours the dressing is removed to note whether any infection has developed, and to combat it if necessary, and it is then renewed, and may be allowed to remain until the burn heals, with the occasional wetting as described. Where the skin has been destroyed, or sloughing, with the formation of fungous granulations has occurred, stimulating applications may later be required to hasten the renewal of the skin. For this purpose a solution of copper sulphate (1 to 2 per cent.), or the fused silver nitrate are used. If the denuded area is at all extensive skin grafting should be resorted to early to prevent contraction and cicatrization.

Burns of the third degree, in addition to the measures already recommended for extensive burns of the second degree, require the adoption of general measures to combat and prevent sloughing of the tissues as much as possible, and the application of such splints and forms of extension as may seem best adapted to the limitation of prevention of contraction. Skin grafting should be done early, and if deformities due to contraction or cicatrization occur, plastic operations should be done later, after the tendency to contraction has ceased. Amputation should be done for charring of the extremities.

Dr. Maximilian Lewson, of New York, writes:

Burns being classified by most authors in three degrees we will classify them accordingly, and take up each degree with its treatment:

(1) Erythematous inflammation of the skin without vesication; (2) inflammation of the skin, with formation of vesicles and bullæ; (3) inflammation of the skin, with destruction of the deeper parts, forming extensive and deep sloughs. The treatment is divided into (a) local and (b) constitutional.

Local, first degree: Small areas are affected with much pain. I believe in using lead and opium wash. If the burn is extensive then the best to use is Burrow's solution, which is a solution of aluminum acetate. This solution, which must be clear, is very cooling, and in its antiseptic and astringent qualities healing. The parts must be kept wet with a six per cent. solution so that the gauze may not adhere to the skin and excoriations form. The solution having been used continually for twenty-four hours is then put aside, and a dusting powder used. The powder with which I had the best results consists of:

℞ Zinc oxide. ..... 2 parts;
Bismuth subnitrate, ... 4 parts;
Lycopodium. ..... 1 part.
M. To be used freely.

Local second degree: When blisters are formed and distended with serum open them at once, much relief is found by patient. To dress and protect the skin I have found most satisfactory the old fashioned Carron oil (linimentum calcis). After having used this for twenty-four or thirty-six hours I change to boric acid ointment and use that ointment until the upper layer is almost fully repaired, then I use the dusting powder mentioned before, or use bismuth subgallate.

Local, third degree: The wounds must be treated antiseptically like all wounds, and besides must be protected from the air so as not to

chill the exposed raw surface. Wet dressings of saturated solution of boric acid should be used. If the wounds are sloughy, they should be trimmed; and if stimulation of the wounds is required, I like best to use around the edges dressings of balsam of Peru 1 part in castor oil 5 parts. If the wounds look clean I also use silver foil with good results, covering the area fully. Skin grafting must be thought of in many cases.

Constitutional Treatment.—This depends upon the symptoms of the patient. If there is shock, give aromatic ammonia; alcohol in one of its forms, hot, strong, black coffee; and strychnine if necessary. Opium in one of its preparations may have to be given. Elevating the lower extremities, hot water bottles and warm flannel blankets must be thought of and used if needed. Look after the bowels, kidneys, and skin.

(*To be Concluded.*)

Correspondence.

LETTER FROM TORONTO.

Reciprocity in Licensing in the British Empire.

TORONTO, *September 24, 1906.*

Lieutenant General Laurie, formerly a member of the Canadian House of Commons, but latterly of the Imperial House of Commons, conceived it in the interests of the medical profession of the British Empire if reciprocity in degrees were to prevail throughout all parts of the empire. In 1903, therefore, he introduced his first amendment to the British Medical Act, to so provide, but that amendment failed to pass at that time solely on account of opposition from one Scotch member, who thought that the bill called upon the old country to give more than she was to receive in return. It was reintroduced the following year by General Laurie and the amendment was especially intended to apply to Canada, as there had been some feeling created or brought specially to notice during the South African war that it was a great hardship to Canadians that they could not practise in that country with their various contingents unless they had already secured British qualifications. General Laurie then approached the Canadian Medical Association, asking that a resolution be passed by this national body in favor of his scheme of reciprocity. His communication arrived too late for an expression of opinion from that body at their annual meeting in Vancouver in 1904; but the matter was laid before the various local medical societies of the Dominion of Canada, with the result that some of these bodies forwarded resolutions to General Laurie favoring his scheme of reciprocity between Canada and other parts of the British Empire. It was unfortunate that the Canada Medical Act was not in force, owing to the fact that the Province of Quebec legislature had failed to ratify the Roddick bill, as the Canada Medical Act is popularly called, as otherwise, on the successful passing of General Laurie's amendment, reciprocity might have fully prevailed between Canada and other parts of the empire. Each Province of the Dominion of Canada, however, having control of its own medical matters, made it incumbent on General Laurie's amendment to so provide for reciprocity with each Province separately, which was accordingly done early in 1905 and the amendment finally passed.

That the profession of Canada as a whole view this amendment with favor is shown in the following resolution submitted to and passed by the Canadian Medical Association at Halifax in 1905: That the general secretary of the Canadian Medical Association be instructed to acknowledge to General Laurie the thanks of the Canadian Medical Association for his interest and endeavors in connection with securing reciprocity between the different parts of the British Empire and the different Provinces of the Dominion of Canada. So far as your correspondent has been able to determine, the Province of Nova Scotia has been the first and the only Province thus far to provide for reciprocity in accordance with General Laurie's amendment; and while the other Provinces have not as yet seen fit to follow suit, it is more probably due to apathy than to any intense feeling on the matter one way or the other. In fact, there are probably a great many physicians in Canada in every Province who are utterly indifferent to the subject, while there may be a few who might oppose it. Probably its chief supporters might be found in the ranks of the military. At most the foregoing succinctly sets forth the history of the subject.

Therapeutical Notes.

Tincture of Iodine in the Treatment of Vomiting.—The *Journal de médecine*, April 29, 1906, states that in cases of pulmonary phthisis with irritable stomach, the administration of twelve to fifteen drops of tincture of iodine during the day will relieve and check vomiting.

Cure of Infantile Umbilical Hernia by Subcutaneous Injections of Alcohol.—Lidmanowsky (*Czasopismo lekarskie, Le Bulletin médical*, April 14, 1906) reports that in nine cases of infants affected by umbilical hernia he had used injections of alcohol with satisfactory results. His method is thus described: After pushing back the contents of the hernia into the abdomen he introduces the tip of the left index finger into the umbilical orifice in order to avoid any risk of injecting the peritonæum cavity, and with a small needle introduced under the skin everywhere around the hernia, he injects in different places one c.c. of alcohol. This being done, gauze compress containing a piece of money is applied to the surface, over which is placed some cotton, and this is retained by a roller bandage. This dressing is not disturbed for a week. At the end of this period another injection of alcohol is made as before. The obliteration of the hernial orifice is secured after three or four injections.

Lupulin in the Treatment of Intestinal Diseases.—Stern, in the *Medical Record* of September 22, 1906, gives the following prescriptions. As opium is distinctly contraindicated in enteralgia on account of the production of obstipation, which later may give occasion to colicky pains, he prescribes in milder cases:

℞ Lupulini, ...0.15 gramme;
Acetanilidi, ...0.1 gramme.
Ft. caps. d. t. dos. No. L.
Sig. Three capsules every two to three hours.

Or,

℞ Lupulini, ...0.3 gramme;
Hyoscyaminæ salicylatis, ...0.0005 gramme.
Ft. caps. d. t. dos. No. XX.
Sig. One capsule every three to four hours.

In severer instances of enteralgia nervosa he has found of benefit:

℞ Lupulini, ...0.25 gramme;
Codeinæ sulphatis, ...0.015 gramme;
Atropinæ sulphatis, ...0.0003 gramme.
Ft. caps. d. t. dos. No. XX.
Sig. One capsule every hour if necessary.

When the pain becomes less intense the lupulin acetanilid capsule may be substituted for the last named combination.

For nervous diarrhœa he orders:

℞ Lupulini, }
Strontii bromidi, } .....āā 0.15 gramme.
Ft. caps. d. t. dos. No. L.
Sig. Two capsules three to five times a day.

℞ Lupulini, ...0.3 gramme;
Pulvis ipecacuanhæ, ...0.02 gramme.
Ft. caps. d. t. dos. No. XX.
Sig. One capsule four to six times a day.

A combination which he finds very useful in materially reducing tenesmus and pain, or averting paroxysms altogether, and which, at the same time, diminishes or entirely suppresses the pathological amounts of mucus and the formation of intestinal casts, is the following:

℞ Argenti iodidi, ...0.2 gramme;
Pulvis belladonnæ foliorum, ...0.1 gramme;
Lupulini, ...1.0 gramme.
Ft. supp. (glycerogelat.) d. t. dos. X.
Sig. One suppository at bedtime, if necessary one also at midday, to be inserted into the rectum as high up as possible.

Treatment of Eclampsia Gravidarum.—In a practical note on the treatment of puerperal convulsions, Faix and Herbinet briefly review the approved therapeutics of this condition (*La Gazette médicale du Centre*, through *Le Journal de médecine*, May 6, 1906). When confronted by a case of pregnancy attacked by convulsions, the first effort should be to strive against the toxic agents, and to remove them as rapidly as possible from the system. This indication is admirably met by bleeding. When a vein cannot be conveniently opened at the bend of the elbow, we may take blood from the internal saphenous vein in front of the internal malleolus, where it can be easily felt lying on the surface of the bone. From it can readily be obtained from 500 to 800 grammes of blood, according to the corpulency of the patient. Having removed part of the poisoned blood and reduced the arterial tension by the venesection, other means may be added, such as purgatives, enteroclysis, inhalations of oxygen, and a water diet. The saline purgatives employed, such as Carlsbad or Seidlitz salt, by causing a flow from the intestine, relieve the organism of toxines and act as derivatives of the intestinal mucosa. Enteroclysis completes the antitoxic treatment. By the aid of a long rectal tube, from 20 to 30 litres of boiled water, may be thrown into the bowels; and this may be done twice daily, morning and night. By the mouth, water is also given; either willingly or by force, the patient is made to take 200 grammes of boiled water every hour. If this be done, there is no need to resort to the subcutaneous injections of artificial serum. All the water needed will be taken from the stomach and intestine when given in these large quantities. Moreover, it is questionable if the addition of salt to the blood is an advantage in the condition which is essentially uræmic, and where there already is difficulty in getting salts out of the system. The intravenous injection is proscribed by the fact that the blood tension is already high, and to increase the volume of blood might directly lead to rupture of a bloodvessel, possibly in the brain. Chloral and chloroform are also excluded as unnecessary. They are not condemned because they are dangerous, but because they are superfluous; their only object being to reduce the number of paroxysms. They may, however, act as an additional toxic element and increase the difficulties of elimination. One accident attending the convulsion, the biting of the tongue, should be guarded against by holding the lower jaw firmly against the upper during the attack, or by doubling a handkerchief into a compress, 4 to 5 centimetres in size, and placing it between the two maxillæ. As regards the obstetrical treatment, the cases are divided into two classes in accordance with the period of the pregnancy at which they appear. If they occur during the early months, which is rare, they are to be treated as simple cases of uræmia, knowing that the fœtus will probably be lost and the case thereafter progressively improve. If, however, the convulsions continue in spite of treatment, it will be necessary to empty the uterus. When, as is usually the case, the eclampsia occurs at the time of labor, the dilatation may be incomplete; it is then advisable to wait, no matter what may be the condition of the infant. The viability of the latter is already gravely compromised, and it is not worth while to undertake the risks of a forced dilatation in a uterus which is frequently tetanized. On the contrary, if the dilatation is complete, the delivery should be practiced as quickly as possible, either by forceps or version, according to circumstances. The tissues being œdematous, care should be taken to prevent lacerations of the perinæum, which are, however, difficult to avoid. When they happen immediate union should be attempted, but a secondary perineorraphy will often be required. An intrauterine injection of boiled water should be given after the delivery. On account of the need of using purgatives and the increased danger of infection, the usual vulvar pad and T bandage should not be applied. In a case of severe convulsions after the seventh month of pregnancy, if the patient's death should occur while the heart of the fœtus can still be detected, the attendant should not lose a moment in performing the Cæsarean operation to save the infant. If the eclamptic attack should occur during childbirth, and both mother and child survive, it will be asked if she may nurse her infant. This is answered in the affirmative, and this practice is followed at the maternity hospital without any bad effects to the child.

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TYPHUS FEVER.

The fatal case of disease on board the White Star vessel *Cretic* which occurred while she was on her way to New York recently, and was reported by the ship's surgeon as one of typhus fever, recalls a malady well nigh forgotten in this country and in the majority of highly civilized lands. Time was when the disease was prevalent in certain parts of the United States, introduced mainly by immigrants. The history of typhus fever provides an object lesson, showing that a deadly and contagious affection can be effectively controlled and virtually abolished by stringent sanitary measures.

The disease was probably known to the ancients, although it is not definitely mentioned by any of the early medical writers. The first authentic reports of typhus fever date from the Middle Ages, when such devastating epidemics occurred that they literally decimated the population of the affected regions. It is supposed that some of the plagues which swept Europe centuries ago were in truth epidemics of typhus fever. From 1505 to 1528 the whole of Italy was subjected to recurring, almost continuous inroads of the pestilence, and the loss of life was enormous. In every century typhus fever has followed in the wake of armies. In 1552 the army of Charles V., during the siege of Metz, suffered very severely. When the thirty years' war was in progress typhus fever claimed far more victims than the sword. During the campaigns of Napoleon the loss of life from the disease was appalling; and as a result of these campaigns it became epidemic throughout Galicia, Hungary, and the Austrian Crown Lands. After 1830 the disease abated in Europe, but in England and Ireland there were extensive epidemics, and it was the greatest menace to the jail population. According to Murchison, in 1847 there were 1.000,000 cases of typhus in England and more than 300.000 in Ireland. During the Crimean war, it was a prominent factor in the death rate of both the English and French armies, and Michaeli has stated that, of 200.000 soldiers of the Turkish and Russian armies during the campaign of 1878, at least fifty per cent. were attacked by typhus fever, half of whom died. The French and German armies in 1870 were free from the disease. In 1867 and 1868, however, there were enormous epidemics in eastern and western Prussia.

At the present time typhus fever flourishes with greater or less luxuriance in parts of South America and in the Far East, while England and Ireland, which were the classic homes of the disease, know it no longer. In parts of Europe it occurs occasionally with some severity, but its sting has been removed, owing to present day knowledge of how to prevent it.

A REVIEW OF THE APHASIA QUESTION.

Hypotheses have constituted the building material of science. Some attain the dignity of cornerstones, while others, useful in their day, come to be worthless and neglected. The problem of aphasia is no exception to the general rule; in comparatively recent times the carefully elaborated schemata of Wernicke are being attacked from several sides, and it remains to be seen whether the generalizations of that master mind so recently taken from his labors will prove enduring.

Of the various opponents to the accepted beliefs regarding aphasia at the present time, no one has been more radical than Pierre Marie, the well known neurologist, of Paris. In the latter part of May of this year he again called attention to the results of his observations in the wards of Bicêtre (*Semaine médicale*, May 23rd), in which as a consequence of the detailed analysis of fifty autopsies of patients with aphasia he advances to the position that our present conceptions of aphasia are based almost entirely on theoretical considerations and, lacking the basis of anatomical foundation, are incorrect.

Among his utterances in this noteworthy communication, two may be singled out as offering the most radical departure from orthodox neurological doctrines. Marie here maintains that Wernicke was quite astray in assuming the first

temporal convolution as an auditory centre, that his hypothesis of sensory aphasia, in part founded on this supposition, has no real existence, that the Wernicke scheme of the psychophysiology of language with its auditory, olfactory, visual, and motor image centres is inexact, and hence the doctrine of aphasia falls. But with even more emphasis Marie strives to overthrow one of the oldest and dearest of neurological dogmas when he maintains that Broca's convolution, heretofore deemed the centre of motor speech, plays no special rôle whatever in the function of language. His destructive criticism is the result of a careful analysis of his autopsy material for the past ten years. We must wait, however, for the details of his studies before a critique of his views can be offered.

In the way of constructive interpretation of the picture of aphasia, Marie says that aphasia is essentially an intelligence defect. The ordinary modes of examination so widely in vogue are too superficial to determine the mental status of a patient, and he holds that inasmuch as aphasic patients have been able to respond to simple tests, practically all observers have overlooked the fact that a grave disturbance of intelligence can be brought out by more complicated tests. Aphasic patients have not only lost the sense of words, but they suffer from a very marked diminution in intellectual capacity in general. This is the most fundamental lesion in sensory aphasia, according to Marie, and it bears no necessary relation to a lesion in the first right temporal convolution.

As to the grounds of his belief in the falsity of the old dogma of the localization of motor speech in Broca's convolution, Marie says that there exist right handed patients who have suffered from localized destruction of the third right frontal convolution, and yet have had no aphasia. They are few, it is true, but the doctrine needs universal support if it is to stand. Furthermore, he advances evidence to show that there exist records of autopsies on patients who had had well marked motor aphasia, and yet no impairment of Broca's convolution could be found. Bernheim and Touche have both reported such results. While it is true that in most aphasics a lesion in Broca's convolution may be found, what is the interpretion if the older one is to be rejected? As is well established, aphasia follows the obliteration of a cerebral artery, most frequently the Sylvian, a branch of which irrigates Broca's convolution. Thus one finds Broca's convolution affected, but it is only a part of a much more extensive obstruction to the artery nearer to its main trunk. Hence the involvement of Broca's convolution is purely an accidental and additional feature in the aphasic lesion; it is not an independent isolated factor.

In Wernick's sensory aphasia the patients can talk; at times they present a veritable jargon aphasia, or paraphasia; they understand what is said to them but imperfectly, and, as stated, Marie believes this to be due, not to any loss of auditory verbal images, but to a generalized intellectual impairment. In Broca's aphasia the patient cannot talk at all, and yet shows alike intellectual incapacity to write, to read, etc. Thus Broca's aphasia represents a Wernicke aphasia plus a loss of the power to speak, i. e., in Marie's mind an anarthria, and this is his formula: Wernicke's aphasia plus anarthria equals motor aphasia. Marie localizes the so called Wernicke aphasia in the supramarginal gyrus, the *pli courbe*, and the base of the temporal convolutions and in the fibres coming from this region, an area which Flechsig considers as a special area of association. He further localizes the lesion causing motor aphasia as occurring in the Wernicke area or in the fibres coming from this area and including the area known to be involved in anarthria.

ELECTRIC SLEEP.

During the last few years several well known investigators have devoted considerable attention to the experimental production of sleep by means of an electric current passed through the brain. The substance of their observations, together with certain interesting experiments of her own, is presented by Dr. Louise G. Robinovitch, of New York, the editor of the *Journal of Mental Pathology*, in a work entitled *Sommeil électrique*, published in Nantes, in the French language. The current employed is one of low tension, with interruptions of moderate frequency. Sleep, or at least abolition of the power of voluntary movement and apparently of sensation, may be induced suddenly or gradually. When it is induced suddenly, it is apt to be accompanied by certain highly undesirable occurrences. It is the cathode that is to be applied to the head, the anode being affixed to some more or less distant part. By a special modification of the procedure an epileptoid convulsion may be produced, and by raising the voltage sufficiently death may be caused.

In only one instance apparently has this electrical anæsthetization been practised on the human subject, and then it was not carried to the extent of producing complete insensibility. The experiment was performed on Professor Leduc, the physicist of the Nantes School of Medicine, in 1902, and the current employed was

what is known as the Leduc current. M. Leduc describes his first sensations as unpleasant but not unbearable; then he gradually lapsed into a condition somewhat akin to nightmare—he was unable to make a movement or to communicate in any way with his friends who were conducting the experiment. That he regrets for he remembers wishing to urge them to carry the insensibility further.

The only practical application of electric anæsthetization suggested by Dr. Robinovitch is that of employing it to do away with the imaginable instant or more of pain felt by criminals who are executed with the electric current. She remarks also that the high voltage generally used in executions is unnecessary, and that it is quite practicable to avoid burning of the parts to which the electrodes are applied. These humane considerations will probably appeal to those who are charged with the duty of doing murderers to death by means of electricity.

THE SERUM TREATMENT OF DYSENTERY.

When we are confronted with an outbreak of a dysenteric character, especially in a locality in which such outbreaks show a tendency to recur annually at the same time of the year, the sanitary measures required by the emergency are sufficiently well understood, and are generally carried out with more or less energy and efficiency by the local health authorities. Patients are isolated, the drinking water is filtered and boiled, the milk is sterilized, and all the discharges are destroyed or rendered innocuous.

When, however, we come to the medical treatment, we find it necessary to differentiate dysenteric cases, and arrange them in several groups; for, though they are all of infectious origin, they are not all of the same specific character. This is made evident by the fact that, whereas some are clearly due to the amœba, others are just as evidently caused by varieties of pathogenic bacteria. Shiga demonstrated a bacillus, now known by his name, as a cause of epidemic dysentery. Later researches, by Flexner, have further elucidated the ætiology by the discovery of a slightly different bacillus, which has received the name of Flexner's bacillus. Other forms may exist, for instance, that which has been called in Germany the bacillus of the dysentery of the insane. By some authorities the Flexner bacillus is regarded as merely a variety of Shiga's bacillus, while others maintain that it differs from the latter in important respects, and notably in its reaction to test cultures. Kraus and Doerr have recently made an experimental study of the entire question of this duality of epidemic dysentery, and have succeeded in preparing a specific antitoxine for the form, which is produced by the Shiga bacillus.

According to Valerian Rosculet (*Wiener klinische Wochenschrift*, August 30th), the pathogenic duality of bacillary dysentery is an established fact. In Europe the prevalence of isolated epidemics due to the Shiga bacillus, and of others due to the Flexner bacillus is generally acknowledged by clinical authorities. In Roumania, where epidemic dysentery prevails every year to an alarming extent, and where the mortality ranges in the lighter forms from nine to twelve per cent. and in the severer epidemics goes as high as thirty-five per cent., Rosculet has not been able to find the Flexner bacillus, but at the same time he does not deny the possibility of its occurrence exceptionally in that country. Amœbic dysentery, however, has been known to exist there for a long time, as elsewhere in Europe.

The practical point in therapeutics consists in the fact that the epidemic dysentery of the Shiga-Kruse type has been found by a number of clinicians to be very amenable to treatment with dysenteric antitoxic serum. The foundation of this treatment in Europe was laid by Rosenthal, Kraus, and Doerr, following out the method of Shiga in preparing the prophylactic serum from the horse in the usual way. By its use in Japan Shiga had succeeded in reducing the mortality in three hundred cases treated from twenty-two per cent. in cases treated by the ordinary remedies to seven per cent. Kruse, in his report confirmatory of Shiga's views, stated that with a serum prepared in the same way he had reduced the death rate from eleven to five per cent. More recently Korentschewsky, in Manchuria, also has used the antidysenteric serum with excellent results.

The antitoxic treatment of epidemic dysentery has been successful, too, in the hands of Rosculet, who directs attention to the important fact that, although effective in the Shiga-Kruse form, it is without avail in the Flexner variety. This may explain the want of success in the hands of some observers. He communicates his method of diagnosis and clinical recognition of the Shiga-Kruse bacillus by the hanging drop agglutination test, which is positive in the former (in a dilution of serum of one to thirty), but is negative with all other forms of bacteria.

The usefulness of the antidysenteric serum as a prophylactic is also declared by Rosculet. He inoculated eighteen individuals living in a house in which there were patients already stricken with dysentery. To each he gave one injection of five cubic centimetres of dysenteric antitoxic

serum obtained from Vienna. He also, for comparison, observed eighteen other persons who were kept under similar conditions. Of the first eighteen, not one was attacked, but of the other eighteen, fourteen subsequently became victims of typical dysentery. While these numbers are declared to be too small to warrant a definite conclusion, it must be admitted that they are at least suggestive of a true preventive action of the antidysenteric serum.

THE HARVARD MEDICAL SCHOOL.

The splendid new buildings of the Harvard Medical School have now been formally opened. They were described and pictured in our issue for May 19th. It is probably true that, so far as material equipment is concerned, no medical school in the world is better off than Harvard. The best school, of course, is that one in whose teaching corps the best men are to be found. Harvard need not shrink from this criterion. The new equipment will undoubtedly prove a fresh incentive to her faculty to play their full part in contributing to the progress of medicine as well as to do their best by their own students.

OXYGENATED DRINKS.

According to *La Nature*, a French scientific journal, one of the most interesting recent advances in applied chemistry is the series of oxygenated liquids that is now being put on the market in Paris. These consist of the ordinary waters and flavored drinks that are usually sold carbonated, that is, containing a quantity of carbonic acid gas under pressure, only that the carbonic acid is replaced by pure oxygen. This gives a certain stimulating quality to the liquids which is even greater than that of the corresponding carbonated fluids, and they are said to be free from certain objectionable features that have made the carbonated drinks unsuitable for many persons. The oxygen seems to be absorbed better than the carbonic acid, so that the uncomfortable feeling of distention after the consumption of these fluids passes away sooner. The oxygenated liquids are, besides, not only locally stimulants, as is the case with carbonated waters of various kinds, but also constitutionally, and their use as a tonic of mild degree is recommended. They do not disturb the condition of the system with regard to its acidity as carbonated waters sometimes do, and in general they may be depended on as brisk, grateful fluids, always pleasant and tonic. It would seem as though some experience with them here in America would be worth having, and, as it is a comparatively simple matter to have oxygen substituted for carbonic acid in the making of these fluids, experiments could rather easily be made.

"HERPETIC FEVER."

Before a Paris medical society (*Journal de médecine*, September 2nd) M. Lutaud recently read a communication in which he reported two cases of miscarriage followed by infection and fever. The patients were treated by curetting and antiseptic douches and rapidly recovered. In about a week or ten days, however, pyrexia appeared again without discoverable cause, until, on the second day of the fever, an eruption of herpes appeared on the lips and on the vulva, and subsequently all the symptoms of fever rapidly subsided. He called attention, especially to the possibility of the occurrence of this accident after abortion or curetting, the pyrexia not being due to the development of another focus of infection in the pelvic organs, but to the onset of "herpetic fever."

Lutaud concludes with this piece of advice: "Every time that a practitioner observes a fresh rise in temperature in a woman who has been locally infected, and in whom there is nothing in the pelvic organs to explain this hyperthermia, he should consider the possibility of an eruption of herpes, either on the vulva or on the surface of the buccal mucosa."

Obituary.

GEORGE ATHERTON SPALDING, M. D.,

OF NEW YORK.

Dr. Spalding died suddenly, in the height of apparent physical vigor and after having made his daily calls on the sick, at the age of fifty-six years. He was a native of Kentucky, to which State his progenitors migrated from New Hampshire. His reversion to the East was marked by his resort to Phillips Andover Academy and Yale College for his academic education, by his professional training in the College of Physicians and Surgeons and St. Luke's Hospital, New York, and by his making his summer residence in New Hampshire. Soon after his graduation in medicine, in 1875, he was appointed on the house staff of St. Luke's, and some years subsequently he was made a member of the attending staff of that institution, to which he remained attached up to the time of his death. Dr. Spalding was one of the pioneers of the Harlem district, having established himself in practice there when there were but few residents save "squatters." His foresight was amply confirmed by the building up of the region and by the growth of his practice. He was a typical family practitioner, beloved by his patients and highly esteemed by his professional brethren.

News Items.

NEW YORK CITY AND STATE.

The Geneva (N. Y.) Medical Society.—At a meeting held on Thursday, October 4th, Dr. T. D. Rupert read a paper on Tuberculosis.

Personal.—On September 26th, the honorary degree of LL.D. was conferred by Niagara University on Dr. Lawrence G. Hanley, a well known physician of Buffalo.

The Glens Falls (N. Y.) Medical and Surgical Society.—At a meeting held on Thursday, October 4th, Dr. Alexander McKee read a paper on Constipation, which was discussed by Dr. V. D. Selleck and Dr. T. H. Cunningham.

The Sanitary Officers of the State of New York will hold their sixth annual conference at Syracuse, on Wednesday, Thursday, and Friday, October 24, 25, and 26, 1906. The programme as published indicates that the conference will be interesting and instructive.

Changes of Address.—Dr. John A. Bodine, to 151 West Seventy-second Street, New York; Dr. B. Friedman, to 321 East Fourth Street, New York; Dr. Chester F. S. Whitney, to 256 West Ninety-seventh Street, New York; Dr. Leon Bandler, to 230 West One Hundred and First Street.

The Elmira (N. Y.) Academy of Medicine.—The following programme was arranged for a meeting held on Wednesday, October 3rd: Papers by Dr. R. R. Chilson, Elmira, title not given; Dr. Henry Flood, Elmira, Report of a Case; Dr. R. S. Harnden, Waverly, Eclampsia; Dr. M. R. Pritchard, Westfield, Pa., title not given.

The Syracuse Academy of Medicine.—The following programme was prepared for a meeting of this academy held on Tuesday, October 2nd: Venereal Diseases: Proposed Preventative Measures, by Dr. R. C. McLennan; Pure Air and Ventilation, by Dr. F. B. Todd; The Treatment of Burns, by Dr. E. S. Van Duyn.

The New York Skin and Cancer Hospital.—The governors of the New York Skin and Cancer Hospital announce that Dr. L. Duncan Bulkley will give an eighth series of clinical lectures on diseases of the skin in the out patient hall of the hospital, on Wednesday afternoons, commencing November 7, 1906 at 4.15 o'clock. The course will be free to the medical profession.

The Medical Society of the Borough of the Bronx.—The following papers will be read at a meeting to be held on Wednesday evening, October 10th: Elevation of the Temperature in Infants and Young Children, by Dr. Charles Gilmore Kerley; Malignant Obstruction of the Sigmoid Flexure and Descending Colon, by Dr. Charles N. Dowd.

The Buffalo Academy of Medicine.—The following programme has been arranged for a meeting of the *Section in Medicine*, to be held on Tuesday, October 9th: When and Where Shall We Send Patients Away from Home? by Dr. John H. Pryor; An Important Factor in the Causation and Treatment of Many So Called Functional Disorders, by Dr. Carl G. Leo-Wolf, of Niagara Falls.

At a meeting of the *Section in Pathology*, to be held on Tuesday, October 16th, Dr. Alfred C. Croftan, of Chicago, is to read a paper entitled Newer Conception of the Nature and Treatment of Diabetes.

American Society of Sanitary and Moral Prophylaxis.—A meeting of this society will be held at the New York Academy of Medicine on Thursday evening, October 11th. General subject for discussion, Venereal Infection in Children: Gonorrhœal Ophthalmia, by Dr. Charles H. May; Vulvovaginitis, by Dr. J. Riddle Goffe; Arthritis, by Dr. Virgil P. Gibney; Syphilitic Infection in Children, by Dr. Ludwig Weiss; Criminal Aspects of Venereal Infection in Children, by Dr. W. Travis Gibb; general discussion, by Dr. L. Emmett Holt, Dr. William M. Polk, Dr. William P. Northrup, and others.

Civil Service Examinations for the State and County Service.—The State Civil Service Commission will hold examinations on October 12, 1906, for typewriter copyist (male) in the Kings County offices; and on October 13, 1906, for assistant bacteriologist, $1,500, and assistant sanitary chemist $720, in the State Department of Health; pupil nurse, Erie County Hospital; trained nurse, Westchester County Hospital. The last day for filing applications for these positions is October 8th. Full information and application forms for any of these examinations may be obtained by addressing Charles S. Fowler, chief examiner of the commission, at Albany.

Admitting Physicians at Bellevue Hospital.—We are informed that the State civil service commission has approved of the increase to the sum of $1,000 a year of the salaries of the four admitting physicians at Bellevue Hospital, whom it is now intended to appoint. These physicians are to replace the members of the house staff who have heretofore attended to this work as a part of their duties. The eligibility for appointment is limited to persons who have served for at least two years in Bellevue Hospital. They are to serve for six hours a day, each one, under such rules and regulations as may be prescribed by the board of trustees. Applications may be sent to Mr. James K. Paulding, secretary of the board of trustees.

Moving Pictures as an Adjunct to Medical Teaching.—At a meeting of *The Brooklyn Society for Neurology*, held on September 27th, Dr. Walter G. Chase, of Boston, delivered an illustrated lecture on Insanity and Nervous Diseases, to an audience of about 250 physicians. He said that the moving picture as an adjunct to the teaching of medical subjects and surgical procedure was first introduced by Dr. Doyen, of Paris, who some years ago commenced illustrating his surgical lectures with the aid of the biographic picture. These lectures of Doyen were an immediate success and since that time this form of instruction has been adopted in many of the European colleges, to aid in the instruction in other departments. Dr. Chase explained how his pictures were made, and told of the many difficulties he had encountered in obtaining perfect detail with his moving subjects. For weeks he went daily out into the fields at Sonyea with a band of epileptics, stripped nude, but protected from the sun by blankets, and there waited for convulsions to occur. The result was that hundreds of seizures were photographed. He spoke of the great value to the medical student of this method of instruction, especially in the absence of clinical material; of the possibility of one college exchanging with another college its films of subjects obtainable only under local conditions. Thus the rarer objective symptoms from all over the world could be at the command of a local instructor. Dr. Chase exhibited a pocket biograph booklet which showed a perfect moving picture of a convulsion, together with some enlargements of his small film pictures. Among the 2,000 feet of film Dr. Chase showed his audience were the following subjects: Thirty complete epileptic convulsions; the gaits of tabes, spastic paraplegia, hemiplegia, automatic acting idiots, and imbeciles; Jacksonian epilepsy, Huntington's chorea; various tics, the tremor and gait of paralysis agitans; ataxias and clonus reflexes, etc.

The New York Academy of Medicine.—The following programme was arranged for a meeting held on Thursday, October 4th, under the auspices of the *Section in Orthopædic Surgery:* Presentation of Instruments Illustrating the Historical Development of Laryngological Technique, by Dr. D. Bryson Delavan; Presentation of Portraits of Sir Thomas Watson and Sir Andrew Clark; Papers: (a) Nontuberculous Joint Diseases, with especial reference to the so called Rheumatic Affections, by Dr. Robert W. Lovett, Boston, Mass. (by invitation); (b) Bone Syphilis, Hereditary and Acquired, by Dr. Robert W. Taylor (illustrated by lantern slides). General discusion on gonococcic arthritis, neurotic and hysterical joints, rheumatoid arthritis, and syphilitic joints, by Dr. John Rogers, Jr., Dr. Eugene Fuller, Dr. Joseph Collins, Dr. Henry Ling Taylor, Dr. Royal Whitman, and others.

At a meeting of the *Section in Surgery*, held on Friday, October 5th, the following programme was presented: Papers: (a) Brain and Meningeal Surgery made Safer by a Bloodless Method, with Recent Illustrative Cases, by Dr. R. H. M. Dawbarn; (b) Remarks on Osteoplastic Resection of the Costal Arch, in order to reach the Vault of the Diaphragm, by Dr. Willy Meyer; (c) Tumors of the Larynx, with Reports of Two Laryngectomies, One Hemilaryngectomy, and Three Thyreotomies, by Dr. John F. Erdmann; Presentation of Apparatus: Gas Ether Inhaler, by Dr. Victor C. Pedersen.

The *Section in Otology* will hold a meeting on Thursday, October 11th, with the following order: Presentation of Cases. Demonstration of an Improved Motor-Drill for Mastoid Surgery, by Dr. W. Sohier Bryant; A New Gas Ether Inhaler, by Dr. V. C. Pedersen; Demonstration of the Movements of the Eustachian Tube, by Dr. W. Sohier

Bryant; Report of a Case of Purulent Meningitis following a Radical Mastoid Operation. Recovery after operative intervention, by Dr. Held and Dr. Kopetsky.

The *Section in Pædiatrics* will hold a meeting on Thursday, October 11th, with the following programme: Demonstration of a New Gas Ether Inhaler, by Dr. Victor C. Pedersen; Report of Case of Paralysis of the Adducens Nerve following Influenza, by Dr. Anna S. Wilner; Report of a Splenectomy for Splenomegaly in a Child of eight years, by Dr. David Bovaird, Jr.; Report of a Case of Septic Endocarditis. Recovery, by Dr. W. C. Gardner.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending September 29, 1906:

	September 29.		September 22.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	114	19	134	29
Smallpox	1	..	..	..
Varicella	12	..	9	..
Measles	61	5	55	2
Scarlet fever	41	3	59	2
Whooping cough	35	8	30	8
Diphtheria	137	12	154	16
Tuberculosis pulmonalis	367	151	354	154
Cerebrospinal meningitis	15	12	5	7
Totals	783	210	800	218

Society Meetings for the Coming Week:

MONDAY, *October 8th.*—Medical Association of the Greater City of New York; Society of Medical Jurisprudence; New York Academy of Sciences (Section in Chemistry and Technology); New York Medicohistorical Society (private); New York Ophthalmological Society (private); Society of Alumni of St. Mary's Hospital, Brooklyn; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private); Corning, N. Y., Medical Association; Waterbury, Conn., Medical Association.

TUESDAY, *October 9th.*—New York Medical Union (private); New York Obstetrical Society (private) (annual meeting); Buffalo Academy of Medicine (Section in Medicine); Kings County, N. Y., Medical Association; Rome, N. Y., Medical Society; Medical Society of the County of Rensselaer, N. Y.; Newark, N. J., Medical Association (private); Trenton, N. J., Medical Association; Northwestern Medical Society of Philadelphia; Practitioners' Club, Richmond, Ky.; Richmond, Va., Academy of Medicine and Surgery; Practitioners' Club of Jersey City, N. J.; Blackwell Medical Society, Detroit, Mich.

WEDNESDAY, *October 10th.*—Medical Society of the Borough of the Bronx, New York; New York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Society of the Alumni of the City (Charity) Hospital, New York; Society for Medical Progress, New York; Lenox Medical and Surgical Society, New York (private); Brooklyn Medical and Pharmaceutical Association; Medical Society of the County of Allegheny, N. Y.; Pittsfield, Mass., Medical Association (private); Philadelphia County Medical Society.

THURSDAY, *October 11th.*—New York Academy of Medicine (Sections in Pædiatrics and Otology); Society of Medical Jurisprudence and State Medicine, New York; Brooklyn Pathological Society; Medical Society of the County of Cayuga, N. Y.; South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia; Church Hill Medical Society of Richmond, Va.; Blackwell Medical Society of Rochester, N. Y.; Jenkins Medical Association, Yonkers, N. Y.; Practitioners' Society of Eastern Monmouth, Camden, N. J.

FRIDAY, *October 12th.*—New York Academy of Medicine (Section in Neurology); Eastern Medical Society of the City of New York; Society of Alumni of St. Luke's Hospital, New York; Yorkville Medical Association, New York (private); Dermatological and Genitourinary Society, Brooklyn (private); German Medical Society of Brooklyn; Medical Society of the Town of Saugerties, N. Y. (anniversary); Saratoga Springs, N. Y., Medical Society.

SATURDAY, *October 13th.*—Obstetrical Society of Boston (private).

PHILADELPHIA AND THE MIDDLE STATES.

Memorial to Dr. Carl Vischer.—A large tablet has been erected in the hallway of St. Luke's Hospital in memory of Dr. Carl Vischer, who died a short time ago.

Medical Colleges Open.—The Jefferson, Medicochirurgical, Hahnemann, and Women's Medical Colleges opened for the winter during the past week. The Medical Department of the University of Pennsylvania will open during the coming week.

The Health of Reading, Pa.—According to the weekly report of the board of health for the week ending September 22nd, there were twenty cases of communicable diseases reported as follows: Typhoid fever, thirteen cases; scarlet fever, two cases; diphtheria, one case; tuberculosis, three cases; mumps, one case. During the year there have been 141 cases of typhoid fever reported.

The Medical Society of Franklin County, Pa.—The regular quarterly meeting of this society will be held at Chambersburg, on Tuesday, October 16th. The programme prepared for this meeting includes the following papers: Catarrhal Hepatitis, by Dr. P. D. Hoover, of Waynesboro; Summer Grippe, by Dr. E. W. Palmer, of Greencastle; Simple Affections of the Rectum and Anus, by Dr. John C. Greenewalt, of Chambersburg.

The Physicians' Club of Hanover, Pa., an association recently formed, has elected the following officers: President, Dr. J. H. Bittinger; vice-president, Dr. J. D. Keller; secretary and treasurer, Dr. G. H. Jordy. The club holds monthly meetings, and all the physicians in Hanover and vicinity are members. Dr. Bittinger is a member of the York County Medical Society and is local surgeon for the Western Maryland and Northern Central Railroads.

Scientific Society Meetings in Philadelphia for the Week Ending October 13, 1906.—Monday, October 8th, Section on General Medicine, College of Physicians; Wills Hospital Ophthalmic Society. Tuesday, October 9th, Kensington Branch, Philadelphia County Medical Society; Philadelphia Pædiatric Society; Botanical Section, Academy of Natural Sciences. Wednesday, October 10th, Philadelphia County Medical Society. Thursday, October 11th, Section Meeting, Franklin Institute. Friday, October 12th, Northern Medical Association.

College of Physicians of Philadelphia.—A meeting of the *Section in General Medicine* will be held on Monday evening, October 8th. The following programme has been arranged for the meeting: Dr. Henry D. Jump will report A Case of Typhoid Fever with Unusual Enlargement of the Spleen; Dr. J. Dutton Steele will read a paper entitled The Muscle Nucleus Test in Pancreatic Disease; Dr. Joseph Sailer and Dr. Clifford B. Farr will read a paper entitled Methods of Altering the Secretion of Pepsin; Dr. Frederick Fraley (by invitation) will read a paper entitled A Study of Five Hundred Cases of Pleurisy Occurring at the Pennsylvania Hospital; Dr. Herman B. Allyn will read a paper entitled The Treatment of Acute Gastritis; Dr. Judson Daland will read a paper entitled Some Clinical Aspects of Indicanuria.

The Health of Philadelphia.—During the week ending September 22nd, the following cases of transmissible diseases were reported to the bureau of health:

	Cases.	Deaths.
Typhoid fever	112	13
Scarlet fever	18	0
Chickenpox	7	0
Diphtheria	60	7
Cerebrospinal meningitis	4	1
Measles	9	0
Whooping cough	46	8
Tuberculosis of the lungs	93	44
Pneumonia	26	26
Erysipelas	4	0
Puerperal fever	1	2
Mumps	2	0
Anthrax	1	0
Cancer	17	14

The following deaths were also reported to the bureau of health from transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 14; dysentery, 1; diarrhœa and enteritis, under two years of age, 40. The infant mortality was 127; under one year of age, 109; between one and two years of age, 18. The whole number of deaths was 422, corresponding to an annual death rate in a thousand of 14.94, in an estimated population of 1,469 126. There were 35 stillbirths, 22 males and 13 females. A relatively high humidity obtained during the week.

BOSTON AND NEW ENGLAND.

The City Physician of Somerville, Mass.—Dr. C. Clarke Towle, who was assistant to the late City Physician, Dr. A. B. Dearborn, was, on September 26th, appointed to succeed Dr. Dearborn. In order to do this the mayor was obliged to withdraw the recent nomination of Dr. Frank L. Morse for the place. When the appointment was made it was planned to consolidate the duties of the office of bacteriologist, held by Dr. Morse, with those of city physician, but this will not now be done.

A New City Hospital for Providence, R. I.—The special committee on the proposed City Hospital held a meeting in the office of the mayor on September 25th, and voted to advertise for competitive designs for a building, which must be erected within the appropriation, the competition to be limited to architects residing and doing business in that city. Since the purchase of a site for a hospital the committee had taken no action looking to the erection of a hospital. The appropriation which was originally placed at the disposal of the committee amounted to $175,000. The site was purchased for about $30,000, and to bring the total cost within the appropriation the cost of the hospital cannot exceed $145,000.

The Mortality of Boston.—There were no deaths from diphtheria, scarlet fever, or measles in Boston during the week ending September 29th, which was extremely unusual. The total number of deaths, according to the reports filed with the board of health, was 187, which is exactly the same number as in the coresponding week last year, and making the death rate for the week 16.10. The number of cases and deaths from infectious diseases was as follows: Diphtheria, 36 cases and no deaths; scarlatina, 12 cases, no deaths; typhoid fever, 63 cases, 4 deaths; measles, 1 case, no death; tuberculosis, 33 cases, 24 deaths. The deaths from pneumonia were 16, whooping cough 1, heart disease 16, bronchitis 5, and marasmus 7. There were 9 deaths from violent causes.

BALTIMORE AND THE SOUTH.

The Humphreys County (Tenn.) Medical Society.—At the quarterly meeting of this society held at Waverly on September 24th, Dr. J. J. Teas was elected secretary-treasurer, vice Dr. Claude C. Sullivan resigned. The society passed a vote of thanks to Dr. Sullivan for his faithfulness and efficiency. Dr. Sullivan is about to remove to Nashville to engage in practice in that city.

The Allegany County (Md.) Medical Society.—The programme for the annual meeting of this society held at Cumberland on Tuesday, October 2nd, included the following papers: Personal Opinions on the Treatment of Typhoid, with Reference to Hæmorrhage and Perforation, by Dr. L. A. Boucher, of Barton; Report of a Case of Ruptured Kidney in which Three Fifths of the Kidney Substance was Removed, by Dr. A. Leo Franklin, of Cumberland; Malformations of the Brain and Meninges, by Dr. F. P. O Neal, of Midland. There was also to be an election of officers.

The Mortality of Baltimore.—The report of the Health Department for the week ending September 29th, showed a total of 180 deaths, as compared with 197 the corresponding week of last year, 182 in 1904, and 171 in 1903. The principal causes of death were:

Typhoid fever	8	Pneumonia	5
Scarlet fever	3	Diarrhœa in children under five years of age	16
Diphtheria	2	Bright's disease	16
Consumption	16	Congenital debility	15
Cancer	11	Old age	4
Organic heart disease	8	Accidents, etc	8
Bronchitis	3		

The annual death rate in a thousand of population was: Whole, 15.75; white, 14.71; colored, 21.27. The births reported were: Total, 191; white, 175; colored, 16; males, 109; females, 82.

CHICAGO AND THE WEST.

The Wayne County (Mich.) Medical Society.—The programme prepared for a meeting of the *Surgical Section* of this society held on Monday, September 24th, consisted of a discussion on General Anæsthetics, and the following papers were to be read: Chloroform and Ether, by Dr. Carl S. Oakman; Somnoform, by Dr. T. J. Collins; Nitrous Oxide, by Dr. Wadsworth Warren; Ethylchloride, by Dr. William E. Blodgett. The discussion was opened by Dr. F. B. Walker, Dr. Grace M. Clarke, and others.

GENERAL.

Sanitation in the United States Army.—According to the *Army and Navy Journal*, for September 29th, the Surgeon General of the Army has received most favorable reports regarding the sanitary conditions which existed last summer at the various camps of instruction. There was practically no disease at any of the camps, which tends to show that the regular soldier may live without epidemic disease when his health is under the supervision of careful medical officers and where sanitary laws are rigidly observed. Major Charles F. Mason, Medical Department, has made a verbal report on the condition which existed at the camp of instruction at Chickamauga Park, Ga. There was little sickness there. Major Mason made a most glowing report on the tests of the McCall crematory latrine. The inventor of this crematory, Dr. McCall, was formerly a contract surgeon in the army. It is believed he has solved the problem of a sanitary method of disposing of all waste in military camps.

The American Hospital Association.—The annual convention of the *Association of Hospital Superintendents* at Buffalo, on September 18th, 19th, 20th, and 21st, was only moderately successful in point of attendance. Out of a total membership of over two hundred, a little less than one hundred members were present. The programme called for a number of papers by active hospital workers, most of them dealing with phases of hospital organization. There was a regrettable lack of variety in the subjects chosen for presentation—a sameness and incompleteness which so impressed itself upon the members present, however, as to strengthen the movement for the reorganization and expansion of the association, the first stirrings of which were noticed in Boston a year ago. Before the close of the Buffalo convention a number of measures were adopted which are worthy of record, since they represent clear gains in efficiency, besides giving promise of a future growth, which in the course of a few years may win for this association a permanent place among the really helpful social forces. The measures referred to may be summed up briefly as follows: (a) The name, *American Hospital Association*, was adopted in place of the former title, *The Association of Hospital Superintendents*. The change of name was successfully championed by those who believe in the expansion of the aims and work of the association and who seek as a means to this expansion, the support and cooperation not only of the chief executive officers of hospitals, but of all others concerned in hospital administration and capable of furthering hospital welfare. Consistently with the change of name, the class of associate members was established, limited at present to assistant superintendents of hospitals, but capable of further expansion. (b) It was decided to appoint a membership committee of two for each State and province in the United States and Canada. The numerical strength of the association is found to-day chiefly east of the Alleghenies. By fixing upon Chicago as the place of the next annual gathering, impetus has been given to the acquisition of a larger body of western members. (c) A special committee appointed to consider the question of the development of the work of the association, decided upon the creation of a permanent committee on hospital progress, subdivided into four units, for the purpose of bringing before the association at its regular annual conventions a condensed but comprehensive report of the developments of the year in the departments of (1) hospital construction; (2) hospital efficiency, hospital finances, and the economics of administration; (3) medical organization and medical education, and (4) the training of nurses. This committee for the year 1906-7 consists of Dr. G. H. M. Rowe, Boston City Hospital; Dr. S. S. Goldwater, Mt. Sinai Hospital; Dr. H. B. Howard, Massachusetts General Hospital; and Miss Mary L. Keith, Rochester City Hospital. The reports of the committee on hospital progress will be embodied in the printed *Transactions of the American Hospital Association*, which thus promises at last to inaugurate, in fact if not in name, the *American Hospital Year Book*, for which students of hospital affairs and friends of hospitals in the United States have longed. The committee on expansion has been directed to continue during the year its deliberations on the development of the work of the association. Among the officers elected for the ensuing year are Dr. Renwick R. Ross, Buffalo City Hospital, president; George Bailey, Jr., Jefferson Medical College Hospital, secretary.

Pith of Current Literature.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

September 27, 1906.

1. The New Foundation of the Medical School, By J. COLLINS WARREN.
2. The Faculty of Medicine, By WILLIAM L. RICHARDSON.
3. The Laboratories, By THOMAS DWIGHT.
4. The Clinics, By FREDERICK C. SHATTUCK.
5. Acceptance of the Buildings, By CHARLES W. ELIOT.
6. Diseases of the Bile Passages, Including the Liver, Gallbladder, and Pancreas, By M. H. RICHARDSON.
7. Diseases of the Biliary Passages, Including the Liver, the Gallbladder, and the Pancreas, By ELLRIDGE G. CUTLER.
8. An Experimental Study on the Bactericidal Power of Various Silver Preparations, By GEORGE S. DERBY.

6, 7. Diseases of the Bile Passages, Including the Liver, Gallbladder, and Pancreas.—Richardson remarks that, taking into account all the cases of biliary disease directly and indirectly dependent upon gallstones, including those in the pancreas and liver, pylorus, and duodenum, including all cases in which a gallbladder origin has been diagnosticated, whether operated upon or not, and moreover, considering at least one thousand five hundred cases, certain facts become conspicuous: 1. The grave dangers of biliary diseases depend, directly or indirectly, upon gallstones. 2. The causes which lead to symptoms in cholelithiasis are always mechanical. 3. Medical treatment, once gallstones begin to offend, is necessarily palliative, for it tends to show that in advanced and serious mechanical lesions treatment may diminish somewhat the severity of the symptoms—for example, a course at Carlsbad. 4. Medical treatment has no effect whatever upon the stones themselves, either as preventive or as absorbent. Surgical treatment, when applied with stones are confined to the gallbladder, before impaction of any kind have taken place, is so safe that there is practically no mortality. When as the result of prolonged mechanical irritations and of infections, changes are extensive, and especially when these changes are in and about the hepatic and common ducts and in the pancreas, operations are more difficult, the dissections are deeper and, in more hazardous relations, the patients are debilitated by long continued symptoms. When patients are jaundiced, the dangers of operation are especially great and the mortality is large. The course of gallstones treated medically for symptoms of irritations and infections, more or less severe, is toward a fatal end, through great suffering. From these propositions the author draws the conclusion that gallstones should be removed in their simple and uncomplicated stages. Of great importance is the early diagnosis of gallstones, but, to quote the author, it is much easier to ask what the symptoms of the earliest stages of gallstones are than to tell what they are. The two most important considerations are: The pain and the irregular recurrence of pain, in a similar or in a gradually changing form. The diagnosis in the early stages of most of the diseases which gallstones simulate lies in a correct interpretation of pain in some form or other. The author proceeds to give the differential diagnosis, so between gallstones and stomach trouble, cancer of the alimentary tract, ulcer, pancreatic lesions, and certain lesions of the liver. If gallstones are diagnosticated operations in the absence of contraindications are always advisable. These contraindications are the existence of serious lesions of other important organs, cachexia, anæmia, hæmocauses, and perhaps the habit of tardy convalescence from trivial disease—of falling an easy prey to evil complications. Furthermore, gallstones should be removed which have caused no symptoms, but have been demonstrated at other operations, whether they offend or not.—Cutler groups the most important diseases of the biliary passages under four heads: 1. Calculi or gallstones in the gallbladder and gallduct and their effects. 2. Inflammation of the gallbladder and gallducts and their effects. 3. New growths of the gallbladder and gallducts and their effects. 4. The various combinations of these three groups. The chief symptoms produced are pain, local tenderness, chills and fever, vomiting, sweating, alteration of the rate of the pulse, jaundice, tumor of the gallbladder, changes in the urine, blood, and stools. These symptoms are taken up singly and are fully and distinctly described. The author then gives a plain and comprehensive differential diagnosis between disease of the biliary passages from gastric ulcer, appendicitis, renal colic, pancreatitis, angina pectoris, portal phlebitis, subphrenic abscess, and gastric crises of tabes. The diagnosis having been made, the indications from a medical point of view are to alleviate symptoms, to promote a free passage of bile to the intestine, and to prevent stagnation of bile: Morphine, atropine, nitroglycerin give relief, hot bath and hot fomentations to the hepatic region, rest in bed and local applications, soda salts, as the sulphate or phosphate, sodium oleate, are recommended. But sooner or later the patient is sure to come into the hands of the surgeon.

8. An Experimental Study of the Bactericidal Power of Silver Preparations.—Derby reports his experiments with silver nitrate and some of the newer silver preparations in reference to their bactericidal power. The preparations besides silver nitrate were: Argyrol, protargol, collargol, albargin, ichthargan, argentamin, largin, argonin. His conclusions are that the silver preparations tested, with the exception of argyrol and collargol, are efficient bactericides in the laboratory. Their bactericidal action and that of Lugol's solution and of corrosive sublimate is markedly retarded by the addition of a serum, such as hydrocele fluid or bovine blood serum. It seems probable that on this fact largely depends the comparative inefficiency of antiseptics.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

September 29, 1906.

1. Proprietary Medicines, By A. JACOBI.
2. Proprietary Medicines and Their Abuses, By GEORGE DOCK.
3. The Physician's Responsibility for the Nostrum Evil, By RICHARD C. CABOT.
4. Cirrhotic Changes in the Liver Following a Single Injury, By W. G. MACCALLUM.
5. A Plea for More Radical Operations in Cancer of the Lips and Tongue, By J. N. EISENDRATH.
6. The Radical Cure of Aneurysm. Present Status of Intrasaccular Suture, or Endoaneurysmorrhaphy, By RUDOLPH MATAS.
7. The Value of X Rays in Ocular Therapeutics, By G. ORAM RING.
8. The Economical Advisability of Inaugurating a National Department of Health, By J. PEASE NORTON.
9. Hypersusceptibility, By M. J. ROSENAU and JOHN F. ANDERSON.
10. Determination of the Normal Temperature of the Closed Inguinal Fold of a Child, and Its Clinical Significance, By ALBERT H. PARKS.

1, 2, 3. Proprietary Medicines.—Jacobi reviews the history of quackery and its development in modern times. We are reminded that the era of scientific medicine commenced only a little more than half a century ago. We should have expected the darkness of quackery would disappear before the new light. But quackery has grown in geometric proportions until the accumulated ignorance of quacks and fakirs has become a power in every land. Up to October 12, 1905, there were United States patents for 321 disinfectants, 30 extracts, 48 hair dyes and tonics, 180 insecticides, 376 internal remedies, 56 plasters, 371 topical medicines,

78 veterinary medicines. There were 319 trademarks, for drugs and chemicals, 5,794 for medical compounds. But we, the physicians, says Jacobi, are responsible for a great deal of injury that is done to the people. We prescribe medicines, the compositions of which we do not know. We read medical journals which advertise nostrums, our medical schools neglect their duty by omitting to teach the art of medicine, to write prescriptions. He closes in saying: "If there is so much proprietary medicine prescribed, and so much quackery, clear your own skirts, professors and doctors. The quacks and manufacturers smile at our unctious words and unclean hands."—Dock defines proprietary medicines as substances which some one has an exclusive right to make or sell for medicinal purposes. The exclusive right may depend in America on secret methods of process and substance, or on a copyright on the substance. The chief objection is that no dependency can be placed on the constancy of action of such substances, and that no certain observations can be made on their action. The abuses of proprietary medicines, Dock continues, spring partly from exaggeration of legitimate commercial methods, partly from the credulity of the medical profession. The remedy for this part is wholly in ourselves, and we ought to do all we can to overcome this at least.—Cabot says that as physicians we are largely responsible for the sale of secret remedies. We help to create the demand; we feed it. But the patent medicine and nostrum evil will be seriously crippled when we do two things: Stop advertising secret remedies which may be poisonous or inert. Stop fooling our patients with placebos.

4. **Cirrhotic Changes in the Liver Following a Single Injury.**—MacCallum states that various poisonous materials circulating in the blood may cause the destruction of the cells of the liver, sometimes in very small foci, sometimes much more diffusely throughout the whole organ. When the injury is limited in extent it may destroy so little of the liver that no definite symptoms result, and the injured area is in time replaced by scar tissue. But if the injury is very extensive and involves at one time the greater part of the liver, symptoms at once arise, and such a condition which is commonly classed as acute yellow atrophy may quickly bring about the death of the patient. But there may occur a scarred condition of the liver perhaps intermediate between the ordinary cirrhosis and an extraordinary distortion, a condition in which some single attack of an infectious disease or some single intoxication has produced a single nonprogressive, though widespread, injury from which complete and permanent recovery has occurred.

5. **A Plea for More Radical Operations in Cancer of the Lips and Tongue.**—Eisendrath remarks that carcinomata of the lips, tongue, ear, etc., belong to the flat or squamous type. They spread almost exclusively either by continuity of tissue or along the lymphatic spaces and vessels to the lymph nodes which normally drain the region involved, and very rarely give rise to metastatic growth in the internal viscera or long bones. A thorough removal is therefore advocated, which will promise a better and permanent cure. The lymph nodes are described, which drain the lips, tongue, face, and ears; and a detailed history of the operation is given. The technics for less advanced cases consists in the removal of primary growth and the infected lymphatic nodes, while the hæmostasis is a much simpler problem in operations for extirpations of cancer of the lips and of the lymphatic nodes in the submaxillary region than in the case of an operation for cancer of the tongue. The mode of anæsthesia and posture are described. In advanced cases Crile's method should be adopted.

6. **The Radical Cure of Aneurysm.**—Matas refers to the introduction of his mode of operation, the endoaneurysmorrhaphy; that is, the closure of an aneurysmal orifice connecting the trunk of an artery with the aneurysmal sac by suturing the orifice from within the sac and the obliteration of the sac by suture. There are so far thirty-four American cases, which number may later on be increased to forty, when the details of the foreign cases will be better known. The Matas operation is described as follows: 1. Obliterative endoaneurysmorraphy (the fundamental procedure) essentially consists in opening the sac freely without disturbing it from its surroundings and closing all visible arterial orifices within the sac, by suture, thus securing complete hæmostasis and permanently stopping all further access of blood into the aneurysmal cavity. The sac is obliterated by approximating its walls with buried sutures and closing the wound, with or without drainage; or, in rigid cavities, by simply infolding the overlying skin flaps and lining the cavity with them, or by one of the several procedures or variations he has suggested. 2. Restorative endoaneurysmorrhaphy. By opening the sac freely and washing out the clot, the opening leading to the artery is exposed inside the aneurysm and is readily closed by a continued suture which penetrates through all the coats of the sac at the margin of the orifice of communication. By this procedure the blood supply of the sac is permanently arrested, the lumen of the parent artery remains patulous and the arterial stream supplying the limb or dependent territory is immediately restored through its normal channel. The sac is then obliterated by bringing its endothelial surfaces together with buried sutures, and the surface wound is closed in the usual manner. 3. Reconstructive endoaneurysmorrhaphy. In aneurysms of this type, especially those of traumatic origin, the continuity of the parent artery may be restored by making a new channel out of the sac walls, which can be brought together by suture over a guide (catheter or drainage tube) inserted into the proximal and distal openings of the aneurysm. Before tying the last sutures, the guide is removed and the channel is left behind, corresponding to the outline of the original artery. The sac is then obliterated by approximating its surfaces with buried catgut suture, as previously applied in the first and second procedures.

7. **The Value of X Rays in Ocular Therapeutics.**—Ring concludes that x ray therapy can usually be relied on to effect a cure. If unsuccessful then electrochemical sterilization may be utilized, or finally, excision with or without plastic operation. It has been proved of value in the more extensive orbital carcinomata, but it is conceded that the deeper the growth the less favorable will be the result. A sufficient number of cures of sarcoma of lids and orbit have been reported to warrant its exhaustive trial in all types of this disease. The x ray treatment usually exerts an anodyne influence on malignant disease of the eyelids and orbit, but are occasionally reported to cause exacerbations of pain. It has been of benefit in trachoma, and there is testimony as to its value in vernal and chronic conjunctivitis, scleritis, episcleritis, traumatic uveitis, conjunctival tuberculosis, corneal ulceration, gloma, and gummata. Further testimony must be accumulated before an authoritative statement is possible of its value in painful types of iridocylitis and glaucoma. It is important, says Ring, that a note of warning should be sounded regarding the possibility of unlooked for results of a serious character which are said by competent observers occasionally to follow x ray exposures. They would seem to indicate the great importance of referring the patients to none but experts in Röntgen therapy.

9. **Hypersusceptibility.**—Rosenau and Anderson say that it has long been known that the blood of certain animals is poisonous when transfused or injected into certain other species. But the blood serum of the horse apparently lacks such poisonous action. Even large quantities of the blood serum of the horse may be in-

jected into man, rabbits, guinea pigs, and many other animals without serious inconvenience, except occasionally a slight reaction at the site of inoculation. In exceptional instances sudden death has followed. The authors have found that while horse serum is usually a comparatively bland and harmless substance, a certain period must elapse before a second injection should be undertaken. Man reacts to the first injection of horse serum after a period of eight to thirteen days; guinea pigs show no reaction as a result of the first injection; but both react to the second injection, the reactions differ in man and the guinea pig, both in severity and in kind.

10. Temperature in the Inguinal Fold in Children.—Parks summarizes his experiments made on one hundred and seventy-five children, ranging between four months and five years in age as follows: The normal temperature of the closed inguinal fold of a child is 98.52° F. (37.5° C.). The variation of the inguinal temperature from the rectal temperature approximates one third of a degree of Fahrenheit or four tenths of a degree of Celsius, the average variation being 0.34° F. (0.18° C.), being so much below rectal temperature. But the usual variation is so small, that it can be practically disregarded for clinical purposes. The absence of many objectionable features of the rectal method and the ease and reliability of the groin method gives the latter several points of advantage over the rectal method, which would recommend the groin method in pædiatrics.

MEDICAL RECORD.

September 29, 1906.

1. Percussion of the Skull as a Means of Placing the Indication for the Performance of Lumbar Puncture; with Special Reference to Its Application in Cerebrospinal Meningitis of the Epidemic Type, By Henry Koplik.
2. The Problem of Localization in Relation to Head Injuries, By William W. Graves.
3. The Surgical Treatment of Trigeminal Neuralgia. A Study of the Causes of Recurrences After Operative Treatment, with Suggestions as to the Best Methods of Obviating Postoperative Recurrences, By Alexis V. Moschcowitz.
4. One Hundred and Three Cases of Epilepsy, By William L. Stowell.
5. A Plea for a More Thorough Course in Practical Pharmacy in Our Medical Schools, By M. Clayton Thrush.
6. Some Points on the Diagnosis and Treatment of the Pretuberculous State, By Charles F. Disen.
7. Examination of the Fæces of Twenty-five Starch Fed Infants, with a Few Clinical Observations, By Joseph H. Lopez.
8. Suppurating Omental Hernia: Report of a Case, By Forbes R. McCreery.

1. Percussion of the Skull as a Means of Placing the Indication for the Performance of Lumbar Puncture.—Koplik remarks that lumbar puncture as a diagnostic means of precision has become of great utility, not only in making a diagnosis of the presence or absence of meningitis, but of the various types of meningitis, especially of the seropurulent or tuberculous variety. As a method of diagnosis we apply lumbar puncture in those cases, in which clinically there are the symptoms of meningitis, but in which the symptoms are to a certain extent indefinite, and in which it is necessary to establish firmly the diagnosis of meningitis in a broad sense, or, being certain of the presence of meningitis, to fix its specific nature, whether tuberculous, meningococcic, or otherwise. As a therapeutical measure, lumbar puncture is applied in the various forms of hydrocephalus, acute and chronic, whether congenital or due to a preceding meningitis. It is applied in the various forms of meningitis, either to simply remove fluid as a mode of drainage, or to remove excessive fluid, which is causing pressure, and thus to relieve symptoms, if not to save life. Of questionable use as a therapeutical measure is the application of lumbar puncture in cases of tumor of the brain to relieve headache, in cases of encephalitis, or so called coma dyspepticum, or in pneumonia with cerebral symptoms. The mode of detecting acute hydrocephalus, whether caused by acute distention of the ventricles on the first day of a cerebrospinal meningitis, or during the slow, insidious onset of a tuberculous meningitis, is by percussion of the skull. McEwen, in his work on the pyogenic diseases of the brain and spinal cord, describes very accurately the elicitation of a differential cranial percussion note, in which he shows that in various conditions, such as cerebral tumors, the lateral ventricles are distended with serous fluid. Koplik considers percussion of the skull the only definite means we have to-day of determining whether there is an increase of fluid in the ventricles or the subarachnoid space causing pressure effects, and therefore demanding immediate relief. Besides, it is an useful mode of differentiating the cases of so called meningism or the symptom complex of cerebral symptoms from the severer types of meningitis.

2. The Problem of Localization in Relation to Head Injuries.—Graves says that the problem of localization of lesions due to head injuries does not differ essentially from that which arises in other conditions (tumor, abscess, apoplexy, etc.), excepting in those cases in which consciousness is immediately, or subsequently becomes so completely and permanently obtunded that the injured cannot be made to react to stimuli of any kind. In such cases localization can be accomplished only by relying upon the history since the injury and upon the oftentimes meagre objective evidence. Such a satisfactory solution of the problem of localization in traumatic lesions of the brain will depend upon: (1) A consideration of all symptoms and their order of development since the injury; (2) the degree of consciousness manifested by the patient and his reactions to stimuli; (3) a degree of involvement of areas of the brain of known function sufficient to cause focal symptoms; (4) the carefulness and thoroughness with which the examination is made.

3. The Surgical Treatment of Trigeminal Neuralgia.—Moschcowitz concludes his observation in saying that the treatment of trigeminal neuralgia may be summed up as follows: 1. Eliminate any possible ætiological factors, such as tumors, carious teeth, antral disease, malaria, syphilis, etc. 2. Determine accurately the nerve branch or branches involved. 3. The operation should be performed as near to the periphery as possible. 4. The operation should be performed early. This is important, because the earlier the case, the more chances there are that aperipheral operation will be of benefit. 5. Whatever the character of the operation may be, the dominant principle must be the prevention of regeneration of the affected nerve. More specifically, the operations may be classed under two headings, depending on the nerve or nerves affected: (a) Peripheral operations. If the supraorbital, infraorbital, mental, malar, or inferior dental branches, either singly or collectively are involved, the operation consists in division of the nerve, and plugging up of the foramen by a gold or silver button or wire. (b) Central operations. If the neuralgia involves the upper teeth and palate (superior maxillary division) or tongue (inferior maxillary division) existing either singly or together with the other nerves mentioned, the operation as has been outlined by Abbe must always be performed, substituting, however, celluloid or a gold button, instead of rubber tissue. 6. Finally, he believes that if these stated principles of treatment of trigeminal neuralgia are carried out, the operation of extirpation of the Gasserian ganglion will become entirely unnecessary

4. One Hundred and Three Cases of Epilepsy.—Stowell defines epilepsy as a disease, the patients of which suffering a temporary suspension of consciousness, recurring at intervals, usually accompanied by muscular spasms, and followed by stupor. It is estimated that there are 150,000 epileptics in the United States. The young are most affected. Of his one hundred and three cases, eight were five years of age, when seen, thirty-one between five and ten years, fifty-two between ten and twenty, and twelve over twenty years of age. It seems that children of unhealthy or neurotic parents are more liable to become epileptic than are those of perfect ancestry. Forty-nine per cent. of the children of epileptics become epileptic, palsies appear in twenty-two of his cases. As direct causes he enumerates, injury at birth, a sudden fright, masturbation (a questionable cause), phimosis, traumatic meningitis, faulty feeding, measles, scarlatina, pertussis, sunstroke. Many epileptics experience some sensation which is a warning that an attack will shortly take place. The treatment should consist in improvement of general nutrition and in quieting the nerve cells, in reference to the physiology of the cause. A vegetable diet is advocated with all that makes for good hygiene. Of drugs seventy-five are listed as good, the last one advocated is suprarenal extract. But no drugs stand the test of time like the bromides. If the patient is deprived of ordinary salt in his food, larger amounts of bromides can be tolerated, and do good. As intestinal disturbances provoke attacks, this part of the anatomy must be watched. The proper care and treatment for epileptics is to be found in colonies like that established in Westphalia thirty-five years ago. There 6½ per cent. are cured and 20 per cent. are improved. Ohio, Pennsylvania, California, New Jersey, Massachusetts, and New York now have such colonies, ours being the well known Craig Colony at Sonyea.

5. A Plea for a More Thorough Course in Practical Pharmacy in Our Medical Schools.—Thrush instituted a thorough investigation in the time medical schools assign to pharmacology in their curriculum. As a result he recommends the following as the minimum requirements: Ninety hours devoted to lectures and recitations on pharmacy and materia medica, with thirty hours' laboratory instruction, in which representatives of all the official preparations should be made; this course is preferably given during the first or second year. Thirty hours devoted to prescription writing, in which the student is thoroughly drilled in the formation and writing of prescriptions. Thirty hours devoted to practical prescription dispensing, in which various types of prescriptions should be dispensed by the student. These two courses should be given during the third year. Thirty hours should be devoted to a course in pharmacodynamics, in which the action of the most important drugs is demonstrated. This, of course, should be supplemented by a thorough course in general and applied therapeutics during the third and fourth years. If each medical college should adopt such a schedule as a minimum standard on this important subject, then and only then would our medical graduates be able to write prescriptions correctly and for palatable preparations, properly combined. The treatment of disease would then be based on rational therapeutics, as it should be.

6. Some Points on the Diagnosis and Treatment of the Pretuberculous State.—Disen speaks of the pretuberculous state, meaning a particular condition of the system that predisposes a person to infection with the tubercle bacillus or to the melting down of a preexisting tuberculous focus that in time had become latent. He classifies in his own practice patients in two principal types of constitution, an acid and an alkaline one; and, as he is of the opinion that the alkaline type is very much less immune than the acid one to tuberculosis, it is his plan speedily to determine to which of the two classes a patient belongs. For such a purpose he applies two principal tests, one confirming the other. First he examines the urine, then the blood, the methods being described; and if he finds the urine alkaline and the blood of a low basophile character of the nuclei (hypochromatosis) and disintegration of spongioplasm, with a relative deficiency in number of the smallest lymphocytes, and possibly irregularity in the distribution of neutrophile granules, then a diagnosis of the alkaline type is confirmed, while the presence of a pretuberculous state should be suspected.

BRITISH MEDICAL JOURNAL.

September 15, 1906.

(Seventy-fourth Annual Meeting of the British Medical Association.)

Section of State Medicine. Tuberculosis.

1. The Prevention of Tuberculosis, By S. G. DIXON.
2. The Prevention of Tuberculosis, By J. ROBERTS.
3. Some General Analogies Between Tuberculosis and Influenza. By A. W. GILCHRIST.
4. Some Doubtful Phases of the Tuberculosis Question, By C. O. PROBST.
5. The Dust Problem, as Presented in Domestic Households, Clubs, Hotels, and Certain Other Establishments, By G. HOMAN.
   Discussion,
   By F. J. MONTIZAMBERT, A. W. GILCHRIST, and others.

Control of Water Supplies.

6. The Basic Factors of Present Day Water Supply Problems, By H. W. HILL.
7. Artificial Purification of Water Supplies, By W. J. ROBINSON.
8. Water Supplies, By H. D. HOLTON.
9. General Water Questions, By T. A. STARKEY.
   Discussion, By C. O. PROBST, T. G. NASMYTH, and others.

3. Tuberculosis and Influenza.—Gilchrist considers the general analogies which exist between tuberculosis and influenza, as follows: 1. Both diseases have prevailed in epidemic and in endemic form. 2. They are both respiratory diseases. The nervous symptoms and gastrointestinal disturbances of influenza are secondary and subsidiary, and are not surprising if looked at in the light of our new knowledge as to the connections between the absorbent lymphatic tract and the cerebrospinal system. Chronic tuberculosis displays a tendency to produce excavatory lesions, chronic influenza to produce plastic and consolidating lesions. The respective microorganisms of tuberculosis and influenza are aerobic and successfully cultivated in general on blood serum and hæmoglobin, respectively. The tubercle bacillus behaves essentially as a respiratory ferment. The influenza bacillus is one of the most characteristic members of the hæmophilic group of bacteria. Both diseases display the same tendency in their urinary and respiratory biochemistry. The excessive hyperacidity of influenza leads to the same result as the marked hypoacidity of tuberculosis, *i. e.*, deficiency of assimilative activity. 3. Both are infectious diseases. Neither confers immunity; both predispose, on the contrary, to subsequent attacks. 4. Both distinctly affect the functions of relation: (a) by exciting rheumatic symptoms; (b) by giving rise to meningeal and other nervous complications. The writer, in conclusion, condenses his article into the following words: "Influenza is a disease of ancestral respiratory functions; tuberculosis a disease affecting these functions in their more recent and actual phylogenetic stage."

4. Tuberculosis.—Probst calls attention to the unsettled state of many important question in connection with tuberculosis. There is insufficient agreement among physicians as to the best mode of treatment of tuberculosis, the best style of buildings for sanatoria, the advisability of patients in all seasons and in all climates sleeping entirely out of doors, the advisability

of permitting patients to congregate indoors, etc. There are also great differences of opinion regarding the use of alcohol, the amount of rest and exercise, etc.

5. **Dust and Tuberculosis.**—Homan is convinced that large clubs, hotels, and other similar establishments constitute a real seeding ground for tuberculosis among members, guests, and employees, chiefly through the inattention or incompetency of those charged with their physical care and business management. The constant sweeping of carpets and dusting of furniture with dry brooms, brushes, and clothes keeps the tuberculous dust in the air. The excessive prevalence of tuberculosis in the poorer quarters of a city is probably due partly to the fact that many wage earners in clubs and hotels are drawn from such localities. Brooms and dusters should be totally banished, and the vacuum or pneumatic method of cleaning made compulsory by law.

7. **Purification of Water Supplies.**—Robinson discusses the artificial purification of water supplies by filtration. There are two great systems, namely, the slow sand or English filter bed system, and the mechanical or American system. 1. The English filter bed in its simplest form is a water tight reservoir suitably under drained and filled to the height of five or six feet with filtering material composed of gravel or sand. The quality and character of the sand is of the greatest importance; that containing much lime carbonate is objectionable, as it hardens the water. The water passes slowly and evenly through the fine sand, leaving the bulk of its suspended matter on top, forming the *Schmutzdecke,* or dirt cover. This contains not only the suspended matter, but also a gelatinous material produced by bacterial action. This gelatinous material is the most important constituent of the filter; it entangles and holds not only suspended matter of various kinds, but also the bacteria which come on the filter and start to work their way down through its pores. It is by these imprisoned bacteria that organic matter either in solid form or in solution is attacked and destroyed. The beds are most efficient when at their dirtiest; a new filter is of little use until it "ripens," *i. e.,* until the nitrifying organisms have firmly established themselves and the bacterial jelly envelops the sand grains. But the filters must be cleaned at frequent intervals, as they become impervious to water. This is done by scraping and removing the upper layer of dirty sand. Clogging of the filter takes place rapidly when the water is turbid and muddy; such water should be preliminarily treated either by rapid filtration, by sedimentation, or by the use of a suitable coagulant (to be described later). Where the winter climate is much below freezing, a frost proof cover is essential. The rate of filtration is usually limited to from two and a half to three million gallons per acre daily. 2. The mechanical or American system of filtration differs from the English system chiefly in the rapid rate of filtration, and in the fact that a small quantity of some coagulant is added to the water before it is admitted to the filter. The coagulant is usually aluminum sulphate, which combines with the carbonates in the water, forming aluminum hydrate—a white, flacculent, jelly like precipitate which acts like the white of egg in clearing coffee. The coagulent is added to the water in a large tank in the proportion of one grain to the gallon, after which the water is admitted to the filter. This is essentially a large tank or cylinder, partially filled with a uniformly fine sand. The precipitated hydrate not only entangles the germs and suspended matter, but also unites with the coloring matter of the water. Under ordinary conditions such a filter must be cleaned at least once in twenty-four hours. The rate of filtration is from thirty to forty times greater than that of an English filter bed. A sand filter one acre in extent costs about $60,000; a mechanical filter of the same extent about $40,000. The former costs much less to operate, however. Any improvement in the water supply of a large city is followed by an immediate reduction not only in the typhoid fever death rate, but also a lowering of the general death rate. Where one death from typhoid is avoided by the use of better water, three or four deaths from other causes are also avoided.

LANCET.

September 15, 1906.

1. Ten Years of Lunacy Treatment in Lewisham Infirmary, By F. S. Toogood.
2. Suture of Perforating Wound of the Heart; Death on the Eleventh Day, By F. T. Travers.
3. A Study of the Streptococci Pathogenic for Man, By F. W. Andrewes and T. J. Horder.
4. The Pulse in Aortic Disease; The Relation of Pulse Curves to Blood Pressure, By T. Lewis.
5. The Rash in Cerebrospinal Meningitis, By W. Wright.
6. A New Method of Administering an Anæsthetic Through a Tracheotomy Tube, By W. P. Cockle.
7. Ankylostome Parasitism Among the Native Laborers in the Transvaal, By W. G. T. Posnett.
8. Urinary Calculus and Its Detection with the X Rays, By E. W. H. Shenton.
9. Some Observations on Convulsions in Children and their Relation to Epilepsy, By R. O. Moon.
10. The Prophylactic Use of Antidiphtheritic Serum, By W. W. Shackelton.

2. **Wound of the Heart.**—Travers reports the case of a lad, aged nineteen years, who sustained a perforating wound of the heart from falling on a spike of a picket fence. The wound was cleansed, particles of bone removed, and the wound in the heart sutured. The patient did well at first, but died on the eleventh day. The noticeable features of the case were the plugging of the wound in the heart by a detached fragment of the sternum, which almost entirely stopped the bleeding, and the tolerance shown by the heart to the injury and the handling required at the operation. Pulsation continued regularly while the tips of the fingers were in the cardiac cavity; the insertion of each suture acted as an immediate stimulus. This was especially observed with the second set of sutures, by which time the heart's action had become very feeble. In view of the enormous loss of blood, it was remarkable that there was so little collapse; there was, further, no air hunger or delirium, though symptoms of cerebral anæmia were, so far as possible, averted by keeping the foot of the bed well raised. The patient recovered consciousness within half an hour of being put to bed and was conscious and rational throughout. The cause of death was apparently failure of the heart's action due to the pressure of the clot slowly forming on its anterior surface, which also blocked the pericardial wound and prevented the escape of the blood oozing from the gap in the wound in the heart and not directly due to the slight secondary hæmorrhage.

3. **The Pathogenic Streptococci.**—Andrewes and Horder have made a study of the various streptococci, with a view to their classification and to the determination of their pathogenicity to man. They differentiate the various forms by their chemical powers or metabolic reactions, adopting the method of Gordon. This consists of the use of a sugar free broth to which litmus and one per cent. of one of a number of certain substances (glucosides, saccharides, etc.) are added. Ability on the part of the streptococcus to utilize the test substance as food is indicated by vigorous growth with the appearance of a sharp acid reaction. Nine different substances were adopted as standards, and streptococci classified according to their reactions with these substances. These form Gordon's tests. The authors have studied about 1,200 examples of streptococci and propose the following classification: A. *Streptococcus equinus;* saprophytic and totally devoid of

pathogenic properties, derived chiefly from air, dust, and horse dung. B. *Streptococcus mitis;* saprophytic, occurring chiefly in human saliva and fæces, but is occasionally associated with disease. It is an inhabitant of the human alimentary canal, and is probably the form from which the virulent *Streptococcus pyogenes* has arisen. C. *Streptococcus pyogenes;* more definitely parasitic than any other form, yet occasionally occurring as a saprophyte in human saliva and fæces; highly pathogenic. D. *Streptococcus salivarius;* found as a saprophyte in saliva; for the most part nonpathogenic. E. *Streptococcus anginosus;* pathogenic, and has a special connection with inflammation of the fauces and with scarlet fever. F. *Streptococcus fæcalis;* a facultative parasite. G. Pneumococci (to be continued).

4. **Pulse in Aortic Disease.**—Lewis has analyzed the pulse curves in twenty cases of aortic regurgitation, and sums up his findings as follows: 1. Fourteen cases, averaging thirty-six years of age, showed an average systolic blood pressure of 132 millimetres Hg. These were cases unassociated with signs of granular kidney. 2. Four cases with signs of chronic interstitial nephritis (and an average age of forty-six years) showed an average systolic blood pressure of 163 millimetres Hg. 3. There was no definite relationship between the height of blood pressure and the amount of arteriosclerosis. 4. There was no relationship between the height of blood pressure and the state of compensation. 5. There were definite relationships between the amount of sclerosis, the age of the individual, and the ætiology of the case. 6. A pulsus bisferiens was palpable in thirteen cases out of twenty. 7. There was a definite relationship between the first secondary wave and the amount of arteriosclerosis. The greater the sclerosis the higher the wave. There was no relationship between the height of the wave and the height of blood pressure and state of compensation. 8. As a rule, though not invariably, the better the compensation the closer were the primary and first secondary wave, and the more shallow was the bisferiens notch. 9. The average duration of systole was 0.38 seconds, of diastole 0.48 seconds, there was no definite relationship between the two, and the relationship was of no prognostic significance. 10. A dicrotic notch was present in all cases; in nine it was normal, in six exaggerated; in five diminished. In height it showed no definite relationship to the amount of regurgitation, to the height of blood pressure, to the amount of arteriosclerosis, or the degree of compensation. Neither did it demonstrate any relation to the length of systole, but there was some relation between it and the depth of the bisferiens notch, though this was not constant. 11. In eighteen out of twenty cases the two pulse tracings were identical. 12. Only one case showed an anacrotic pulse, and then only on admission. The patient's age was sixty-eight years, and he presented signs of extreme arteriosclerosis and granular kidney.

5. **Meningitis Rash.**—Wright observed a rash in only a few of the cases of cerebrospinal meningitis occurring in Glasgow during the recent outbreak there. In two cases a purpuric rash, purple in color, the spots varying in size from a pin head to a lentil, was seen closely packed on the dorsum of the feet and nowhere else on the body. In another case a similar rash was scattered over the trunk and limbs. In a fourth case the rash appeared in successive crops, first appearing on the seventh day.

9. **Infantile Convulsions and Epilepsy.**—Moon has carefully studied and investigated two hundred cases of infantile convulsions, taken at haphazard, and concludes that the prognosis as to the future moral and mental condition of the child does not appear to be any better when the first fit is associated with a reflex cause which can be removed than when it is of idiopathic origin. There is no clear dividing line between infantile convulsions or eclampsia on the one hand and idiopathic epilepsy on the other. Infantile convulsions do not necessarily pass on into epilepsy, but a much larger number do so than is generally supposed. We have at present no adequate criteria for deciding in a given case in favor of the more or the less serious prognosis.

LA PRESSE MEDICALE.

September 8, 1906.

1. The New Theories of Solutions in their Relations to Medicine, By STEPHANE LEDUC.
2. Pulmonary and Pleural Complications Produced by Hidden or Unrecognized Foreign Bodies in the Bronchi, By PERRIN and J. PARISOT.
3. Second International Congress of Healthfulness and Wholesomeness of Habitations, By GEORGES VITOUX.

2. **Pulmonary and Pleural Complications from Foreign Bodies in the Bronchi.**—Perrin and Parisot report four cases in which an unsuspected foreign body was found in one of the bronchi at autopsy. The first patient, who had had epileptic convulsions, was taken sick in the street, found to have bronchopneumonia, pleurisy, and myocarditis, and died twenty hours later. On autopsy an irregular plate of metal, one and one half cm. by one cm. was found at the bifurcation of the lower right bronchus. The second patient died of diffuse pulmonary gangrene of the left lung, and on autopsy a fragment of bone was found lodged transversely across the left bronchus just above its bifurcation. The third patient fell and fractured a rib on his left side. The fragment punctured the lung and caused a pneumothorax, which quickly proved fatal. On autopsy a nail was found in the right bronchus at its bifurcation, which mechanically obstructed respiration on that side and so explained the sudden death from the pneumothorax on the left side. The fourth patient died as the result of a complicated fracture of the skull, and on autopsy a piece of pipe, five or six cm. long was found in the right bronchus. It lay along the axis on the bronchus, and therefore did not occlude its lumen.

September 12, 1906.

1. Intestinal Occlusion by Volvulus of the Small Intestine, By P. ALGLAVE.
2. The Habitation. Need for Reform in Its Hygiene, By A. AUGUSTIN REY.
3. Recent Studies Regarding Hay Fever, By J. P. LANGLOIS.
4. Fever and Toxine Infection of Menstrual Origin, By R. ROMME.
5. Second International Congress of Healthfulness and Wholesomeness of Habitations (*Continued*), By GEORGES VITOUX.

1. **Volvulus.**—Alglave reports the case of a man who entered the hospital with an intestinal occlusion which had existed for two and a half days. Laparotomy was performed at once, and when the incision was made in the abdominal wall the patient was found to be so exsanguinated that an intravenous injection of serum was made at once. A strangulated volvulus associated with a general peritonitis was discovered, and a few hours later the patient died. The case is used to point out among other things the injurious effect produced by a purgative which was administered twenty-four hours after the onset of the symptoms of acute occlusion of the intestine.

2. **Hygiene of the Habitation.**—Rey emphasizes as the two most important points of a dwelling good ventilation and good light.

September 15, 1906.

1. The New Theories of Solutions in their Relations to Medicine, By STEPHANE LEDUC.
2. The Cooking of Meat and Its Nutritive Value, By H. LABBE.
3. Second International Congress of Healthfulness and Wholesomeness of Habitations (*Continued*), By GEORGES VITOUX.

2. **The Cooking of Meat.**—Labbe gives as the four chief effects produced on meat by cooking: (1) A favorable or unfavorable influence on its masticability and digestibility; (2) more or less reduction in weight; (3) the induction of chemical changes, beneficial or otherwise, in the meat; (4) the effect on the flavor, which renders cooked meat more or less agreeable to the taste. He then considers the various methods of cooking with the peculiar effects of each, and the destruction of germs. He states that in this study the Americans are in advance of Europeans.

LA SEMAINE MEDICALE.

September 12, 1906.

The Part Played by Mineral Matter in the Organism, By Professor A. CHARRIN.

LYON MEDICAL.

September 9, 1906.

Urinary Indican and Skatol, By G. DAREMBERG and TH. PERROY.

Urinary Indican and Skatol.—Daremberg and Perroy present an excellent article on this subject which does not readily lend itself to the purposes of an abstractor.

September 16, 1906.

1. Hydrargyria in the Form of Erythema Circinate and Iris, By L. BONNET.
2. Relation between Chronic Rheumatism and Some Diseases of the Spinal Cord, By JEAN LEPINE.

1. **Hydrargyria in the Form of Erythema.**—Bonnet reports the case of a man who acquired syphilis in March, 1904, later developed certain manifestations of syphilis on account of which he was put on mercurial treatment in February, 1905. A few days later a circinate erythema appeared on his left thigh The mercury was discontinued, and the eruption disappeared. In February, 1906, the patient was again given mercury with the result that three days later the eruption reappeared and continued to augment until the cessation of the administration of the mercury. The eruption belonged to the class named by Hebra multiform exudative erythema, and was of the circinate and iris form.

2. **Chronic Rheumatism and Diseases of the Spinal Cord.**—Lepine reports seven cases in which there seemed to be a relation between chronic rheumatism and the diseases of the spinal cord from which the patients suffered.

BERLINER KLINISCHE WOCHENSCHRIFT.

September 3, 1906.

1. Resorption of Dead Tubercle Bacilli, By A. MARMOREK.
2. Studies of the Blood of Patients with Nervous Diseases, By R. RING.
3. Disease of the Sublingual Caruncula, By E. DAVIDSON.
4. The Serum Treatment of Hay Fever, By W. WEICHARDT.
5. Children Fed on Cereal Foods, By A. KELLER.
6. Does the Modern Diagnosis of Syphilitic Disease Suffice for Scientific Demands? (*Conclusion*), By O. ROSENBACH.
7. Bloody and Bloodless Procedures for the Acceleration of Labor, By E. RUNGE.

1. **Resorption of Dead Tubercle Bacilli.**—Marmorek gives as a typical example of his experiments the following: One cubic centimetre of a very fine emulsion of three days' old bacilli mixed with four cubic centimetre of antituberculosis serum was injected beneath the abdominal skin of a rabbit. The same quantity of emulsion mixed with four cubic centimetres of normal serum was injected into a control rabbit. After twenty-four days the second animal had a small local collection of pus and very many bacilli in the lymphatic glands of the axillæ and groins. The other rabbit at the same time exhibited no local changes and not a trace of bacilli in the lymphatic glands.

2. **Studies of the Blood of Patients with Nervous Diseases.**—Ring investigated the height of the blood pressure, its variability, i. e., the difference found on different days under the same conditions, its lability, i. e., the difference found under different conditions produced by changes of position and exercise during the same test, and the influence of the trigeminus reflex, all as compared with those of healthy persons. He found that the average blood pressure is abnormally high, its variability not greater as a rule than that of healthy persons, although there was a large minority in which a pathological difference was present, while its lability, from both change of position and exercise, was much greater in patients who had marked vasomotor symptoms. The trigeminus reflex showed an abnormally high increase of blood pressure in the great majority of patients with vasoneurosis. The increase of blood pressure from stooping was very marked in those patients who complained of dizziness in that position. The influence of psychic emotions was as marked as the effect on the cardiac rhythm.

5. **Children Fed on Cereal Foods.**—Keller claims that infants fed on cereal foods without the addition of milk prove to be imperfectly nourished when attacked by acute disease, because the nitrogenous elements of the food are slight, while fat and salts are nearly wanting.

6. **Modern Diagnosis of Syphilis.** — Rosenbach thinks that the investigator of to-day is too apt to rest on an autosuggestive diagnosis and to avoid the labor of a more exact demonstration.

MUENCHENER MEDIZINISCHE WOCHENSCHRIFT.

September 11, 1906.

1. The Relation of the Sexual Life to the Origin of Nervous and Mental Diseases, By GUSTAV ASCHAFFENBURG.
2. An Epidemic of Poisoning from Green Beans, By ROLLY.
3. Scopolamine-Morphine in Labor, By HOCHEISEN.
4. Reflex Inhibition of the Secretion of the Kidneys During Cystoscopy, By GEORG GRUND.
5. Favorable Influence Exerted by the X Rays on Chronic Bronchitis and Bronchial Asthma, By SCHILLING.
6. A Case of Treitz's Hernia with Rupture of the Sac, By MERKEL.
7. A New Case of Traumatic Hernia of the Lung Without Penetrating Wound of the Thorax, By GERMER.
8. Remarkable Case of Tuberculous Exanthema of the Skin, By VÖRNER.
9. Prostatitis Chronica "Cystoparetica," By GOLDBERG.
10. Ligation of the Pelvic Veins in the Pyæmic Form of Puerperal Fever, By FRIEDEMANN.
11. Natural and Artificial Feeding Among the German People in the City and the Country, and the Effect on the Nutritive Condition of the Infants. A Statistical Study, By J. DREYFUSS.
12. A Case of Simultaneous Intrauterine and Extrauterine Pregnancy, By FLEURENT.
13. Epileptics as Automobile Drivers, By FRANZ THALWITZER.
14. Schopenhauer's Disease in 1823, By JULIUS WOLFF.

2. **An Epidemic of Poisoning from Green Beans.**—Rolly reports the occurrence of two hundred and fifty cases of poisoning during one afternoon and night in Leipsic. The patients, being employed in one large establishment, had all eaten green beans that day at their midday meal. The symptoms were abdominal pain, chilliness, nausea, eructations, headache, dizziness, etc. Diarrhœa was one of the early symptoms in some cases; in others it came on during the night, while a few suffered from colic, but had no diarrhœa. Vomiting occurred in only a few cases. The symptoms persisted from two to four days and then subsided. The clinical course suggested that all of these cases were caused by the presence of a single form of bacterium, but the culture test demonstrated the presence of two kinds, the bacterium coli communis and the bacterium paratyphi type B.

3. **Scopolamine-Morphine in Labor.**—Hocheisen considers this form of anæsthesia more dangerous in labor than that produced by chloroform.

4. **Reflex Inhibition of the Urine During Cystoscopy.**—Grund reports a case in which he demonstrated that the function of the kidneys was suspended during the presence of the cystoscope in the bladder.

5. **Favorable Influence Exerted on Bronchitis by the X Rays.**—Schilling reports seven cases of bronchial trouble in which exposure to the x rays produced an almost immediate benefit.

7. **Traumatic Hernia of the Lung Without Penetrating Wound.**—Germer reports the case of a man who was thrown from his horse and soon after noticed a pain in his left side. Some weeks later a small painful tumor appeared between the sixth and seventh ribs on the left side and gradually grew larger. From the physical signs it was diagnosticated to be a hernia of the lung tissue.

9. **Prostatitis Chronica "Cystoparetica."**—Goldberg suggests this name to designate the worst cases of chronic prostatitis, which are associated with chronic retention of urine. He also gives a very good description of this condition.

10. **Ligation of the Pelvic Veins.**—Friedemann reports a case of the pyæmic form of puerperal fever following abortion in which he performed laparotomy and found thrombi in the pelvic veins, especially in the left prematic. Both veins on the right side and the spermatic on the left were ligated with catgut, but not excised. The patient recovered.

11. **Natural and Artificial Feeding.**—Dreyfuss says that the longer an infant is nursed at the breast the better is his nutritive condition on the average. He also says that a greater degree of advantage is obtained from breast nursing in the country than in the city, and that infants who live on artificial food obtain a better condition of nutrition in the city than in the country.

12. **Intrauterine and Extrauterine Pregnancy.**—Fleurent reports a case in which a young woman was operated upon for an extrauterine gestation sac which had ruptured, and the uterus found so large and soft that the presence of an intrauterine pregnancy was recognized. The operation was complete, and the patient recovered, but abortion of the intrauterine pregnancy took place in the fifth month.

Letters to the Editors.

ANÆSTHESIA OF PSYCHICAL ORIGIN.

126 EAST TWENTY-NINTH STREET,
NEW YORK, *September* 24, 1906.

To the Editors: Dr. W. Wayne Babcock's scholarly paper, published in your esteemed *Journal* of September 22nd, induces me to cite a case from antiquity which I think will prove of interest. It does not belong in the category to which Dr. Babcock has reference, namely, of anæsthesia produced by narcotic alkaloids, but it will serve to explain anæsthesia brought on by suggestion.

In a state of raving mania or profound melancholy insane people are anæsthetic (quite regardless of generally known forms of anæsthesia). This explains self mutilation. It is a fact, writes Dr. Schaefer, in his collection of original remarks on medicine taken from the old classic wrtiers, that such is not generally known. These anæsthesias belong in the domain of disturbed consciousness. The condition of hypnotized persons is similar to that of these insane. I am not aware whether this view of mine has ever been expressed by others. At any rate, it cannot be denied that in both cases we have to do with an abnormal state of mind. Lucretius mentions the influence which affections of the mind exert upon sensation by describing the complete insensibility to pain of soldiers fighting in battle. He writes as follows: "As the mind is bent upon fight, the body strives to do battle and to kill. Often he is not even aware that his lost left arm, together with the shield it held, was flung beneath the hoofs of horses from the impact with wheels and death dealing swords. Another, in his eagerness to scale a wall, does not feel that his hand has been cut off. Another, again, attempts to rise with a leg he has just lost and which, with throbbing toes, lies dying at his side."

The case of anæsthesia in phrenitis (miscalled psychosis) which I wish to cite, was described by Herodotus: "But when the Lacedæmonians were informed that Kleomenes harbored such thoughts, they became afraid and conducted him home to Sparta under the same conditions under which he had before been king. And as soon as he had arrived home, he fell a prey to a disease, namely, maniacal raving, not having been in his right mind before. For whenever he met a Spartan, he beat him with his stick upon the head. And because he did this and was completely insane, his relatives tied him to a wooden post. But when he was tied fast and saw that his guard had been left alone by the others, he demanded a sword, and, as the guard refused to give it to him, he threatened that he would not forget this, until at last the guard, who was a Helot, became frightened at the threats and gave him a sword. And when Kleomenes held the weapon in his hand, he began to mutilate his body, starting at the shins, the flesh of which he cut open lengthwise. From the shins he proceeded to the thighs, from the thighs to the hips and the loins, until he arrived at the abdomen, and as he cut this open also he died in this manner."

A. ROSE.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN GENITOURINARY SURGERY.

Meeting of May 16, 1906.

Dr. FOLLEN CABOT in the Chair.

Renal Tuberculosis; Nephrectomy.—Dr. MARTIN W. WARE presented three patients upon whom he had performed nephrectomy for renal tuberculosis. He said they were presented not so much to emphasize the importance of nephrectomy being indicated in such cases as to draw attention to some particular symptoms which were a little out of the ordinary and to the persistence of the symptoms in one of the cases.

The first case was that of a girl, twelve years of age. She had come with a painful cystitis, frequency of urination, the urine laden with tubercle bacilli, and marked pain in the region of the left kidney. No tumor could be felt on that side. The bladder capacity was 30 c.c. The patient was examined with the cystoscope and the ureters were catheterized. The bladder was ulcerated about the mouth of the left ureter, which was red and enlarged. The urine from the right side was normal; that from the left contained a large quantity of pus and numerous tubercle bacilli. Nephrectomy was performed, and though no tumor was felt before the operation, the kidney was of enormous size. The patient recovered, and some of the symptoms disappeared. A month after the operation, however, the bladder symptoms persisted, and the urine again became cloudy. It was supposed that the remaining portion of the ureter was affected and causing the trouble. An attempt was made to catheterize this ureter, but the catheter entered only a short distance. The opposite kidney was found to be normal. Bladder irrigations of all kinds were intolerable. Irrigations with five per cent. solution of carbolic acid, after the method of Rovsing, were used, but only aggravated the symptoms.

Dr. Ware then saw the statement of Pardeau, in the *British Medical Journal,* that he had cured vesical tuberculosis with very small doses of tuberculin. These were used in this case, and with considerable improvement. The patient had gained three pounds in weight, the frequency of urination was not so great, and the urine had cleared up considerably. The dose used was 0.00025 of a gramme, but the preparation employed was an old one, and much larger doses were used than would have been given of a fresh preparation.

The second case was that of a man, twenty-one years of age. He gave a history of a long standing gonorrhœa in the deep urethra. He had been treated by irrigations of one kind and another. When he came under Dr. Ware's care he had pain, frequency of urination, terminal hæmaturia, a high temperature, and a discharge from the urethra containing gonococci. Endoscopic examination showed a warty growth in the deep urethra. This was cauterized with silver nitrate, and the hæmaturia ceased. The pain and frequency of urination persisted. Cystoscopy showed the trigonum one mass of a reddish color, and the ureters could not be distinguished. The bladder was washed with bichloride solution, 1 to 5,000. The patient continued to lose strength, and had fever of an irregular type, but no chills or sweating. Another attempt was made to use the cystoscope, but without success. At this time there was pain referred to the left renal region. The patient was given tuberculin, but no reaction was obtained. The urine was examined bacteriologically, and a pure culture of the staphylococcus was found. The same finding was met with in the blood. There was no tumor discoverable in the left renal region, but there were now pain and tenderness on that side. An exploratory operation revealed a large abscess in the left kidney. The abscess was drained, and the patient recovered. A fistula remained, and now and then the urine was turbid, and there was some pain about the prostate. Secondary nephrectomy was performed two or three months after the first operation, and a number of smaller abscesses were found in the portion of the kidney not opened by the first operation. The gross examination did not show any evidences of tuberculosis, but on microscopical examination the condition was found to be tuberculosis.

The third patient was a man, fifty years of age, who came with a history of having been operated upon in the perinæum. The nature of the operation was not known, but a sinus remained in the perinæum. He had frequency of urination and pyuria. The urine was acid and cloudy, but contained no tubercle bacilli. The capacity of the bladder was not decreased. There was some tenderness in the right renal region. He was examined with the cystoscope and both ureters were catheterized. The mouth of the right ureter was enlarged, reddened, and eroded. The urine from the right kidney contained pus; the left kidney was normal. Primary nephrectomy was performed, and a multiple tuberculous abscess of the kidney was found. The operation was followed by rapid recovery.

Notes on Vesical Tuberculosis.—Dr. James Pedersen read a paper with this title. Vesical tuberculosis, he said, was a disease of early adult and middle life, more frequent in men than in women, and almost invariably secondary. It was a disputed question whether it was secondary to disease of the kidney or of the genital organs. It was also a mooted point whether infection generally took place through the blood or the lymph vessels. No weight was attached to infection by tuberculous urine or semen. Some authorities stated that the urine maintained its acidity, others that it became alkaline. Pus in the urine denoted a mixed infection. The presence of tubercle bacilli in the urine was the one pathognomonic sign, but failure to find them was not conclusive negative evidence. The diagnosis was difficult in the early stages, but not so later. Pain, frequency of urination, and hæmaturia were the cardinal symptoms. Cystoscopy would show patchy hyperæmia, erosions, or ulcerations. Search should be made for tuberculosis of other organs. A sign of some value was the fact that the bladder was intolerant of mild solutions of silver nitrate, but this was also true of some cases of vesical calculus. Strong solutions acted favorably. It was the consensus that in the early stages the treatment should be mainly hygienic and dietetic. Creosote and guaiacol were good. Instillations were preferred to irrigations as a general thing. When the frequency of urination and the tenesmus could be controlled no longer, the bladder should be drained. Kelly excised the ulcers. The prognosis of vesical tuberculosis was universally conceded to be bad. Two illustrative cases were reported in detail.

Dr. Hiram N. Vineberg had never met with vesical tuberculosis in women except where it was secondary to a tuberculous kidney. He did not agree with Dr. Pedersen that when strong solutions of silver nitrate were injected into the bladder it was necessary to neutralize them with salt solution. In order to cauterize the ulcers efficiently, the bladder should be perfectly free of urine. He did not believe the prognosis was very bad, especially where the disease was secondary to renal tuberculosis.

Dr. Herman Goldenberg said that it was Casper who had first called attention to intolerance of irrigations with silver nitrate as a sign of vesical tuberculosis.

Dr. Howard Lilienthal said that vesical tuberculosis was very difficult to treat, topical applications giving only slight relief. A strict hygienic and dietetic regimen, such as had been satisfactorily carried out in pulmonary tuberculosis, together with the use of tuberculin, would give the best results. In giving tuberculin it was necessary to be very careful not to produce a reaction. One twentieth of a milligramme was a fair dose for an adult, and it was probably best to begin with one fortieth. Tuberculin *for diagnosis* should not be given where fever was present, as it would be impossible to tell whether the fever was caused by the disease or by the tuberculin. Dr. Lilienthal uttered a warning against nephrectomy in renal tuberculosis. It was quite easy to make an error in diagnosis and remove the less diseased of the two kidneys, especially where there was an ulcer in the pelvis of one of them, which would make the urine examination misleading. Renal tuberculosis would yield to hygienic and dietetic treatment and the use of creosote and carbonate of guaiacol.

Dr. F. Tilden Brown believed that most cases of vesical tuberculosis had their origin in the kidney, and that in the vast majority of cases of tuberculosis of the genitourinary tract there were preexisting pulmonary lesions. The use of small doses of tuberculin promised favorable results. It was a mistake to use only hygienic and dietetic treatment when there was a distinct focus present. It should be dealt with radically. Ureteral catheterism would determine the extent to which the two kidneys were diseased, and prevent a mistake in operation. He knew of only one or two cases where a cure had been effected by hygienic and dietetic measures alone. Early nephrectomy should be resorted to, and then, if the bladder did not heal, other means should be used. The bladder could be opened and the ulcers cauterized or curetted. There was little danger of a tuberculous fistula after the operation.

Dr. Vineberg thought there was danger of a tuberculous fistula following operation, and said that Israel, even after removal of the kidney and the entire ureter, never expected to get primary union, and put in the sutures simply to keep the wound surfaces together.

Dr. Albert A. Berg said it had not been his experience that the failure to cure chronic cystitis with silver nitrate pointed definitely to the presence of tuberculosis or suggested it very strongly. He said that there were cases of chronic nontuberculous ulceration of the bladder that were not cured by local applications of silver nitrate solution. In such cases Howard Kelly had practised excision of the ulcerated area. In several cases of tuberculous ulcers of the bladder, Kelly had also excised the ulcers with entire cure of the patient. Such a practice, however, was only to be followed in cases where the tuberculous ulcers could not be cured by simpler measures. Dr. Berg was of the same opinion as Dr. Brown in reference to Dr. Lilienthal's case of bilateral renal tuberculosis, viz., that the diagnosis of the more severely affected side could have been made by the modern methods of diagnosis of kidney function.

Dr. B. S. Barringer said that Zuckerkandl, after removal of the kidney and ureter, cauterized the ureteral wound. The question of whether tuberculosis of the kidney could be cured by hygienic and dietetic treatment could be determined by the pathologists, and it was a fact that at autopsies healed tuberculous lesions were found in the kidneys. There was no reason why the kidneys should not heal in the same way as other organs of the body. It was important for the surgeon to know exactly what was meant by hygienic and dietetic treatment in tuberculosis. Too many kidneys were removed on insufficient evidence.

Dr. Lilienthal had seen a number of kidneys at autopsy showing healed tuberculous lesions. If the tuberculosis extended into the bladder, or there was a mixed infection, the kidney should be removed.

Dr. Ware said he had since reduced the dose of tuberculin to $^1/_{100}$ of a milligramme, the first preparation used having been an old one.

Dr. Pedersen said a twelve per cent. solution of silver nitrate would do considerable damage to the nondiseased portions of the bladder, and it was necessary immediately to neutralize the silver. The silver nitrate acted instantly on the diseased portions. In one case he had obtained good results by the use of hot solutions of creolin.

Keloid of the Penis.—Dr. Alexis V. Moschcovitz presented a boy, fourteen years old, with this condition. The boy was circumcised soon after birth, and the wound was said to have been slow in healing. When he was eight years old he began to complain of painful urination, and was treated without benefit. Two years ago the symptoms became worse, he was treated by a physician, and apparently a mesatotomy was done. About five months ago the patient noticed a small growth on the tip of the penis. He now complained of painful urination and tenesmus. Examination showed the scrotum and testes to be normal. There was a small tumor on the tip of the penis, and an œdematous swelling on the lower surface of the organ, near the site of the frenum. The meatus was very small, and the growth extended some distance along the urethra. Microscopical examination of a portion of the tumor showed it to be a keloid. Dr. Moschcovitz said he had tried the x ray without any apparent benefit, and he asked for suggestions as to treatment. He thought the case unique, and he presented it as one of keloid developing in the cicatrix of a meatotomy.

Dr. Pedersen asked if it would not be possible to resect that portion of the urethra involved by the growth, bringing the urethra forward, as in Beck's operation for hypospadias. He thought that the fact that the patient was still young would make this method of treatment feasible.

Dr. Lilienthal was astonished that a keloid should appear so long after the circumcision.

Dr. Follen Cabot thought it should be determined whether the passage of the urine over the tumor had any influence upon it. If it did, perineal drainage could be resorted to, and then a plastic operation performed.

Dr. Moschcovitz said that he had thought of the Beck operation, but was rather skeptical as to the result. In a patient with a tendency to its development, he feared that a worse keloid might appear after the operation than the one the patient now had.

Papilloma of the Bladder.—A specimen was presented by Dr. John F. Erdmann. The patient was a man, forty-two years old. For a number of years he had had what appeared to be obstruction in urinating, characterized by perfect starting of the stream, then apparent cessation, and starting again by straining. This continued for a number of years, when suddenly blood was noticed, very profuse. Then two small particles were found. These particles, upon analysis by Dr. Sondern, were found to be papillomatous. Cystoscopy revealed a large papilloma in the region of the left ureteral orifice. A suprapubic operation was done in October, 1905. Exposure of the bladder revealed but one papilloma, and this one at the left ureteral implantation, as shown by cystoscopy. A Kelly proctoscope was slipped over it through the bladder wound, and the papilloma was grasped in the jaws of the forceps and cut at the base with scissors, going well into the vesical wall. Bleeding was profuse, but was readily checked with the cautery. A drainage tube was left in for three days, being placed after the method of Kahder. There was small skin drainage. The patient was discharged without a sinus on the fourteenth day.

Renal Calculus.—This specimen also was presented by Dr. Erdmann. The patient, a man, thirty-nine years old, gave a history of pain in the left kidney, in the left groin, and occasionally in the right groin. Some three or four years ago blod and oxalates were found in the urine. Dr. Finch found some albumin. There was pain in the left testicle at about the same time that blood was discovered in the urine. The pain on the left side was intermittent. Sometimes it was absent for months. It was generally induced by walking, etc. On jumping from a car he would feel pain in the kidney and testis. His weight was possibly slightly increased. There was no excess in urinating, no pus in the urine. The pain was seldom severe enough to require morphine, though at times more severe, to the extent of doubling him up. Examination showed the left kidney painful on pressure, but no enlargement. An operation was done on May 2nd by the Israel incision. An incision was made in the posterior wall of the hilum. There was great difficulty in loosening the adhesions. Profuse bleeding occurred, but was readily checked by packing. There was bloody urine for two days. The wound healed primarily.

The Phonophore.—Dr. Follen Cabot presented an instrument which he had devised for detecting stone in the urinary tract. It was devised over a year ago, and reported in the *Journal of the American Urological Association* for March, 1905. It was formerly used in connection with the phonendoscope, but owing to extraneous noises the phonendoscope had been discarded, and it was now used with straight rubber tubes and ear pieces. The instrument consisted of three whalebone guides, metal tipped, and the rubber ear pieces. The guides might be used either with or without the direct vision cystoscope for the detection of stone in any part of the urinary tract. Dr. Cabot was of the opinion that a positive finding was of considerable value. It could also be used for the detection of hard foreign bodies in the bladder.

A Prostatic Extractor.—Dr. Cabot also presented an instrument for extracting the prostate in cases of perineal prostatectomy. He had found in operating in forty cases of prostatic hypertrophy that in the perineal

cases, of which he had had twenty-eight, much time was lost in extracting the loosened lobes. In order to facilitate the work he had devised this extractor, which fitted close to the index finger and could be used with the other index finger in the rectum. It took up practically no room, and could be adjusted to anyone's finger.

Book Notices.

Die experimentelle Bakteriologie und die Infektionskrankheiten mit besonderer Berücksichtigung der Immunitätslehre. Ein Lehrbuch für Studierende, Aerzte und Medizinalbeamte. Von Dr. W. Kolle, o.ö. Professor der Hygiene und Direktor des hygienisch-bakteriologischen Institutes an der Universität Bern, und Dr. H. Hetsch, Stabsarzt und Vorstand der bakteriologischen Unitersuchungsstation des xvi. Armeekorps in Metz. Mit 3 Tafeln und 125 grösstenteils mehrfarbigen Abbildungen. Berlin: Urban & Schwarzenberg, 1906. Pp. xii-589.

This work is practically a digest of the larger *System of Bacteriology* recently edited by Kolle and Wassermann, which has already become the standard international reference work in all laboratories. The need of a smaller work which yet far exceeds the scope of the average textbook of bacteriology is undoubted, and the present volume ought to find a wide circulation among the large numbers of German reading American students and practitioners of medicine.

The style of the present treatise is very concise, but in no case superficial. In fact, the various chapters are comprehensive and thorough, condensation having been secured by omission of references and by dogmatic but usually correct statements of the known facts. The advanced student will here find in accessible form a complete presentation of all the important knowledge of the microorganisms concerned in disease. An important feature of the discussions is the prominence given to immunity relations, and separate chapters are devoted to each of the immunity reactions. Discussion of opsonins and aggressins are, however, omitted. The scope of the descriptive work is remarkably complete, including full chapters on botulismus, Vincent's angina, spirochætal infections, trypanosomiasis, piroplasmosis, and yellow fever.

The colored plates are excellent, as are some of the colored drawings, but those of malaria are less successful. The work is especially adapted to the needs of advanced students and of practitioners, to whom it may be warmly recommended.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending September 28, 1906:

Places.	Date.	Cases.	Deaths.
Smallpox—United States.			
Indiana—South Bend	Sept. 16-22	1	
Kentucky—Lexington	Sept. 8-15	1	
Louisiana—New Orleans	Sept. 8-15	7	
		6 imported.	
Ohio—Cincinnati	Sept. 14-21	1	
Pennsylvania—Altoona	Sept. 15-22	1	1
Smallpox—Foreign.			
Africa—Cape Town	Aug. 4-18	8	
Brazil—Bahia	Aug. 11-18	6	
Brazil—Pernambuco	Aug. 1-15		3
Brazil—Rio de Janeiro	Aug. 12-Sept. 2	10	
Chile—Antofagasta	July 29-Aug. 12	39	4
Chile—Coquimbo	July 29-Aug. 12	30	1
Chile—Talcahuana	July 29-Aug. 12	Present.	
India—Bombay	Aug. 14-28		4
India—Calcutta	Aug. 4-11		2
India—Karachi	Aug. 12-26	5	2
India—Madras	Aug. 4-17		3
Russia—Moscow	Aug. 18-25	2	
Russia—Odessa	Aug. 25-Sept. 1	6	
Russia—St. Petersburg	Aug. 18-25	2	1
Siberia—Vladivostok	July 28-Aug. 4	1	
Spain—Barcelona	Sept. 1-10		8
Spain—Seville	Aug. 1-31		31
Turkey—Constantinople	Aug. 26-Sept. 9		2
Yellow Fever—Foreign.			
Cuba—Habana	Sept. 27	2	
Ecuador—Guayaquil	Aug. 1-31		9
Mexico—Merida	Sept. 2-15	5	4
Mexico—Tuxtepec	Sept. 2-15	4	5
Mexico—Vera Cruz	Sept. 2-15	2	1
Cholera—Insular.			
Philippine Islands—Manila	July 28-Aug. 4	38	30
Philippine Islands—Provinces	July 28-Aug. 4	731	534
Cholera—Foreign.			
India—Bombay	Aug. 14-28		89
India—Calcutta	Aug. 4-17		8
India—Madras	Aug. 4-17		19
India—Rangoon	Aug. 11-18		1
Plague—Insular.			
Hawaii—Honolulu	Aug. 18-25	1	1
Plague—Foreign.			
Brazil—Rio de Janeiro	Aug. 12-Sept. 2	8	4
Brazil—Pernambuco	Aug. 1-15		2
Egypt—Alexandria	Aug. 28-29	2	1
Egypt—Suez	Aug. 24-25		2
India—General	July 28-Aug. 11	2,321	167
India—Bombay	Aug. 14-28		61
India—Calcutta	Aug. 4-11		2
India—Karachi	Aug. 12-26	10	8
India—Rangoon	Aug. 4-18		205
Japan—Formosa	Aug. 10-20	3	3
Peru—Lima	Aug. 18-25	7	4
Peru—Mollendo	Aug. 18-25	1	1
Peru—Paita	Aug. 18-25	3	2

Public Health and Marine Hospital Service:

List of Changes of Station and Duties of Commissioned and Noncommissioned Officers of the Public Health and Marine Hospital Service, for the seven days ending September 26, 1906:

Beck, J. E., Pharmacist. Relieved from duty at San Francisco, Cal., and directed to proceed to Honolulu, H. T., reporting to Chief Quarantine Officer for duty and assignment to quarters.

Gassaway, J. M., Surgeon. Granted leave of absence for three days.

Gibson, L. P., Acting Assistant Surgeon. Granted leave of absence for five days.

Grubbs, S. B., Passed Assistant Surgeon. Granted leave of absence for two days.

Guiteras, G. M., Surgeon. Granted leave of absence for one day.

Hall, L. P., Pharmacist. Granted leave of absence for seven days, from September 23, 1906, under Paragraph 210 of the Regulations.

Hobby, W. C., Passed Assistant Surgeon. Detailed to represent the Service at the semi-annual meeting of the California Public Health Association at San José, Cal., October 10, 1906.

Iltis, George W., Pharmacist. Granted leave of absence for thirty days, from September 22, 1906.

James, W. F., Acting Assistant Surgeon. Leave of absence without pay granted to Acting Assistant Surgeon James for fifteen days, from August 31, 1906, revoked.

Lavinder, C. H., Passed Assistant Surgeon. Relieved from temporary duty at Detroit, Mich., and directed to proceed to Stapleton, N. Y., reporting to the Medical Officer in Command for duty and assignment to quarters.

Scott, E. B., Pharmacist. Granted leave of absence for twenty-three days, from August 23, 1906, on account of sickness.

Scott, E. B., Pharmacist. Granted leave of absence for twenty-four days, from September 20, 1906.

Slough, Charles, Pharmacist. Relieved from duty at Honolulu, H. T., and directed to proceed to San Francisco, Cal., reporting to the Medical Officer in Command for duty and assignment to quarters.

Stimpson, W. G., Surgeon. Granted leave of absence for two days, from September 21, 1906.

WARD, W. K., Assistant Surgeon. Granted leave of absence for seven days, from September 24, 1906, under the provisions of Paragraph 191 of the Regulations.

WERTENBAKER, C. P., Surgeon. Granted extension of leave of absence for seven days, from September 22, 1906.

WHITE, J. H., Surgeon. Granted leave of absence for seven days, from September 23, 1906.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, for the week ending September 29, 1906:

BARTLETT, COSAM J., Captain and Assistant Surgeon. Advanced to the rank of captain, from September 21, 1906.

CARTER, WILLIAM F., Major and Surgeon. Granted leave of absence for one month, to take effect about October 6, 1906, with permission to apply for one month's extension.

COX, WALTER, Captain and Assistant Surgeon. Leave of absence extended two months.

DAVIS, WILLIAM B., Lieutenant Colonel and Deputy Surgeon General. Left Headquarters, Department of the Lakes, Chicago, Ill., on twenty-one day's leave of absence.

FORD, CLYDE S., Captain and Assistant Surgeon. Will repair from New York city to Washington, D. C., and report in person to the Military Secretary of the Army for instruction in the matter of personal identification record.

GIRARD, JOSEPH B., Colonel and Assistant Surgeon General. Relieved from duty as chief surgeon, Philippines Division, and will proceed to San Francisco Cal., on transport sailing from Manila in December, 1906, reporting on arrival in the United States to the Military Secretary of the Army for further orders.

HOFF, JOHN VAN R., Colonel and Assistant Surgeon General. Relieved from duty as chief surgeon, Department of the Missouri, and will proceed to San Francisco, Cal., and take transport to sail November 5, 1906, for the Philippine Islands, and upon arrival at Manila will report in person to the commanding general, Philippines Division, for assignment to duty.

JONES, HAROLD W., First Lieutenant and Assistant Surgeon. Will accompany 14th Cavalry from Sequoia and the General Grant National Parks to the Presidio of Monterey, Cal., and report on arrival for temporary duty; also to report by letter to the commanding general of the department for further orders.

KIRBY-SMITH, Captain and Assistant Surgeon. Left Army General Hospital, Presidio of San Francsico, Cal., on thirty days' sick leave of absence, with permission to apply for two month's extension.

KOERPER, C. E., First Lieutenant and Assistant Surgeon. Granted thirty days' leave of absence.

LOVE, ALBERT G., First Lieutenant and Assistant Surgeon. Will accompany troops from Yosemite National Park to the Presidio of San Francisco, Cal.; upon arrival at the latter post will report for temporary duty, and also report in person to the commanding general, Department of California, for further orders.

LYNCH, CHARLES, Major and Surgeon, General Staff. Leave of absence extended fifteen days.

MORRIS, SAMUEL J., First Lieutenant and Assistant Surgeon. Ordered to proceed from Fort Schuyler, N. Y., to New York city, and report in person to the commanding officer, U. S. Army Transport *Sumner* for duty as transport surgeon.

RHOADS, THOMAS L., Captain and Assistant Surgeon. Relieved from duty at the U. S. Military Academy, West Point, N. Y., and ordered to Fort Crook, Neb., for duty.

SMITH, HERBERT M., Captain and Assistant Surgeon. Advanced to the rank of captain, from September 20, 1906.

WADHAMS, S. H., Captain and Assistant Surgeon. Will accompany Companies B and D, 4th Infantry, from Fort Slocum N. Y., to Fort Mackenzie, Wyo., instead of First Lieutenant James D. Fife, assistant surgeon, previously assigned to this duty.

WAKEMAN, WILLIAM J., Major and Surgeon. Left Fort Thomas, Ky., on thirty days' sick leave of absence.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending September 29, 1906:

BACHUS, J. W., Passed Assistant Surgeon. Detached from the U. S. R. S. *Franklin*, Navy Yard, Norfolk, Va., and ordered to the *Texas*.

BELL, W. H., Surgeon. Ordered to special duty in the Bureau of Medicine and Surgery, Navy Department, Washington, D. C.

BENTON, F. L., Surgeon. Detached from the Naval Hospital, Navy Yard, Pensacola, Fla., and ordered to the *Texas*.

DEBRULER, J. P., Assistant Surgeon. Detached from the Navy Yard, Washington, D. C., and ordered to special duty in the Bureau of Medicine and Surgery, Navy Department, Washington, D. C.

FREEMAN, G. F., Passed Assistant Surgeon. Ordered to duty in the Naval Hospital, Portsmouth, N. H.

LANGHORNE, C. D., Surgeon. Ordered to the *Brooklyn*.

LOVERING, P. A., Medical Inspector. Detached from duty as a member of the Naval Medical Examining Board and ordered to duty in command of the Naval Hospital, Norfolk, Va.

MOORE, A. M., Surgeon, Retired. Ordered to the Navy Recruiting Station, Memphis, Tenn.

PAGE, J. E., Surgeon. Ordered to the Naval Hospital, Norfolk, Va.

RENNIE, W. H., Assistant Surgeon. Detached from the U. S. R. S. *Lancaster*, Navy Yard, League Island, Pa., and ordered to duty in the Naval Hospital, Pensacola, Fla.

TAYLOR, E. C., Assistant Surgeon. Detached from the U. S. R. S. *Hancock*, Navy Yard New York, and ordered to duty in the Naval Hospital, New York.

TOLFREE, H. M., Passed Assistant Surgeon. Detached from the Naval Hospital, Norfolk, Va., and ordered to the *Connecticut*.

WEBB, U. R., Passed Assistant Surgeon. Detached from the Naval Hospital, Portsmouth, N. H., and ordered to the *Brooklyn*.

Births, Marriages, and Deaths.

Married.

BLAKESLEE—ELLYSON.—In New York, on Friday, September 7th, Dr. Elbert Wellington Blakeslee and Miss Mary Berkeley Ellyson, of Richmond, Va.

FLUKE—REGAN.—In Philadelphia, on Wednesday, September 26th, Dr. George T. Fluke and Miss Eleanor V. Regan.

MASON—BROOKS.—In Lapeer, Michigan, on Wednesday, September 19th, Dr. H. A. Mason, of Detroit, and Miss Gertrude Brooks.

VAN HOESEN—GAUGER.—In Albany, N. Y., on Tuesday, September 25th, Dr. J. E. Van Hoesen and Miss Marie A. Gauger.

Died.

BABCOCK.—In New London, N. Y., on Wednesday, September 19th, Dr. H. E. Babcock, aged seventy-nine years.

CAVITT.—In St. Louis, Missouri, on Thursday, September 20th, Dr. B. H. Cavitt, of Hickman, Kentucky.

HAND.—In Brooklyn, N. Y., on Thursday, September 27th, Dr. George F. Hand, of Binghamton, N. Y.

MCCULLOUGH.—In Lawrenceburg, Indiana, on Thursday, September 20th, Dr. John C. McCullough, aged fifty-six years.

RUGER.—In Devil's Lake, North Dakota, on Wednesday, September 12th, Dr. H. H. Ruger.

SAVAGE.—In Bath, Maine, on Tuesday, September 12th, Dr. James W. Savage.

SHELDON.—In Lakewood, N. J., on Sunday, September 23rd, Dr. Henry L. Sheldon.

SKINNER.—In Belleville, N. J., on Wednesday, September 26th Dr. Daniel M. Skinner, aged seventy-one years.

WATSON.—In New York, on Monday, September 17th, Dr. W. S. Watson, of Albion, N. Y.

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Original Communications.

RECIPROCITY IN MEDICAL LICENSURE.

By REGENT ALBERT VANDERVEER, M.D.,
Albany, N. Y.

As a result of conferences between the States of New Jersey, Michigan, and Ohio, formal agreements for reciprocity in medical licensure have been entered into between the States of New York and New Jersey, Michigan, and Ohio, during the school year just closed.

The basis upon which reciprocity obtains between these States is a license earned *on examination* in either one of them. The candidate for endorsement of a medical license must present credentials from the officials of the State board of medical examiners which licensed him, showing that at the time of such application he is a reputable practitioner. Provision is made for the inspection of the qualifications of an applicant either personally or professionally when there are reasonable doubts of his qualifications, and an applicant presenting a license issued prior to the establishment of reciprocity may be required to submit the original papers on which the license was granted or certified copies thereof. Only an original State license can be endorsed.

The preliminary education required for admission to the medical schools must be the same in each State, and the certification of the education department of the State as to the standards maintained by secondary schools will be accepted by the education department of the other States. The standards to be required of secondary schools without those States must be fully equivalent to those required within the States, and such standards shall be determined in joint conference between the education departments of the States, the registered list of New York State remaining in force till a joint list becomes operative.

The unit of value in measuring or estimating the preliminary qualifications is the count which is of universal use in New York State and is in accord with the academic syllabus for secondary schools. The recognized medical schools registered as maintaining the required standards are those of the States in which the applicant seeks endorsement. The standard of registration of the Board of Regents of the University of the State of New York and their list of registered medical schools in group 1 are adopted, each State reserving the right of submitting evidence with reference to any institution, either for removing it from or for placing it on the approved list.

Full faith and credit are given by the board of each State to the examinations held by the boards of the other States. The applications for license under this agreement must be endorsed in the representative States by the president and secretary of the board of examiners and by the commissioner of education. The agreement has been signed by the representatives of the State boards and the education departments, and remains in force until rescinded by formal action.

From the report of an American Consul in Austria, Hugo Donzelmann, Prague, March, 1898, the following statement of the principles of the first laws promulgated in Europe with reference to the practice of medicine and pharmacy is condensed. Their principle is still apparent in all later laws, namely, the public good, and this principle is the underlying principle in the growth of laws affecting admission to the practice of the learned professions in the United States.

The first decree of Frederick II., in 1224, can be said to have been the fundamental constitution of all existing laws in Europe, the same having been amended and improved upon from time to time, but always bearing in mind that the practice of medicine and pharmacy was to be under the special care and supervision of the government in order to protect its people against imposition. In that year he established by a decree the first college for the education of physicians, at Naples, and promulgated the first laws governing the practice of medicine within his domain, viz., that no person should be admitted to the practice of medicine who had not passed his examination before the Collegio Medico de Napoli; that after having received his diploma from said college it became necessary for the person to enter into active practice with a regular practising physician for the period of one year as assistant; and that an oath had to be taken by the person whereby he promised to follow and live up to the laws of the country respecting the practice and sale of medicine and whereby he bound himself to attend to the sick, to accept only a reasonable fee from all who were able to pay, and to treat the poor and impecunious free and without charge.

It would be interesting in this connection to trace the development of professional laws in the United States, but this is foreign to the purpose of this article, and I have time only to refer to the series of bulletins published by the regents, entitled *Professional Education in the United States, Medicine.* The New York statute establishing these standards whereon reciprocity may be entered into with other States, reads as follows:—

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"Applicants examined and licensed by other State examining boards registered by the regents as maintaining standards not lower than those provided by this article, may, without further examination, on payment of $10 to the regents, and on submitting such evidence as they may require, receive from them the endorsement of their license or diploma, conferring all rights and privileges of a regents' license issued after examination."

In determining whether standards are lower than those provided by the statute, four distinct lines of statutory requirements are studied: (1) the preliminary education required for admission to the professional school; (2) the professional training required for graduation; (3) the licensing test required by an independent examining board; and (4) registry in offices of record.

The present preliminary education of New York State required for admission to registered medical schools and the medical licensing examination is evidence of four full years of secondary education subsequent to eight years of elementary or the equivalent in higher institutions. The evidence of this preliminary education is the medical student certificate, in the determination of which certain specific requirements are exacted. By reason of the unification of the various educational forces of the State a harmonious and complete determination of the various conditions surrounding the problem of admission to higher institutions is possible. For example, the more than 650 high schools and 150 academies are chartered or admitted to membership in the university under uniform requirements. The courses of study in these secondary institutions are based on eight full years of elementary instruction brought into harmony with the secondary work through a centralized administration. The subjects and their treatment in the secondary schools are outlined and determined on expert judgment of the teaching body through its representatives and the appropriate authorities in the education department, which finds expression in the academic syllabus in force for a syllabus period of five years. The work of these secondary schools is tested and kept up to grade by a system of examinations which not only provides for this purpose, but renders possible the determination of the character of work done by students unable to take advantage of the schools.

The registration of the secondary schools based on inspection and examination tests provides for a series of credentials the most accurate and clearly determined by any administrative authority. By reference to the full agreement in effect August, 1906, between the States of New York and Ohio, Section 5 (see page xx) it will be seen that the preliminary education required for admission shall be the same for both States, and that the certification of the education department of either State shall be accepted by the education department of the other. The effect of this agreement, as shown by experience with New Jersey, is to develop and harmonize the requirements for admission to the other professions, so that in the near future there will be reciprocal relations, not only in medical licensure, but in all other lines of affiliated relations, with a number of the strongest States of the Union.

The professional requirement for the registration of medical schools and for admission to the medical licensing examination is the study of medicine not less than four full school years of at least nine months each, including four satisfactory courses of at least six months each in four different calendar years in a medical school registered as maintaining at the time a satisfactory standard. The registration of the medical schools has reference to the professional educational requirement and, for all schools registered or accredited July 1, 1906, and subsequent thereto, to the general preliminary educational requirement also that must be met by candidates for admission to New York medical schools. Prior to that date the registration of the professional requirements of medical schools was determined independently of the general preliminary education required for admission to the same. A marked advance has come from the accuracy and careful consideration of the problems involved in registration. When registration required the meeting of the full professional law, and no crediting was possible, students in lower institutions desiring to migrate to superior found it impossible to do so, for the authorities of the lower institutions would not apply formally for registration when they feared the loss of students, but by the system of registering in two groups students can receive credit for such work in medicine as can be accorded them and relieved from repeating the same in registered institutions.

The formal licensing examination is but one of the three essentials to a license to practice medicine in the State. The first essential is based on the principle that the student had completed his preparatory work prior to entrance on his professional, with the possibility of his being conditioned in not more than one year of the preliminary training, *which must be worked off before beginning the second course counted toward the degree.* This latter provision is a source of considerable friction in the administration of the law and is but little understood by the general public. Its wisdom, however, is plainly apparent in the development of this work.

The second essential, a degree from a registered professional school, is a marked step in advance of the requirements in foreign countries as it is well known that very few of the medical practitioners of Germany and Russia complete the requirements for a degree, the State's examination being regarded as even a higher qualification. Moreover, the determination of this requirement exacts careful attention to certain details. The four full years of medicine necessitates at least forty-five months of professional training; full years of medical training precludes an allowance to graduates of other cognate professional schools, such as dentistry, veterinary medicine, pharmacy, osteopathy, and the like, but the accuracy of this registration and the determination of secondary units of measure are leading to the possibility of recognition of work completed in kindred professional schools. It needs no argument to convince one that the graduate of a medical school having a four years' curriculum possesses training that can be accepted as a portion of the admission requirements to other professional schools. It is also apparent that if accurate definitions become available, work in professional schools of one character may be recognized in lieu of the same work in other schools of kindred na-

ture. For example, general chemistry, the foundation for the special chemistry in a medical school, should receive credit for the same general preparation for admission to the special chemistry of a pharmacy school.

The third essential is the formal written licensing examination, which is based on the former essentials and is the final act in the government's special care for the public good. The question of the use of English does not enter into the revision of the applicant's paper, although he is obliged to use the English language in his answers, for his mental training was determined by the first essential requirement. No effort is made by the formal written test to determine the clinical experience of an applicant, such requirement having been met under the second essential. The final test—the licensing examination—determines the competency of the candidate applying for admission to the *general* practice of medicine in the State, in order to protect the people against imposition.

The importance of these agreements can hardly be overestimated, and to show the marked advance of this step I quote from Bulletin 8, *Professional Education in the United States,* entitled, *Medicine,* issued January, 1900:—

"A uniform standard for admission throughout the United States is impracticable at present, owing to varying conditions as to density of population, educational advantages, and general development. Weak States cannot maintain the standards maintained elsewhere, and strong States cannot afford to lower their standards. The present need of less multiplication of standards, however, is most important. Instead of a separate standard for almost each political division, two or at most three standards should answer for all. In the first group should come the strongest States, and the standards maintained by these States would act as a stimulus to weaker political divisions."

From a careful consideration of the *synopsis* published in *Handbook* 9 of the education department, it plainly appears that reciprocity can become effective in the near future between a group of States extending from the Atlantic to the Pacific.

It can be said without fear of successful contradiction that to-day the New York statutory requirement for admission to the practice of medicine is clearly equal to the highest required by any state or government in the civilized world. While it may be said that the requirements for the state's examination in Prussia exacts higher preliminary and professional training, a recent communication from the Prussian authorities asserts that they are not obligatory on applicants for admission to the practice of medicine in Germany. While the requirements in Austria are plainly superior to those of other European countries, with the possible exception of France and Switzerland, the problem of notification has complicated the situation and the strained relations between Austria and Hungary have led to modifications that obscure the view. It is worthy of comment that the highest requirements for admission to the practice of medicine are found, not under monarchical governments, but under republican forms.

As to the future, the study and attention given to the problems involved in items reported above bid fair to receive final solution in the near future, and we look to the development in the present decade of preliminary requirements for admission to professional schools that shall equal the standards of Germany; professional training in higher institutions the full equivalent of that of Austria, Hungary, or Italy; the combination of university courses whereby the work required for degrees in arts and sciences, in medicine and like departments, shall be so coordinated as to require the least repetition and accord the highest recognition to all scientific work in these departments, which form the basis for the special work of the schools. An earnest effort is being made to so correlate the courses of instruction in elementary, secondary and higher institutions of the State as to save from one to two years' time in the life of the student attaining a combined baccalaureate and medical degree.

In closing, let it be said that New York State has little desire to exploit its standards and less to insist on other States being satisfied with these minimum requirements.

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ADVANCES IN THE SURGERY OF THE NERVOUS SYSTEM CONSIDERED FROM THE STANDPOINT OF THE NEUROLOGIST.*

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Some surgeons when writing upon this subject are wont to express their amazement at the truly marvelous advances which have been made in the surgery of the nervous system during the past one or two decades, and are given to expressions of admiration for the skill exhibited by members of their own craft, acknowledging, however, the debt they owe to their neurological brethren.

Neurologists, being no less generously inclined, while admitting the valuable services of the surgeon, are prone to subscribe to the views of the famous Roman physician Galen, who, in 200 A. D., expressed himself of the opinion that surgery is only a method of treatment and surgeons the instruments. The modern neurologist would go even a step farther and would carefully select the surgeon to do his operation. In these days of specialists, when surgeons limit themselves to operations upon certain portions of the body, it is a source of regret that the exclusive practice of surgery of the nervous system does not gain more advocates.

Most surgeons believe themselves capable of diagnosticating appendicitis, and of operating upon such a case. The pathology of the condition to them is, or should be, an open book. How many of the surgeons who operate upon the brain are capable of an accurate diagnosis, and how many know the pathology, to say nothing of the anatomy and physiology of the nervous system? And yet some surgeons never hesitate to act on their own initiative and without neurological assistance. It is this want of knowledge which has caused the pessimism of some

* Paper read before the Medical Society of the State of Pennsylvania, Bedford Springs, September 11-13, 1906.

surgeons and made possible the many atrocious operations of the past, and some which are practised even in the present day.

The surgeon should know at least enough of the anatomy, pathology, and physiology of the nervous system to give the patient falling into his hands the best chance possible for life and health; or he should seek the aid of the neurologist to this end. It must not be forgotten, however, that whatever progress was made in the surgery of the nervous system before 1860 we owe entirely to the surgeons, as the science of neurology up to this period was only in its infancy.

There is no more fascinating history than that of the surgery of the brain. It appears that trephining was practised by neolithic men, who inhabited Europe several thousand years ago.[1] They were supposed to have trephined principally for epilepsy and insanity. Most of the operations were performed on infants, and it is noteworthy that the majority of the holes found in the trephined skulls of that period were situated in the parietal region and over the motor area.

In the time of Hippocrates, 400 B. C., trephining was done mostly for injuries. From that period to modern times trephining passed through many epochs, sometimes falling into total disrepute, while in other periods it was the fashion to trephine the head at the slightest provocation. Thus, in 1664, the following curious certificate was written: "I, the underwritten, Philip, Count Nassau, hereby declare and testify that Mr. Henry Chadborn did trepan me in the skull twenty-seven times, and after that did cure me well and soundly." One wonders how the much-suffering Philip Count Nassau managed to survive these numerous operations in that day of no ether and sepsis.

Injuries of the head were recognized, and with the exception of antisepsis, were treated with just as much skill centuries ago as at present, the more frequent occurrence of racial wars with the use of battering instruments making fractures of the skull common. The teaching of Hippocrates, that in all wounds an incision of the scalp should be made and the bone exposed can certainly not be improved upon. He even advised that resections of the bone should not be made on the temples nor above the temporal artery, for convulsions on the opposite side would be set up.

It is hardly necessary to trace this interesting history of the surgery of injuries in more detail, yet a word concerning the work of Baron Larrey, Napoleon's eminent general surgeon, would not be out of place.[2] This physician insisted upon the necessity of enlarging, by incision and drainage, all punctured wounds, trephined for hæmorrhage of the middle meningeal artery, besides for depressed and comminuted fractures, or any other condition that caused depression of the skull, and recognized the value of drainage in preventing pressure in intracerebral hæmorrhage. Baron Larrey's knowledge of the symptoms of cerebral injuries was in advance of his time. He recognized that injuries of the cortex would impair the intellect, and more important still he knew the value of relieving brain pressure by trephining.

One who sees many instances of cerebral injury cannot but be amazed at the remarkable resistance of the brain to septic conditions and injury. Consider, for instance, the frequent operations practised by the ancients, especially by the socalled trepanists in the seventeenth century, as in the case previously mentioned in which the skull was trepanned twenty-seven times. In the coal regions of this State, in depressed fractures of the skull, coal dust nearly always infiltrates into the wound, and yet sepsis is very uncommon. In the celebrated "crowbar" case the man lived for several years. In our modern wars, bullet wounds of the head sometimes are not followed by pus. A remarkable instance was told me by my friend, Colonel W. W. Wotherspoon, U. S. Army. After a skirmish in the Philippine Islands, he came across a young native lying unconscious in a trench. The boy's head had been laid open by a bolo, the knife having split the bone deflecting it to one side and exposing considerable brain substance. He was removed to an army hospital, the bone replaced and in a short time the boy was seen hopping around and, except for a slight hemiparesis, was in excellent condition.

Since the work of Broca in 1861 and the suggestions of Hughlings Jackson in 1864, soon followed by the work of Fritsch and Hitzig, and of Ferrier, between 1870 and 1875, our views of localization have made great strides, and it is because of this that nervous surgery has reached its present high position. Our views of the pathology of the brain and cord have made equal advances, and it is the combined knowledge of the physiology and pathology of the nervous system which enables us to-day to say when and where to operate or not to operate.

It was not until 1884 that modern views of localization were put to actual test in a case of brain tumor, although previous to this time focal operations had been done for traumatic and other conditions. Durante deserves credit for having done the first successful operation for brain tumor. In May, 1884, he removed a fibrosarcoma from the frontal lobe, the patient, according to report, living three months after the operation and being in good condition. In this country, Hirschfelder and Morse, of San Francisco, were the first to operate for brain tumor, an attempt being made to remove a glioma from the motor area on February 15, 1886, this being the fifth tumor operation recorded.

It might not be out of place to refer briefly to those early surgeons and neurologists whose work made possible the present position of nervous surgery. Among the former stand out prominently the work of Macewen, Horsley, Bergmann, and Krause of Europe, and of Weir, Park, Roberts, Keen, and Hearn of this country. Of the neurologists besides those already mentioned, the achievements of Schäfer, Munk, Luciani, Mott, and later of Flechsig, and of Weir Mitchell, Seguin, Mills, Putnam, Dana, and Starr of this country will ever be a source of inspiration to the students in neurology.

In this country great activity circled around the meeting of the Congress of American Physicians and Surgeons in 1888, at which time cerebral localization and brain surgery were much discussed. Charles K. Mills, of Philadelphia; Victor Horsley

[1] The historical data were obtained from that admirable work of John Fletcher Horne on *Trephining in Its Ancient and Modern Aspects*. London, 1894, John Bale & Sons.

[2] *Johns Hopkins Medical Bulletin*, July, 1906. The achievements of Baron Larrey have been most interestingly written upon by J. Chalmers Da Costa.

and David Ferrier, of England; Park, of Buffalo; Starr, and Weir, of New York, and Keen, of Philadelphia, taking a leading part in the discussion. It was at this time that Dr. Mills advocated the view of separate motor and sensory localization, and placed the motor centres largely in front of the central fissure, being one of the first, if not the first, neurologist to advance such views. He was the first to subdivide the sensory areas into distinct centres, views which now, eighteen years after, are first becoming generally admitted. It is largely to the work and enthusiasm of this neurologist that we owe the present high position of American neurological surgery.

It is curious that it should not have occurred sooner to surgeons that large cranial openings were of advantage. It was not until 1889 that the osteoplastic method of resection was first employed by Wagner. It is no wonder that not only were tumors not removed, but also not discovered through the small trephine openings practiced before this time. To-day cranial openings exposing one third of the lateral surface of a hemisphere are made with ease and with practically no danger to the patient.

Although in the majority of instances the removal of a brain tumor is not accomplished, this fact should not deter surgeons from operating, for an exploratory operation is at least as much indicated on the skull as on the abdomen. Such an operation has a double advantage in that it relieves intracranial pressure, thereby not only ameliorating the immediate symptoms, but also relieving headache and often preventing blindness by lessening the severity of the choked discs. In fact, too much emphasis cannot be placed upon the advantages of an early exploratory, or so called palliative operation. It has always seemed to me that in these palliative operations which are presumably done for the relief of intracranial pressure, very little if any cerebrospinal fluid escapes. If this is so, whatever benefit arises from such an operation is not due so much to the escape of fluid, but it may be, as Horsley has long thought, to the interference with the nutrition of the growth or because of mechanical reasons. A tumor growing in any portion of the cranial cavity will necessarily increase the intracranial tension, this probably being first manifested at the point of growth, and as the tumor grows, in all parts of the brain. Because of this, the dura is stretched causing pain, and the optic chiasm is compressed, this resulting in choked disc. In an operation when the dura is incised, the brain bulges because of the increased pressure, and whatever benefit results is due to relief of intracranial tension by the opening made, and not by escape of cerebrospinal fluid. One can readily forgive the ancients for thinking that it was because of the escape of noxious fumes that benefit resulted. The value of palliative operations has long been recognized, although in a crude manner. Celsus, writing in 30 A. D., says he saw a "melancholy man wounded in the head with a sword, his brain pan broken; so long as the wound was open he was well, but when his wound was healed his dotage returned again. Guianerius cured a nobleman in Savoy by boring alone, leaving the hole open a month together, by means of which, after two years of melancholy and madness, he was delivered." Since the introduction of modern surgery palliative operations have, of course, been frequently done, but it seems curious that the latest advanced procedure should be boring the skull for diagnostic purposes, steel or platinum-iridium needles being used for the subsequent exploratory puncture. These have a cavity and groove at their edge and along their longitudinal axis so that tissue may lodge. By this means Pfeiffer[3] was able to recognize by microscopical examination of the delivered tissue the presence of tumor in ten patients out of the twenty which were examined.

Surgeons have attempted to remove tumors from almost every portion of the brain. Cerebellar growths, the removal of which only a few years ago was hardly thought of are now occasionally successfully attacked. In the recent Toronto meeting of the British Medical Association, Sir Victor Horsley stated that he had operated for pituitary lesions ten times. The extent and growth of cranial surgery can perhaps be estimated by quoting the statistics kindly furnished me by Dr. C. H. Frazier, of the work done by him in the last five years in the hospital of the university of Pennsylvania. Cerebral operations were performed thirty-eight times, twenty-two of these being done for tumor, and sixteen for epilepsy, and the cerebellum was operated on sixteen times.

It is only proper that some reference should be made to the work done by surgeons throughout this great State, work which although unrecorded, is worthy of being classed with the best. Your honored chairman, Dr. W. L. Estes, performed twenty-nine brain operations before 1895. Similar work has been done no doubt by other surgeons in every part of the State.

I shall not devote much time to the consideration of technique, for that properly concerns the surgeon. It seems, however, always advisable that both the surgeon and the neurologist should agree upon the method of operation, and that the neurologist should be present to give whatever aid he can, especially in regard to interference with the brain tissue itself. Needless handling is to be deplored, as is also puncturing the brain with anything but a sharp needle. Many operations are made fatal, not by the opening itself, but by the subsequent treatment. Whatever the instrument used for opening the skull, whether it be a dental engine, chisel and mallet, or a De Vilbis saw, the object is to open the skull quickly. I have seen the skull opened in little more than three minutes by means of a dental engine. Contrary to the opinion of some English surgeons, rapid cranial openings are of decided advantage, for they not only shorten the time for the anæsthesia, but the brain is subjected to less jarring, and again, why lengthen any operation when it can be done just as safely in shorter time.

So far my remarks have been confined only to the surgery of injuries and tumors of the brain. It has always been a source of chagrin to the neurologist that so little can be done to cure cerebral hæmorrhage. Dural and cortical hæmorrhages should, of course, be operated on, but it is hardly justifiable to cut into a brain in search of a subcortical hæmorrhage. Even should the hæmorrhage be found, the actual destruction of the brain sub-

[3] Pfeiffer, *Neurologisches Centralblatt.*, xxv, No. 13, page 639, July 1, 1906.

stance would counterbalance whatever questionable benefit would arise from the removal of a clot. Operations upon infants for the removal of dural or subdural hæmorrhages, as advised by Cushing, I would strongly indorse.

There is no more discouraging history than that of the surgery of epilepsy. Several thousand years ago, because of ignorance and superstition, the brain was exposed so as to allow the "demon in possession" to escape, as it was supposed that this caused the affection. Epilepsy was thought to be a sacred disease, and trephining was done as a sacred rite. Even at present exact knowledge of the disease is still wanting, and it is because of the various confusing theories advanced by as many different individuals that so many diverse operations have been practiced for the relief of this condition. To quote from Da Costa's paper on the *Surgical Treatment of Epilepsy:* "Various surgical methods of treatment have been recommended, including ovariotomy, clitorectomy, circumcision, nerve stretching and nerve section, orchidectomy, the removal of irritating scars and of painful cicatrices, blistering, cauterization, the use of seton, operations upon the ocular muscles to correct defects, the ligation of the vertebral arteries, the excision of the surgical sympathetic ganglion, and trephining of the skull." To this can be added various abdominal operations.

No one questions the advisability of operating in a case of epilepsy which is due to a definite cause, as an injury, hæmorrhage, or tumor, but to operate in cases of idiopathic epilepsy which have no discoverable focal basis either in the brain or in any other portion of the body, is to my mind a questionable procedure. In the first place, idiopathic epilepsy is an organic disease and is dependent upon structural developmental faults. These imperfections are not located in any one portion of the brain, as the motor area, but probably involve all parts. The epileptic convulsion is only the result of this maldevelopment; that is, only a symptom of a general disease. How futile, then, any focal brain operation!

Extracranial operations have been done and are still practised on the theory that toxines and other reflex causes occasion epilepsy. The surgical correction of ocular defects and the removal of nasal polyps may be an advisable procedure, but to ascribe these and similar defects as the causes of epilepsy is the veriest nonsense. Toxines unquestionably enter into the ætiology of the convulsion as a symptom; that is, given a structurally defective brain, it is necessary for a foreign element, perhaps a toxine, to bring on the convulsion; but there is no reason to believe that toxines themselves are the ultimate causes of epilepsy.

Much that has been said about the surgery of epilepsy can be equally applied to the surgery of idiocy, imbecility, and the various insane conditions. Fashions in surgery as in dress, have a habit of repeating themselves. As in epilepsy, the ancients believed that insanity and delirium were sacred diseases, or were due to the possession of the body and soul by demons and evil spirits, hence they opened heads to allow these to escape. Some modern surgeons open heads in insanity, idiocy, or imbecility to allow the brain to grow or to expand, believing that the growth or the function of the brain has been inhibited and that the opening of the skull will allow it to regain its proper size and function. The difference after all is not so great between the superstition of the ancients and the reasoning of some modern physicians.

The fault here, as in epilepsy, lies in the fact that symptoms are taken for the disease itself. Most insane conditions have an organic and, usually, an embryological basis, a view only recently expressed by Dr. Mills in the Toronto meeting of the British Medical Association, and one with which I am in accord. Idiocy, imbecility, and such insane conditions as dementia præcox, epileptic insanities, and paranoia are unquestionably due to developmental faults. With Dr. J. Chalmers Da Costa, I believe that operations for such cases do about as much good as attacking a thermometer for the purpose of regulating the existing temperature!

Some physicians believe in the advisability of operation for hypochondriacal delusions and for hallucinations. Delusions and hallucinations are only symptoms and are liable to change, as in one of Dr. Da Costa's cases, in which the patient believed that he had a kitten in his viscus. An emetic was applied and a cat was shown him in the bucket. The patient seemed satisfied, but within an hour he stated that he had something else in his stomach,—an eight day clock!

Not much advance has been made in the surgical treatment of hydrocephalus. It is difficult to understand how even permanent drainage of the lateral ventricles could cure the condition, presuming that such surgical procedure is successful. The secretion of the cerebrospinal fluid is probably the result of over action of the choroid plexus, and drainage will not stop further secretion. After the ventricles are thoroughly dilated it is difficult to understand what benefit could result from relieving them of the fluid which they must have. Altogether, I am of the opinion that operation on hydrocephalic conditions are contraindicated and that we have been laying too much stress upon the possible benefits of the relief of intracranial pressure, by the depletion of cerebrospinal fluid.

SURGERY OF THE SPINAL CORD.

It has only been in comparatively recent years that the spinal cord has been considered a fruitful field for surgical procedure, the first successful operation being performed by Horsley in a case with Gowers, of an intradural fibrosarcoma of the upper thoracic region. The growth was removed, June 9, 1887. Ten years elapsed before the second successful operation was performed by Freeman in a case with Eskridge, in 1887, in this country. Since then spinal operations have become more frequent. There is every reason that such operations should be successful, for our knowledge of spinal localization is fairly exact, at least more so than that of the brain.

Spinal tumors, if not multiple, are as a rule easy to enucleate and are benign; one of the most successful operations I know of was performed by Edward Martin in a case of J. H. Musser and W. G. Spiller, an intradural cyst being found and removed.

One of the most difficult questions to decide is the

advisability of operations in cases of fracture and dislocation, and spinal injury. As a rule, if there is a fracture and dislocation the spinal cord has been severely crushed, and even though pressure is removed the cord will not be benefited. Of course, it is good surgery to reduce a fracture and replace a dislocation, but to my mind the dangers of sepsis and the fact that no regeneration can occur in the spinal cord, contraindicate surgical interference, at least in the more severe cases. In spinal injuries in which there is no fracture or dislocation, hæmorrhage may occur either in the centre of the cord or in minute areas throughout its whole extent. Here an operation would be of no value. In the first place, it is impossible to get at the hæmorrhage, and again, if the spinal cord is left alone, if any recovery is possible outside interference will be only detrimental.

It has been thought by some surgeons that in cases of complete severance of the spinal cord, suturing of the ends may cause regeneration and a consequent return of power. This, to neurologists who are aware of the fact that regeneration does not occur in the spinal cord, seems an error. Experiments upon lower animals have proved that this is impossible. After a spinal cord is completely severed it would be rather difficult to approximate crushed ends. Even if this were successfully done, so much tissue would be destroyed on either side that regeneration, were it possible, could hardly proceed.

When lumbar puncture was first introduced it was hailed with much enthusiasm, but, unfortunately, we have learned that it is a dangerous procedure and of not much benefit. The reason is that as in the cranial palliative operations, the actual removal of the cerebrospinal fluid, while it may temporarily relieve pressure, is of no value in either curing or ameliorating the original cause of this excess of tension. The danger of the operation lies in the sudden disturbance of pressure, and it is possible that the sudden deaths recorded as the result of this operation may be due to the disturbance of circulation in the bulb. Lumbar puncture for diagnostic purposes is, however, sometimes justifiable.

The value of the Röntgen ray for diagnostic purposes in nervous affections has also proved disappointing. Many claims have been made for it, but so far it would be unwise to risk a diagnosis upon its indications. It is only a question of time, however, when the technique of x-ray work will be so far advanced that great aid will be given to focal diagnosis. In the recent Boston meeting of the American Medical Association, Dr. Edward Angell, of Rochester, New York, exhibited a new stereoscopic apparatus by means of which the outlines of cranial lesions could be most clearly seen.

SURGERY OF PERIPHERAL NERVES AND MUSCLES.

Perhaps more progress has been made in the surgical treatment of peripheral palsies during the last decade than in the other branches of nervous surgery. Barely eleven years have elapsed since Ballance and Stewart, of England, joined the facial nerve to the spinal accessory for the relief of facial palsy, this being the first instance of nerve grafting performed on man. Since then, nerve anastomosis has been done in cases of anterior poliomyelitis, hemiplegia, for the relief of athetosis, and in many instances of palsies of peripheral nerves.

That regeneration of peripheral nerves is possible was known in 1795 by Cruikshank, who was apparently the first to recognize that severed nerves could grow together, although this honor has been usually given to Flourens. It seems curious that these experiments should have been so long forgotten, and that its principles should not have been applied until just one hundred years after their discovery.

It was not until the work of S. Weir Mitchell, Geo. R. Morehouse, and W. W. Keen, appeared in 1864 that the surgery of peripheral nerves was placed upon a fundamental basis. Later, Weir Mitchell published a separate volume on the peripheral nerves. Many of the descriptions of nerve palsies found in this admirable book can even at this date not be improved upon. His description of the first case of sympathetic paralysis ever recorded is classic.

Neurectomy and nerve stretching have been done for many years for the relief of neuralgias, and for neuritis, and have even been done for the relief of the contractures in cerebral and spinal palsies. Happily, nerve stretching is largely being abandoned as a therapeutical measure. In a disease like sciatica it is difficult to understand how stretching the nerve will relieve the pain any more than stretching the fifth nerve will relieve tic douloureux; as in the latter disease it might be a justifiable procedure to cut the sensory roots in the spinal cord for the relief of sciatica.

It is not my purpose to dwell at any length on the principles of nerve regeneration. Whether the central or the peripheral theory is accepted, the important factor is that regeneration will take place between the cut ends of a peripheral nerve unless mechanical means are taken to prevent such union. I will also leave it for the surgeon to decide whether end to end anastomosis is preferable to end to side, or other methods. I shall only speak of the therapeutical application of nerve transplantation.

In facial paralysis the result of an ordinary cold in which no improvement has taken place for six months, in palsies, the result of middle ear disease, or in cases of accidental severance, suturing of the ends in the latter case or anastomosis with the hypoglossal or the spinal accessory nerve is clearly indicated. This operation should also be considered in spasmodic facial tic. Peckham, of Providence, was the first to do nerve anastomosis in anterior poliomyelitis, in 1899. Independently of this, Spiller, in 1902, recommended this operation, it being successfully performed by J. K. Young. Later Spiller applied the principles of nerve anastomosis in hemiplegia and in a case of athetosis, in which brilliant results were obtained by Frazier.

In considering the surgical means to be employed for the cure of peripheral palsies, tendon transplantation must not be overlooked. As a therapeutical measure it was first introduced in 1881 by Nicoladoni. Parrish, of New York, deserves credit for having been the first American to perform this operation, in 1892. Great advances were made by Goldthwait, of Boston, who, in 1895, was the first to do muscle transplantation, and by Lange, of

Munich, who first advocated suturing tendons to the periosteum.

In choosing between the two operations, nerve transplantation is obviously more advantageous, because by this means function would be restored to the paralyzed muscles. As in all new operations much discouragement will at first result, because in almost all cases of palsy such therapeutical measures will be considered, whereas in only certain selected cases can good results be expected.

In an address on the surgery of the nervous system reference must be made to the surgery of tic douloureux. This malady, which, according to Cushing, was accurately described by Avicenna about nine hundred years ago, has baffled successful treatment even up to the present. This is because even now its pathology is not understood. We do know that by cutting all connection between the peripheral ends of the trigeminus and the pons, either by extirpating the ganglion of Gasser or by cutting its sensory root, the pain will cease.

Many operations have been proposed and done for the relief of this condition. The seventh nerve has been cut, the peripheral branches have been excised, or stretched, but it was not until 1890 that Macewen and Horsley, independently of each other, attempted to divide the trigemineal nerve intercranially. Rose, of England, soon after first attempted to remove the Gasserian ganglion. This operation, which at first was nearly always fatal, is now performed without much loss of blood and with success. Only recently (1904) Cushing reported twenty cases, and he writes me that since then he has had a second twenty with much better results.

After the medical treatment of tic douloureux has proved unavailing, it is a safe rule to first consider such peripheral operations as neurectomy, except in the more severe cases in which it is advisable to perform a major operation at once. Recently, Murphy, of Chicago, has recommended exposure of the peripheral nerves with injection of osmic acid into its sheath.

Of the more radical operations, mention should be made of the suggestions of Van Gehuchten, that the peripheral branches should be torn out, believing that this has a reactionary effect on the nerve cells in the ganglion, not only destroying these but also causing degeneration of its bulbospinal root. This operation was originally suggested by Blum in 1881. Abbe advised intracranial section of the second and third divisions of the trigemineal nerves. None of these operations, however, have been sufficiently done to pronounce judgment. The operation of choice is either removing the ganglion of Gasser, or cutting its sensory root. On physiological grounds, the latter operation is to be preferred, providing, of course, that regeneration does not occur, a fact which has now been established. This operation was first suggested by Ferrier, in 1890, in the discussion of Rose's operation, and was first performed by Horsley, although the operation was not done with this definite object in view. Spiller, in 1898, again suggested it, this operation being then undertaken by Frazier in 1901, it being the first time that the sensory root was successfully cut, the pain ceasing entirely.

In conclusion, when we consider that most of the advances in neurological surgery have been made in the last twenty years, and not a few of these in the last decade, we cannot but feel that there is much hope for still greater advances in the near future. As regards the surgery of the brain, these advances will probably come in the first place through our slowly increasing knowledge of subdivisional cortical localization and through improvements in the methods of opening and exploring the cranial cavity. What has been recently done in nerve anastomosis forecasts more brilliant achievements.

In closing, I cannot refrain from referring to the great influence for good which such combined meetings as those of the surgical and neurological sections of the American Medical Association, and the sections of this society have exercised by bringing together men in different but correlated lines of work.

2030 CHESTNUT STREET.

NOTES ON RECENT ADVANCES IN LARYNGOLOGY AND RHINOLOGY.*

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During the past year various topics related to laryngology have engaged attention, yet it cannot be said that any very startling results have been achieved. The study of the accessory nasal sinuses has been most fruitful. Between absolute neglect and the meddlesome spirit that prompts the opening of every suspected cavity, there is a golden mean of conservatism toward which we are happily tending. The belief is gaining ground that given free drainage, supplemented by careful detergent irrigation, Nature may be safely trusted to accomplish a cure in a large proportion of cases of sinus empyema. The fact is also recognized that in some of the cases resisting expectant treatment and becoming distinctly chronic, a constitutional diathesis, syphilis, tuberculosis, etc., may be an underlying factor. In this connection several interesting examples have been recently reported.[1]

In view of the considerable disfigurement involved in a very extensive radical operation on the frontal sinus it is quite natural that the search for improved methods of treating this cavity has been especially active. Killian's plan to preserve a supporting bridge of bone along the eyebrow is excellent from a cosmetic standpoint. In a sinus of small or moderate dimensions hardly a trace of the operation is finally perceptible. In a certain proportion of cases, notwithstanding the utmost care and thoroughness in all details of the operation and the after treatment, success is incomplete or reinfection takes place. Hence a revival of interest in endonasal methods of attack. The cause of a practical abandonment of the nasal route may be found in the emphasis with which we have been warned of the risks attending attempts to approach the sinus through the nose. These risks are undeniable, but still may be avoided. It is of the first importance to determine that the instrument used for traversing the nasofrontal canal has effected an entrance into

* Read at the annual meeting of the American Therapeutic Society, May, 1906.

[1] Abraham, *Medical Record*, March 3, 1906. Logan, *Laryngoscope*, August, 1905. Chauveau, *Archives internationales de laryngologie, rhinologie, et otologie*, xix, No. 2, 1905.

the sinus. The direction taken and the distance passed by the exploring probe combine to settle the question, and, if desired, confirmation may be obtained by use of the x ray, as shown very clearly by Onodi[2] and others.

The proper position of the probe having been demonstrated, it may be used as a pilot for the passage of a trephine. Thus the duct may be enlarged to the desired limit without danger of invading the orbit or the cerebral fossa. This mode of entering the frontal sinus has been recently elaborated by Ingals, who has devised several useful instruments, among them a "pilot burr," operated by an electric motor, for enlarging the canal, and a self-retaining drainage tube through which irrigation may be practised. His measurements and directions afford very definite guidance to one undertaking this method, which he recommends in "practically all cases of suppuration of the frontal sinus in which a probe can be passed from the nares into this cavity."[3] Its chief advantage is that it avoids an external scar. It certainly seems to be safer than other intranasal methods which have been proposed; it ensures drainage, and the process of cleansing can be performed by the patient himself. In case of advanced degeneration of the mucous lining of the cavity or of disease of its bony wall nothing more than palliation of subjective symptoms can be expected, and an external operation offers the only chance for radical cure. In his recent work on *Nose and Throat Surgery* Beaman Douglass reiterates certain objections to an intranasal operation and expresses the belief that any operation looking to enlargement of the nasofrontal duct is unjustifiable, dangerous, and uncertain. He would restrict surgical interference by way of the nose to middle turbinectomy, removal of the uncinate process, removal of diseased tissue from the region of the middle meatus, and irrigation of the sinus. He is especially apprehensive of entering the cerebral fossa by perforating the cribriform plate through the olfactory fissure, or the posterior wall of the sinus, as the drill or trephine projects beyond the upper end of the nasofrontal duct. By closely observing the indications laid down by Ingals it would seem possible to escape these accidents. Attention is drawn by Mosher to an anomaly of the cribriform plate, whereby the venous radical of the superior longitudinal sinus is brought into close proximity to the upper end of the duct and might be injured.[4] This state of things is so rare as hardly to deserve consideration.

Among external operations of present interest the "open" method recently advocated by Coakley[5] is extremely promising. Its chief feature is obliteration of the sinus cavity, the possibility of reinfection being thus prevented. It differs in no essential from the method described by Holbrook Curtis and illustrated by three very successful cases at a meeting of the Section in Laryngology of the Academy in May, 1902.[6] The anterior bony wall having been removed, more or less deformity results according to the dimensions of the sinus and the freedom with which granulation tissue fills the void. This operation resembles in some particulars that of Kuhnt, in which the whole anterior wall of the sinus is removed, the ethmoid cells are opened, the frontonasal canal is enlarged, the external wound closed by sutures, and drainage effected by way of the nose. In the open operation the external wound is *not* closed and the sinus cavity is packed with gauze so as to stimulate the growth of granulations and cut off communication with the nasal fossæ. Success in one hundred and four cases, cited by Coakley, has been noteworthy. It may be said that only one of these was in any respect a failure, an insignificant fistula persisting at the site of the wound. Three criticisms may be offered to this method, which after all seem rather unimportant in view of the ultimate results: First, the frequent repacking required is a source of some discomfort; second, the period of convalescence is quite protracted; and third, with a sinus of large size and if the granulating process is deficient, deformity may be conspicuous. In case of extreme depression over the bone defect a remedy for the latter may be found in subcutaneous paraffin injections. An impediment met with in this connection is extensive cicatricial adhesion[7] which cannot be disturbed without risk to the nutrition of the integument. In some frontal sinus cases surprisingly little deformity results, even after removal of nearly all of the floor and the anterior wall, owing to filling of the gap to a large degree by adipose tissue. In a case reported by Curtis a most satisfactory result was secured by dissecting out a disfiguring scar, inserting in the depression a "paraffin cast" and drawing over it a flap of integument.[8]

Although fatal cases of sinus suppuration are comparatively infrequent, more or less peril exists, unless perfect drainage can be secured. Anomalies within the sinus, in its outlet, or in the nasal fossa, may be insurmountable, and an external operation is the only alternative.

The bacteriological and clinical studies of sinus suppuration recently made by Lewis and Logan Turner have brought out some interesting points.[9] They show that virulent organisms are more numerous in recent than in old cases; that cases of recent uncomplicated maxillary sinusitis yield more readily to lavage than do those of long standing; that healthy sinuses are probably sterile; that occasionally bacilli characteristic of dental caries are found in antral pus; that antral infection usually takes place by way of the nose; that polypi develop more often with multiple sinusitis than with antral abscess alone, and especially with ethmoid disease. These include the more important of their results.

The experiments of Menzel with reference to the feasibility of forcing fluid from the antrum into the frontal sinus and the ethmoidal cells have a bearing on the question of transference of infection. In normal anatomical relations injected fluid was found to pass only into the nasal cavity, not entering adjacent cells.[10]

But few procedures in rhinology have excited so much interest and been so widely adopted as submucous resection of the nasal sæptum for deviation,

[2] *Atlas der Nebenhöhlen*, Wien, 1905.
[3] *Laryngoscope*, August, 1905.
[4] *Laryngoscope*, October, 1905. See also *Boston Medical and Surgical Journal*, September 7, 1905, and paper by Coffin, *American Journal of Medical Sciences*, February, 1905.
[5] *Laryngoscope*, August. 1905.
[6] *Laryngoscope*, July, 1902.
[7] Myles, *Laryngoscope*, March, 1905.
[8] *Laryngoscope*, March, 1906.
[9] *Edinburgh Medical Journal*, November, 1905.
[10] *Archiv für Laryngologie*, etc., xvii, No. 31.

first brought into prominence by Krieg, of Stuttgart, and called by him the "window resection" operation. The industry of his imitators is evidenced by the long list of instruments devised for use in this connection. Most of them seem to gratify a whim of their designers rather than to meet a demand created by any special difficulties in the operation. Manipulations are much simplified by using as few tools as possible. The essentials seem to be a nasal speculum, a scalpel, a sharp and a blunt elevator, a sharp curette, a mouse tooth forceps, and a punch forceps or sæptum knife. The endless modifications of the foregoing instruments are most bewildering.

It must be confessed that deviation of the nasal sæptum has hitherto been the *bête noire* of rhinology. No operation thus far suggested has given ideal or even uniformly good results. When submucous resection was proposed, it was feared that the substitution of a membranous for a bony and cartilaginous sæptum might jeopardize the contour of the external nose. Indeed, several disasters have been reported, due perhaps to excessive sacrifice of the hard parts, or to the existence of some constitutional diathesis in the patient. Under the latter condition it is best, as a rule, to abstain from nasal surgery, and it has been found that the shape of the nose is not threatened, provided a wide band of cartilage be preserved anteriorly along the dorsum. There is no question as to the inadvisability of operating upon an individual in the active stage of syphilis. In the early stage of tuberculosis, if nasal stenosis be extreme, surgical interference is permissible or positively indicated.[11]

This mode of operating seems to be available in all forms of deviation, and the ultimate results are almost invariably satisfactory. In some cases there appears to be a degree of reproduction of cartilage from the saved mucoperichondrium. A point of more importance is that the function of the mucous membrane is retained, and no annoyance is suffered from incrustation of secretion so common when ablation of the membrane together with the cartilage has been done.

Patience and fortitude are qualities required of both surgeon and patient. In some cases the mucous membrane is readily released; in others adhesions are so firm that a careful and tedious dissection must be made. Plenty of time should be given to applying cocaine and adrenalin in order to secure perfect anæsthesia and ischæmia. Mild solutions of cocaine (four per cent.) have been found adequate. Buttonholing the sæptum may occur, especially if the mucous membrane is adherent, but no very serious consequences follow.

A rather annoying accident sometimes happens in the form of hæmorrhage into the submucous pocket. The effused blood may be absorbed or may suppurate, when the case must be treated as one of abscess of the sæptum, namely by incision, drainage, and irrigation. This may be obviated by giving proper support to the membranous folds by tampons of sterilized gauze, or by nasal tubes of vulcanite or soft rubber placed in either nostril. As a rule a single oblique incision gives ample space for exposure of the cartilage and no sutures are necessary. Under favorable conditions and with a tractable patient there is no question that in submucous resection of a deviated sæptum we have an operation far in advance of any thus far proposed. The objection often offered that the time required for its completion subjects the patient to excessive nervous strain will disappear as the surgeon becomes more expert, and the surgical shock is certainly not comparable with that sustained in many sæptal operations under general anæsthesia. The latter may be necessary in extremely nervous subjects and in children, but it is doubtful whether any operation on the sæptum should be undertaken during the formative period of life, unless the need of relieving nasal stenosis be urgent.[12]

The sentiment expressed in the preceding paragraph as to interfering with the sæptum in early life is evidently not universally shared, since Sluder, of St. Louis, now comes forward with an operation especially adapted to children.[13] Three cuts are made clean through the sæptum parallel with each other and with the long axis of the deviation; one at its apex, and the others at the limits of the deformity. Thus the sæptum is converted into two bands attached by their extremities. These bands may be pushed to the middle line or beyond, overlapping as they gain a vertical position, where they are held by a plug of gauze or cotton, or preferably an Asch tube splint. Irregularities and thickenings may be smoothed down, if necessary, six months or a year later. This procedure calls to mind the V shaped operation, suggested several years ago by Kyle. The latter has two advantages, namely the sæptum is not cut through, especially if Fetterolf's file saw be used in cutting away the wedges and there is no overlapping and consequent redundancy.

Interest in paraffin prosthesis seems to be slightly waning, still at intervals successful cases appear. An experience reported by Uhthoff,[14] similar to several others on record, in which total blindness followed a paraffin embolism of the central artery of the retina, repeats a timely warning. By some authorities thrombosis of the ophthalmic vein, or diffusion of the paraffin into the orbit are assigned as causes of this disaster. In another case by the same author several months after an injection for saddle nose a deposit of paraffin took place in the eyelids to a degree sufficient to occlude vision. The accident was caused by prolonged exposure to the rays of the sun. Sight was restored by dissecting from the lids in several sittings the displaced masses of paraffin. The special lesson enforced by these episodes is the necessity of using paraffin of high melting point.

With this idea in mind Broeckaert devised an "automatic lever syringe" for use with cold paraffin (45°C.), more particularly submucously in atrophic rhinitis. He declares that his instrument is no better than others for subcutaneous use, since here we must have a fusion point of about 50°C., cold paraffin not lending itself readily to molding. This writer protests against indiscriminate use of

[11] Levy, *Laryngoscope*, March, 1906.

[12] Contributions to the literature of this subject by White (*Boston Medical and Surgical Journal*, October 12, 1905); Yankauer (*Laryngoscope*, June, 1905); Hurd (*Medical Record*, November 25, 1905); Freer (*Journal of the American Medical Association*, September 30, 1905); Ballenger (*Annales of Otology, Rhinology, and Laryngology*, June, 1905), and Claoué (*Archives internationales de laryngologie*, etc., xx, No. 4) contain suggestions of value.

[13] *Laryngoscope*, March, 1906.

[14] *Berliner klinische Wochenschrift*, 1905, November 20, No. 47.

the injections. In those difficult "saddle nose" cases, complicated by cicatricial adhesions, good results may be obtained by separating adhesions and placing paraffin in the pocket thus formed, or by a combination of autoplastic operation and paraffin injection. Precise details in the use of the syringe are given, and it is asserted that the method by cold injection of the shrunken turbinate bodies is incomparably superior to any other in nasal atrophy. This position is fortified by reference to various other authorities.[15]

Zaalberg, of Amsterdam, reports sixty cases of atrophy treated by this method, of which twenty patients were cured, thirty-five were improved, and five cases were failures. The middle turbinate was in some the site of injection without complication in spite of apprehension as to meningeal irritation; no results were obtained when the sæptum was chosen. A cure is claimed when fœtor disappears and crust formation ceases. It is interesting to note that in several cases complicated by sinus suppuration ozæna subsided while the sinus discharge persisted. Thus Grünwald's theory that "ozæna" is due to sinus suppuration is disproved. In six cases of advanced atrophy Burger met with no success, the tissues being so bound down that it was difficult to introduce the needle. In a considerable proportion of his cases Broeckaert encountered a thrombophlebitis of the facial vein following the injection. He suggests that this accident may be avoided (a) by injecting a small quantity at one time, (b) by using little force, and (c) by employing paraffin with a melting point about 55°C. and beginning the injections at the posterior end of the turbinate.[16]

One of the most enthusiastic advocates of this procedure is Melzi,[17] of Milan who has obtained equal results by no other method. He refers to the obstacle to its use in advanced cases and warns against the preliminary application of cocaine, as being unnecessary and as increasing the preexisting retraction of tissue and thus adding to the difficulty of inserting the needle. A recent substitute for cocaine, alypin, is free from this objection. Whether the effects observed are due to stimulation of a reparative process, as stated by Moure and others,[18] or are merely a result of mechanical restoration of the normal caliber of the nares, or a combination of these factors, there seems to be no question that the subjective symptoms of atrophy are mitigated in many and dispelled in some cases.[18]

Broeckaert has also made some observations as to the fate of the injected paraffin.[19] He maintains that paraffin of high melting point becomes encysted, that of low melting point becomes enmeshed in a network of blood vessels and connective tissue. On the contrary, Kirschner finds that soft paraffin finally undergoes complete absorption, being sometimes replaced by more or less connective tissue. Hard paraffin, the encapsulation of which has been generally admitted, was also found to disappear in time by absorption, the mass being slowly invaded by connective tissue and giant cells.[20] The fact of absorption of the paraffin and its replacement by connective tissue has been confirmed by Eschweiler.[21] If these conclusions are reliable, complete correction of a deformity can hardly be permanent. The volume of new tissue is not likely to equal that of the paraffin, and moreover it is subject to more or less contraction.

In striking contradiction of the foregoing stand the observations of Walker Downie.[22] His cases, examined as late as four years after operation, showed the paraffin unchanged in volume and still occupying its original situation. He is very decided in his opinion that no absorption takes place. He uses paraffin with a melting point of 106° to 108°F., which undergoes subdivision on its introduction and becomes intimately incorporated with the tissues. It is difficult to reconcile these conflicting views, one based on microscopical evidence and the other on clinical experience.

In connection with atrophy the experiments of Iglauer with saliva are interesting, although it is doubtful if his expedient will be generally adopted.[23] He perforates the hard palate and conveys the buccal secretion to the nasal fossa through a permanent tube (oronasal canula) in the roof of the mouth. In view of the offensiveness of this disease and of the rather unsatisfactory status of its therapy a few may be tempted to resort to this mode of treatment. A short cut offers certain advantages in some conditions, but in this it would seem that a roundabout course might be equally efficacious with less disturbance of the patient's anatomy; for example, tampons of cotton moistened with saliva and passed into the anterior nares.[24] Mucin, locally and internally, as recommended by Stuart Low, is regarded with favor by some and indifferently by others.[25] Negative pressure by suction is advised as a curative measure in atrophy by Sonderman.[26] The hyperæmia thus promoted is supposed to favor restoration of function. It is difficult to understand how one can reasonably expect to reanimate defunct glandular tissue by this or any other method, and we fear that extreme cases of atrophy must still be looked upon as incurable.

Revival of interest in the intranasal use of the galvano-cautery is manifest. Kopetsky would limit its use to submucous application by means of a sharp pointed electrode.[27] An identical plan was described by Schweig many years ago at a meeting of the Section in Laryngology of the Academy. Anderson dilates upon the supposed disadvantages of the cautery, and recommends submucous puncture of an intumescent inferior turbinate by means of a cataract knife, some of the blood vessels being divided and becoming obliterated by the resultant cicatricial tissue.[28] A similar idea was proposed by Delavan at a meeting of the American Laryngological Association in 1897.

Thus we shall often be disappointed to find that a contemplated offering to our colleagues has been anticipated.

As to the cautery, no doubt it has been misused, but that is no reason for discarding it altogether. It has a legitimate field in cases in which hæmorrhage is to be feared, in individuals who refuse a

[15] *International Clinics*, iii, 1905.
[16] *Archives internationales de laryngologie*, etc., xix, No. 2.
[17] *Ibidem*, xix, No. 3.
[18] *Revue hebdomadaire de laryngologie*, 1903, No. 41.
[19] *Ibidem*, August 19, 1905.
[20] *Virchow's Archiv*, clxxii.
[21] *Archiv für Laryngologie*, etc., xvii, part 7.
[22] *Journal of Laryngology*, March, 1906.
[23] *Laryngoscope*, November, 1905.
[24] Fitzgerald, quoted by Harris, *Laryngoscope*, March, 1905.
[25] Newcomb, *Laryngoscope*, March, 1905.
[26] *Archiv für Laryngologie*, etc., xvii, H. 3.
[27] *Laryngoscope*, October, 1905.
[28] *Laryngoscope*, June, 1905.

cutting operation, and in certain hyperplasias in which function has been obviously destroyed and preservation of the membrane is not worth while.

Hope of the efficacy of the x ray, and radiotherapy, in malignant disease of the air passages has not been abandoned, and we read of many cases in which they have been tried, in some with apparent success. The latter were nearly all superficial and in the early stage, and in a certain proportion there is a reasonable doubt of the diagnosis. The words quoted by R. H. Woods in a recent presidential address before the British Laryngological, Rhinological, and Otological Association are applicable here: "You know, you can cure any disease if you only make a wrong diagnosis."[29]

No marked advances have been made in this line, the old difficulties still prevail, and errors in diagnosis continue to be inevitable. A case described as well developed carcinoma of the velum palati is said by Perugia to have been cured in five months by radium.[30] A rare case of primary epithelioma of the palate is reported by Harmon Smith, in which two recurrences took place within six months. The third operation was so extensive that if another relapse is shown, the use of Piffard's high frequency current, or the ultra violet ray, will be considered.[31] In a case reported by Harris of supposed sarcoma of the tonsil very marked results followed use of the x ray. Several relapses yielded promptly to the applications, but it does not appear that the diagnosis was confirmed by the microscope.[32] On the other hand, a malignant tumor of the tonsil treated with radium by Freudenthal, instead of subsiding began to extend after a few sittings. This observer has met with similar results in several cases of tuberculous laryngitis, the increase in the tuberculous infiltration being decidedly stimulated by the radium. In one of the latter the subjective symptoms, pain, etc., were much ameliorated.[33] In his recent book on *Radiotherapy* (1905) Belot mentions three cases of cancer of the larynx relieved or cured. One of these improved, but died of Bright's disease; the second is a notorious case of error in diagnosis; while in the third there was no microscopical confirmation of the diagnosis. With this author we may admit that in some way the tissues within the larynx are influenced by irradiation from without, but it remains to be proved that cancer can thus be cured.

There is no more striking commentary on the unsatisfactory state of the therapeutics of laryngeal tuberculosis than the variety of new remedies suggested and the frequent reversion to methods long since tried and abandoned. It may be that the discouraging record is partly due to failure to select suitable cases for local treatment. There can be no question that extensive ulceration of an area of deep infiltration, especially with coincident active pulmonary lesion, or in a subject of low vitality, is not a favorable condition. We hear a good deal about treating laryngeal tuberculosis on surgical principles, but in the larynx we are confronted by a very different problem, than in the case of a tuberculous joint, or a collection of diseased glands which can be thoroughly exposed. In the larynx, if the idea is to be carried to its logical conclusion, total extirpation would be in many cases the only legitimate procedure. This has been seriously proposed, possibly as contributing to euthanasia rather than with hope of cure. Yet in at least one situation the latter alternative is within reach. Disease limited to the epiglottis may be eradicated, so far as the larynx is concerned, by amputation of that appendage. No inconvenience results as regards deglutition, but on the contrary odynophagia, often a prominent symptom in lesions of the epiglottis, is at once relieved, and a serious obstacle to nutrition removed. The contraindications to endolaryngeal surgery are thus enumerated by Krieg:[34] Pronounced cachexia; miliary tuberculosis; extreme stenosis, requiring tracheotomy; diffuse infiltration, involving the whole larynx. He narrates many cases in which suffering was relieved and life prolonged by judicious local treatment.

In a series of six observations by Bourack the treatment by curetting, lactic acid rubbings, and inhalations of mentholized oil, urged by Krause, Heryng, and others, is vigorously sustained.[35] After reading the details of these histories one is convinced that Russian patients far surpass those of this country in fortitude and confidence. The objections to this method met with here may be summarized as follows: (a) The difficulty of keeping a clear operative field during the curetting so as to determine the limits of tuberculous deposit; (b) extreme postoperative pain from the lactic acid after cocaine effects have passed away; (c) tendency of cicatrices to break down after a few weeks or months, so that a cure is not permanent. The inference is that it is adapted to a very limited number of cases whose morale and general condition are good and whose local lesion is accessible and circumscribed.

About twenty-five years ago tracheotomy was advocated by Moritz Schmidt in the treatment of tuberculosis of the larynx. The theory that the rest thus given the larynx by diverting the air current would assist the action of local remedies and favor repair has not been substantiated in practice. On the contrary, the tracheal canula simply adds another discomfort to the patient's miseries, and few if any supporters of this measure now remain. Within the past year, however, laryngofissure has been again urged by Hansberg, especially when the larynx cannot be reached through the mouth, and when the lung disease is limited or quiescent.[36] The operation is done in two stages under local anæsthesia, an interval of eight days being allowed between a high tracheotomy and the laryngotomy. Thus the affected regions may be thoroughly exposed for removal, and the risks usually attending general anæsthesia are practically abolished. Three cases are narrated which appear to justify the procedure, and the author insists strongly upon restricting employment of the method to proper cases, the extent of disease in the larynx apparently being a matter of less consequence than favoring pulmonary and general conditions. Next in importance,

[29] *Journal of Laryngology*, January, 1906.
[30] *Revue hebdomadaire de laryngologie*, etc., May 6, 1905.
[31] *Laryngoscope*, March, 1905.
[32] *Laryngoscope*, March, 1906.
[33] *Laryngoscope*, March, 1905.
[34] *Archiv für Laryngologie*, etc., xvii, 3, 1904.
[35] *Archives internationales de laryngologie*, etc., xix, No. 1, 1905.
[36] *Archives internationales de laryngologie*, etc., xx, No. 5, 1905. In 1904 Stein, of Chicago, found on record thirty-eight cases of thyreotomy for tuberculosis.

and indeed essential to success, are the preliminary tracheotomy and the local anæsthesia. It is doubtful if many of us have yet reached the point of being willing to advise our patients to submit to this rather formidable operation in the early stages of tuberculosis, with the possibility of a mistaken diagnosis, or with a prospect of spontaneous cure or arrest of the laryngeal lesion, or of such slow progress that the victim is assured many years of comparative comfort.

It is remarkable that so little attention has been given in this country to phototherapy in tuberculosis of the larynx. Freudenthal's studies of the effect of electric light have been conducted with great care and patience, but few if any have done much with natural light. In an interesting article Ferreri, after noting the failure of surgical measures and tuberculin, says a few earnest words in favor of tracheotomy, and cites a case in point.[37] The body of this paper is given to phototherapy and a description of an apparatus for supplying the ultra violet rays. Prolonged sittings (thirty minutes) were followed by no reaction, save slight roughness of the voice and sore throat. An unusual case is recited in which the patient had, besides his laryngeal trouble, what was supposed to be Dupuytren's contraction of the palm of the left hand. The writer is convinced that the latter was in reality a tuberculous tendinous synovitis, since it disappeared under the influence of the light at the same time that the larynx yielded to treatment. He disclaims any intention of drawing conclusions from his single case, but evidently has great faith in the virtue of light. It is the opinion of Winckler that the x ray is more effective in lesions of the anterior and lateral walls of the larynx than elsewhere.[38] In eleven cases he found no ground for extraordinary expectations, although in some a marked analgesic effect was observed.

The effect of the rays of the sun reflected upon a tuberculous lesion in the larynx seems to have been first carefully studied by Sorgo.[39] His conclusions are in the main confirmed by Kunwald,[40] who uses an ordinary laryngoscopic mirror instead of the apparatus of the former for projecting the light. The most rapid improvement is found to take place with infiltrations. Ulcerations of the vocal bands yield more slowly. Œdema is regarded as a positive contraindication, nearly all cases of this nature being aggravated by treatment. When the tissues are hyperæmic, the blood absorbs the ultra violet rays, and action is less rapid. This difficulty may be overcome by inducing ischæmia with adrenalin applications. Duration of sittings varies from five minutes to one hour with intervals of rest. The time of day, and the season of the year when the heat of the sun is less intense, are preferred, and the treatment must be carried on for three or four months. The experience of Jessen, of Davos, is not in accord in all respects with the foregoing, perhaps owing to a difference in altitude, or to the fact that his sittings are strictly limited to five minutes.[41] He finds that peculiar atony of the vocal bands and laryngeal congestion often accompanying pulmonary tuberculosis invariably ameliorated, as shown by the increase in strength and clearness of voice. Results with ulceration were more decided, than with infiltration. Œdema is found to be no contraindication. The most resistant condition is the fungous granulation, springing from an ulcer on the posterior wall of the larynx, although the associated cough, aphonia, and œdema are often much benefited. The author intimates that the good results may be in part ascribed to the fact that pursuance of the solar treatment involves abstention from harsh and irritating measures, sometimes in favor, and which he strongly deprecates. He concludes with some interesting reflections on the mode of action of sunlight, and refers to the experiments of Tappeiner and Jesionek with eosine[42] employed with a view of rendering the deeper tissues more accessible.

A few additions have been made to the list of medicinal agents for local use. A "new" treatment warmly praised by Monnier consists of painting the affected region with glycerinated extract of cod liver.[43] Of thirteen cases all were relieved and many were cured. Six cases in the early stage were cured with five to fifteen applications. In one case of ulcer of the vocal band twenty-one applications were needed to effect cicatrization. Another whose epiglottic ulcer healed, died subsequently of pulmonary disease. Œdematous infiltration resisted treatment until the parts had been well scarified. Stein, of Copenhagen, advocates mentholated inhalations and for the relief of pain applications of anæsthesin.[44] In a thesis by Mabilais is given a very complete review of local medication in tuberculous laryngitis.[45] For insufflation he recommends diiodoform, and describes an instrument, devised by Leduc, of Nantes, whereby the patient himself may apply the powder, if the physician is not within reach, and frequent treatments are desirable. Diiodoform is used alone or combined with morphine hydrochlorid. It has not the unpleasant odor of iodoform and equals it in antiseptic, cicatrizing, and anæsthetic properties. It is intended as an adjuvant simply, and not as a substitute for other remedial measures. Formalin is not new, having been warmly praised by Cohen years ago, but has received fresh impetus from Stein, of Chicago.[46] He pronounces it "one of the best means we possess" in tuberculous laryngeal disease. He prefers it in watery solution. In England it is popular in powder under the name of paraform. Lake's well known formula is composed of carbolic acid, ten parts; formalin, ten parts; lactic acid, fifty parts; and water, thirty parts. The strength of the watery solution may vary from two and one-half to ten per cent. If it causes pain it may be preceded by cocaine, but often formalin pain outlasts cocaine anæsthesia. In some persons it is excessively painful, and if cocaine be used, the danger of a drug habit should always be kept in mind.

There is hardly any morbid state that needs to be studied with so much care and from so many points of view. We cannot too often repeat the time honored injunction that in treating tuberculosis one

[37] *Archives internationales de laryngologie*, etc., xix, No. 3, 1905.
[38] *Ibidem*, xx, No. 6.
[39] *Wiener klinische Wochenschrift*, 1904, 1.
[40] *Münchener medicinische Wochenschrift*, January 10, 1905.
[41] *Archives internationales de laryngologie*, etc., xx, No. 6.
[42] *Münchener medicinische Wochenschrift*, 1903, 47.
[43] *Archives internationales de laryngologie*, etc., xix, No. 2.
[44] *Hospitalstidende*, August 23 and 30, 1905.
[45] *Thèse de Paris*, 1905.
[46] *Laryngoscope*, November, 1905.

should always remember that he is dealing with a patient as well as a disease. In a few selected cases energetic attempts to eradicate localized disease are justifiable. In the majority our chief reliance must be on general hygiene combined with local treatment of only the most bland and soothing character.

147 WEST FIFTY-SEVENTH STREET.

LOCAL ANÆSTHESIA IN THE OPERATIVE TREATMENT OF ANORECTAL DISEASES.*

BY SAMUEL G. GANT, M. D., LL. D.,
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Some years ago the writer read a paper before the Surgical Section of the Academy upon the office treatment of certain diseases of the lower bowel. It was asserted that many affections of the anorectal region could be successfully and radically operated upon under local anæsthesia, induced by the injection of a sufficient quantity of either a eucaine or cocaine solution. It was further maintained that a large number of patients were being sent annually to the hospital, required to take a general anæsthetic and be detained from their social and business duties for several days or weeks, who could have been successfully operated upon in the office by the aid of local anæsthesia.

Since the publication of this article the writer has uninterruptedly continued his experiments with different local anæsthetics in the operative treatment of this class of affections, and has from time to time published the results obtained. Twelve hundred cases have thus far been operated on under local anæsthesia at the clinic, office, home of the patient, or, when desired, at the hospital.

Some of the operations were of minor importance, while others were of considerable magnitude. The conditions for the relief of which they were performed embrace nearly all of the diseases encountered about the rectum and anus. The list includes operations for: Internal, protruding, and bleeding hemorrhoids; external, cutaneous, and thrombotic hæmorrhoids; complete, blind, internal and external, and complete internal and external fistulæ; prolapsus ani; ulceration, fissure (division and divulsion), polypi, ischiorectal, marginal and follicular abscesses; anal stricture, congenital malformations of the anus; sacral dermoids; condylomata; lipomata; epitheliomata (curettage); perineal cysts; foreign bodies beneath the skin and mucosa; constipation and fæcal impaction (divulsion and division of sphincter); closure of artificial ani and fæcal fistulæ; colostomy; cœliotomy; fixation of the sigmoid colon to the abdominal wall for the relief of prolapsus recti and invagination, and repair of the sphincter muscle for incontinence.

The vast majority of these operations were for the relief of hæmorrhoids, fissure, fistula, abscesses, ulceration, simple prolapsus and constipation, etc. Those for the other affections were of rare occurrence, and were performed only in carefully selected and favorable cases.

While local anæsthesia can undoubtedly be successfully employed in a great many radical operations, the writer's experience has convinced him that it is not for the best interest of the patient to employ it to the exclusion of general anæsthesia. The administration of a general anæsthetic is imperative for all operative procedures in the upper rectum, extirpation or resection of the bowel, excision of the coccyx, and all extensive operations, such as are required to remove large tumors, or to relieve complete extensive prolapsus recti, complex, horse-shoe, rectovesical, rectourethral and most rectovaginal fistulæ, very extensive abscesses, necrosis of the coccyx and sacrum, and strictures and congenital malformations above the internal sphincter muscle.

General anæsthesia is necessary also in operations for fistulæ, hæmorrhoids, fissure, abscess, etc., complicated by other more serious rectal disease, when local anæsthesia does not permit the diseased tissues to be sufficiently exposed for thorough operation, when the areolar tissue is loose and allows the solution to rapidly disseminate, and when, because of the presence of an ulcer or fistulous opening, a sufficient amount of the fluid cannot be retained to cause pressure and blanching of the tissues.

The stated, more or less grave, affections, however, constitute but a small proportion of the total number of cases coming under the proctologist's care, and occur most frequently in dispensary and hospital practice, while the better class of patients are usually afflicted with the more common and simple diseases of the anorectal region.

The local anæsthetics employed by the writer include the ether spray, ethyl chloride, liquid air, cataphoresis, normal salt solution, plain sterile water, both weak and strong solutions of eucaine, cocaine, and stovaine.

The first three named were employed in some of the earlier cases, but were soon discarded because of their unreliability in producing the desired amount of anæsthesia, the severity of the initial and postoperative pain, sloughing which often follows the freezing of the tissues, and because they are not suitable except for minor operations involving the skin.

Cataphoresis, as suggested by Morton, proved effectual in the same class of operations, but is impracticable because of the apparatus required and the fact that it takes several minutes to produce the necessary anæsthesia.

Sterile water, eucaine, and cocaine were used in the vast majority of cases; lately, however, stovaine has been used on several occasions.

In the cases operated in by the aid of water anæsthesia, the anæsthetization of the parts was produced by the injection of either a normal sterile saline solution or plain sterile water. They were equally effective in producing anæsthesia, and the pain caused by the distention was not noticeably more from one than in the other.

In so far as the anæsthesia is concerned the temperature of the water plays no part, but it causes less discomfort to the patient when injected at the temperature of the body. It has been stated that distention of the tissues with water would cause sloughing; this has not occurred in the practice of the writer in several hundred cases, and he does not

* Read before the Surgical Section of the Academy of Medicine, New York, May 4, 1906.

understand how it could follow when the distention has been properly made.

In operations involving the skin the preliminary distention pain caused by the injection of water is slightly more and lasts a little longer than when eucaine or cocaine are used, but the postoperative pain which follows the employment of the agents last named is very much more severe, and lasts much longer than when the operation is performed under sterile water anæsthesia.

In the paper read before this body in 1903 on the *Office Treatment of Rectal Diseases* the writer recommended the use of three per cent. eucaine and a four per cent. cocaine solution for operations in this region. Since then, in order to avoid as far as possible the toxic effect of these drugs, the strength of the solution has been reduced from time to time. At the present writing eucaine and cocaine are employed in strengths ranging from one eighth to one twentieth of one per cent., while from one half to one per cent. is used of stovaine. No matter how weak the solution employed these agents will occasionally produce unpleasant symptoms, and patients thus operated upon frequently complain for an hour or so of considerable postoperative pain, for which reasons it is best to give them a little morphine and keep them quiet for a while before allowing them to move about.

The *technique* of the writer in producing local anæsthesia is the same whether the agent be sterile water, eucaine, cocaine, or stovaine. The idea seems to prevail in some quarters that a considerable amount of water is required to distend the tissues properly, even in minor operations, such as those required for the relief of hæmorrhoids, fissure, etc. This is not true, however, since in the vast majority of cases exactly the same amount is required as if eucaine or cocaine were employed. In other words, a sufficient amount of the fluid, whatever it may be, must be injected, to cause the part to be incised or operated upon to turn white. The operation should never be begun until marked blanching of the tissues has occurred, otherwise the patient will complain of as much pain as if nothing had been done to avoid it.

The beginner in this class of work causes the patient much unnecessary pain and often destroys his landmarks by injecting the water, eucaine, or other agent, too suddenly and in a larger amount than is required. He also fails in other cases because the needle is made to enter first in one place and then another, each time leaving an opening through which the anæsthetic escapes before anæmia of the part is produced.

The writer has elsewhere[1] given in detail his technique for inducing anæsthesia by the stated agents, and will not discuss it at this time, but will call attention to a few points of importance.

Surgeons who contemplate doing radical operations under local anæsthesia in the office should have a fully equipped operating room, conveniently located toilet, and a resting room, so that the patient may be quickly prepared and operated upon under as favorable circumstances as if in the hospital. The danger of infection which might follow operations performed with the subject upon the examining room table is thereby materially lessened, much time is saved to the surgeon, and the comfort of the patient is added to by having the additional resting room.

When a linear incision is to be made the anæsthetic should be slowly injected between the layers of the skin along the line to be incised, after which the needle should be pushed further in and the deeper tissues beneath this line anæsthetized, care being taken not to remove the needle more often than is *absolutely* necessary.

When it is desirable to anæsthetize the sphincter for purposes of divulsion a long needle is required, and the solution should be deposited in the skin, and then the subcutaneous tissues at a point in the median line half an inch from the posterior anal commissure, after which it should be injected in the muscle posteriorly, then along the sphincter, first on one side and then on the other.

In divulsion of the sphincter muscle the writer prefers a one tenth of one per cent. eucaine or cocaine solution to that of sterile water. He has thus far been able to obtain satisfactory anæsthesia of the external sphincter without the necessity of searching for or attempting to make the injection into any particular nerve or its branches, before the divulsion was begun.

In operations for internal hæmorrhoids the needle is at once plunged into the centre of the tumors, and a sufficient amount of sterile water, eucaine, or cocaine is deposited within to anæsthetize and cause them to roll into view.

Hæmorrhoids which are not easy to get at can usually be made to protrude by giving the patient a soapsuds and glycerin enema, before he is placed upon the table, or by inserting a bivalve speculum in the rectum, tilting and withdrawing it part way, which will bring the tumor into view, or, as is frequently practised by the writer, they are caused to become congested and to project through the sphincter by the aid of an electric cupping outfit, which draws them downward and outward.

Much has been said in favor of the use of adrenalin chloride in water or in combination with eucaine or cocaine in operations about the rectum and anus. After an extensive experience with this agent it was discarded, not because it did not diminish bleeding during and immediately following the operation, but for the reason that it appeared to be responsible for several hæmorrhages which occurred from a half to six hours after the operation, consequent upon the relaxed state in which it left the blood vessels.

The writer prefers the insertion through the proctoscope of several layers of gauze which are allowed to project through the sphincter, or a firm, thick, wedge-shaped compress placed over the anus and supported by a strong, tightly adjusted T binder, to prevent bleeding in cases where he fears a hæmorrhage.

Local anæsthesia can be easily, quickly, and satisfactorily obtained by the aid of the anæsthetics mentioned, and the results from operations performed where they have been intelligently used have been so successful that the writer is unable to comprehend why local anæsthetics are not more generally employed by both the proctologist and the general surgeon.

[1] Gant, *Diseases of the Rectum and Anus*, third edition, 1905. F. A. Davis Company, Philadelphia.

The writer has been frequently criticized because he has insisted that many of the operations resorted to for the relief of diseases of the rectum could be painlessly and radically performed in the clinic, the office, or in the home of the patient, by the aid of local anæsthesia. Recently, however, the writer has noticed with satisfaction a number of articles written by many proctologists on *The Office Treatment of Rectal Diseases* and the *Value of Local Anæsthetics in Operations about the Anorectal Region,* etc. Some of these papers were written by specialists who were loudest in their denunciation of these same methods but a short time ago.

In conclusion the writer wishes it understood that his object in writing this and other papers[2] along this line has not been for the purpose of discouraging the use of general anæsthesia, nor to exploit sterile water or any one local anæsthetic to the exclusion of the others, but to encourage the practice of operating upon the many affections encountered about the rectum and anus which can be speedily, painlessly, and radically cured, independent of a general anæsthetic and outside the hospital.

43 WEST FIFTY SECOND STREET.

PRELIMINARY REPORT ON THE USE OF X RAYS IN NEURITIS.

BY JULIUS H. COMROE, A. M., M. D.,
York, Pa.

The almost universal employment of the Röntgen rays, during the greater portion of the past decade, as a palliative measure in the treatment for pain resulting from malignant neoplasms, has prompted the author to employ this valuable therapeutical agent in well selected cases of neuritis, viz., in those cases in which, after a most careful study, the cause has been either partially or wholly removed, and which have thereafter resisted all modes of hygienic, therapeutical, dietetic and hydrotherapeutical treatments. Undoubtedly the majority of the so called neuralgic pains which are associated with malignant growths are functional in character, at least, early in the disease, but in a large number of cases there also exist distinct pathological changes, produced by inflammatory and toxic extension, so that the nerves become swollen, infiltrated, and red. These alterations are chiefly perineural, i. e., the inflammatory exudate is poured out between the nerve tissue and its surrounding sheath, although not infrequently the process becomes interstitial and even parenchymatous.

Exhaustive laboratory and clinical studies have conclusively demonstrated that these x rays exert electrical, chemical, and inflammatory effects, chiefly the latter. By acting upon the intima of the capillaries they produce changes similar to those resulting in endarteritis, thus practically starving out the nutrition which the active inflammation so urgently seeks, and without which it must necessarily cease its ravages. Furthermore, the "electrical irritation of the peripheral nerves inhibits their function so that there is no sensation" (Beck). Finally, the prolonged influence, probably chemical, of these rays produces a more or less hyperæmia, acting, therefore, as a valuable and prolonged counterirritant. It can thus be more clearly understood how, by directly antagonizing and inhibiting the progress of the pathological changes and secondarily producing counterirritation, x ray therapy must be at least considered as a method of choice in the treatment of resistant cases of neuritis.

In tabulating the following cases, the author has condensed the clinical data taken from his memoranda cards. It may also be mentioned at this juncture that the Queen 12-inch coil on a direct 110-volt circuit was employed in the irradiation.

CASE I.—C. S. G., forty-three years old, male, unmarried, policeman. Family history is negative. Social history: Until thirteen years he used alcohol excessively, but only moderately since then. Has used and still employs tobacco excessively. At the present time he is suffering from a chronic Neisserian infection of the posterior urethra.

Present complaint: During the past eighteen months patient has suffered severe neuralgic pains in the left hip and thigh, which finally attacked the lumbosacral region and the knee on the same side. These knife like pains were not influenced by climatic conditions, but were greatly aggravated by motion or pressure. Three months ago, he spent about six weeks in the hospital, and during the first ten days of his confinement the tenderness was so marked, that even the contact of the bed clothing caused him to cry out. After this prolonged rest, associated with the best of medical care, he improved sufficiently to leave the institution, but has since then had a recurrence of the same intermittent attacks.

Examination showed a characteristic gait, i. e., the left thigh seemed to be held fixed and the entire left lower extremity moved forward as though it had been confined in a splint. There was extreme tenderness along the outer aspect of the thigh as far as the external hamstrings, which was greatly aggravated by deep pressure along the course of the greater sciatic and internal gluteal nerves. The knee jerks on the left side were absent, and the station was not very good. There were no Argyll Robertson pupils, and Babinski reflex and ankle clonus were not present. The urine had specific gravity of 1030, was highly acid, but otherwise negative.

Diagnosis: Chronic multiple neuritis.

Treatment: The sciatic area was exposed in two sections, viz.: (a) The upper and outer aspect down to the apex of Scarpas triangle, and (b) Scarpas triangle down to the prominence of the gastrocnemius. A heavy anode Gundlach tube was employed every other day for periods varying from eight to twenty minutes, the ampèrage going through the primary varying from three to eleven ampères. The tube distance was at first nine inches, and was rapidly brought to four. In all the patient received fourteen exposures over a period of twenty-six days. After the second séance, there was noticeable abatement of the subjective symptoms, and on the sixth day the tenderness was perceptibly lessened. After the first two weeks the patient was able to attend to his routine duties, and for the first time since the onset was "entirely free from those neuralgic pains in the leg." The absent reflex in the left knee was now returning, although much weaker than its opposite fellow, and his station was considerably improved. Improvement was rapid until his discharge on the twenty-sixth day.

Subsequent history: Patient was seen several weeks after his discharge, and was feeling perfectly well.

[2] 1. A Plea for the Nonhospital or Office Treatment of Diseases of the Rectum and Anus. *New York Medical Journal,* April 18, 1903. 2. Sterile Water Anæsthesia in the Office Treatment of Rectal Diseases. *New York Medical Journal,* January 23, 1904. 3. Hæmorrhoids. *New York Medical Journal,* January 7, 1905. 4. Gant, *Diseases of the Rectum and Anus,* third edition, 1905. F. Davis Company, Philadelphia. 5. Sterile Water Anæsthesia in the Operative Treatment of Internal Hæmorrhoids. *Therapeutic Gazette,* March 15, 1906.

Case II.—Mrs. E. G., thirty-four years of age. Referred by Dr. Pfaltzgraff.

Family history is negative. Social and previous history have no bearing on the case.

Present complaint: Patient is suffering severe pain as a result of a recurrent carcinoma of the left breast (which, according to her history, had been removed at the hospital one month ago). The pain is described as being a sharp shooting, almost continuous, knife like one, confined to the inner side of the left arm, forearm, and hand, and is aggravated by motion and very slight pressure.

Examination revealed an enormous cauliflower bleeding mass in the left mammary region, extending from the edge of the sternum to the anterior axillary line, and from the clavicle to the sixth rib. The axillary and cervical glands on both sides were greatly enlarged, and the entire left upper extremity was swollen to almost twice the proportions of its opposite fellow. Its sensation to palpation was boardlike, and the slightest pressure, particularly along the inner aspect, caused an outcry. The greater tenderness was elicited when the course of the ulnar nerve was followed with the palpating finger.

Diagnosis: Acute neuritis.

Treatment: X ray exposures were directed against the carcinomatous masses in the left breast and axilla, and also along the ulnar region of the forearm. For the first week, daily exposures were given with a medium tube, lasting from five to twelve minutes, with five to eight ampères going through the primary. The analgesic effect was almost instantaneous, the pain being distinctly lessened after the first application. On the fourth day the patient was able for the first time since the onset to freely move the affected arm with but little pain. After the seventh exposure, lasting twenty-five minutes, the patient developed a slight, though painful x ray burn, which necessitated a cessation of treatment for five days. She was then treated three times a week with a soft tube, and during the third week the patient was absolutely free from pain and tenderness. Unfortunately, the right breast was rapidly becoming carcinomatous, the patient's strength began to rapidly fail, making it impossible to receive treatment, and she finally died, five weeks later, from œdema of the lungs.

The rapidity and completeness of the analgesic effect of the Röntgen rays in these cases of secondary neuritis (probably functional in most cases) due to malignant neoplasms is illustrated in this case, where opiates and other anodynes had almost completely failed to cause any amelioration of the symptoms after a prolonged trial. The experience of the author is in accord with that of other observers, viz., that in the majority of such cases the analgesia produced by radiotherapy is more prompt and lasting than that resulting from other therapeutical means.

Case III.—William P. J., ætas twenty years, white, refrigerator attendant in a creamery.

Family history is negative. Social history: Has used alcohol and tobacco excessively until about one year ago, and moderately since then. Previous history: Has had two attacks of pleuropneumonia, five years and again three months ago, and a severe attack of pleurisy one year ago.

Present complaint: For the past several months patient has suffered from severe pain and tenderness in that portion of the left thoracic region, bounded by the axillary lines and the ninth rib. He dates the origin of the disease from the beginning of his employment in the refrigerator department of a creamery, where he was subjected to sudden variation of the extremes of temperature, about one year ago. This pain, which is described as being "dagger like," is aggravated by sudden motion and the slightest pressure. Patient has a good appetite; has lost no weight; has no night sweats. He suffers from slight cough and expectoration.

Examination showed undoubted signs of a chronic pleural thickening in the left axillary region between the fifth and seventh ribs, and also a few scattered moist râles over the entire chest. There were also suspicious evidences of incipient tuberculosis in the right apex. The slightest percussion along the paths of the sixth, seventh, and eighth intercostal spaces produced great pain, and even the application of the stethoscope caused the patient to move aside. These tender points, followed posteriorly, led to the corresponding points of emergence of the fourth, fifth, and sixth intercostal nerves higher up. Over this region of tenderness there is a distinct rise of cutaneous temperature as compared with the opposite side.

Diagnosis: Chronic pleurisy and intercostal neuritis.

Treatment: The entire left axillary region was exposed to a medium tube, at seven inches, with only three ampères passing through the primary and the employment of a Friedlander shield. The rays were directed anteroposteriorly to avoid their powerful convergence on the heart, as the author had noticed on several occasions that the cardiac action was distinctly accelerated under such conditions. Treatments were given every other day for the first week, and every three days thereafter, owing to the patient's extraordinary susceptibility. In all, fourteen treatments were administered, over a period of five weeks. On the third day the patient felt much improved, and after the eighth exposure he was entirely free from pain, although there still existed slight tenderness. After the fourth week, the tenderness had entirely disappeared.

Subsequent history: It may be mentioned at this point that, owing to the amelioration of the patient's cough, during his period of treatment, the author had decided to continue exposure of the right apex, and the favorable improvement in the physical signs, since the treatment was instituted, will be brought out in a subsequent report, in association with other similar cases.

Case IV.[1]—Mrs. E. G., ætas thirty-five years, white, referred by Dr. J. L. Jamison, of Wrightsville, Pa.

Family history is negative. Social and past history has no bearing on the case.

Present complaint: This dates back almost two and a half years ago, when the patient had all her remaining lower teeth (eight in number) removed in preparation for a lower plate. Immediately following this operation, the patient suffered severe neuralgic pains in the mandible in the region of the lateral incisor and canine teeth, and returning to the dentist to be assured that "no roots were left behind," she was told that her suffering would not last very long, and was due to the laceration of tissues. Receiving no relief, the patient sought medical aid, and after a prolonged course of local applications (which she states was cocaine and opiates), her condition rather became worse. About this time she was advised to employ "headache powders," and finding that they relieved her for short periods, she became a habitué and for several weeks she was taking as many as twelve of these proprietary remedies daily. She then sought a surgeon, and had "the bone scraped three times," and received some relief. In March, 1905, she was operated upon at the hospital, and upon inquiry from the surgeons it was learned that a small spicule of bone was removed from the alveolar socket of the lateral incisor. This gave considerable relief for some time, but the agonizing pain returned. At this juncture the patient was referred to me by her attending physician.

Examination showed that the patient had no natural teeth. External palpation, which is extremely painful,

[1] Case shown and reported before the York County Medical Society.

shows at once that the mandible on the left side over the seat of pain is decidedly larger than the corresponding portion on the healthy side, being apparently spindle shaped. Deep percussion over the bone causes extreme pain. The alveolar mucous membrane over the tender area is red, spongy, and extremely tender. Over the lateral incisor is a minute, teat like opening through which a fine wire probe could be passed for about one centimetre. This latter procedure caused the patient to utter cries of pain, and was not persisted in too long, although no carious bone could be elicited. The jagging pain (as the patient expressed it) produced by deep percussion over the painful mandible appeared to follow the course of the inferior dental canal as far posterior as the angle of the jaw. An x ray examination by the author confirmed the spindle shaped enlargement which began about one centimetre anterior to the inferior dental foramen and involved the bone posteriorly for about three centimetres. No distinct pathological bone lesion was shown.

Diagnosis: There was no question about the presence of an existing neuritis of the inferior dental nerve, but the ætiological causal factor was questionable and resolved itself into one of the following: (1) Pyorrhœa alveolaris, the exudate, if present, causing pressure or even an infective neuritis; (2) osteomyelitis, producing pressure symptoms; and finally (3) an associated chronic acetanilid poisoning, as the patient confessed having resorted to these "neuralgia powders" long before the extraction of the teeth for headaches. The diagnosis was therefore chronic neuritis of the inferior dental nerve.

Operation: Owing to the long standing perseverance of such unbearable symptoms, failure of permanent relief by local and operative means, the author advised an excision of the inferior dental nerve and postoperative application of the x rays. The patient insisted on the radical measure preceding the Röntgen séances, as she desired immediate relief, if possible. Accordingly, on April 11th of the present year, with the valuable assistance of Dr. E. W. Meisenhelder, Jr., the author operated upon the patient at the York Hospital. Chloroform anæsthesia was administered through a nasopharyngeal catheter devised by the anæsthetist, Dr. Treible. An incision, about four centimetres in length, was made over the congested mandibular mucous membrane, which latter was detached from the underlying bone. The bone was visibly thickened in this region, but there was no softening, and the periosteal covering was firmly attached, although apparently very slightly thickened. The inferior dental foramen was easily located, and from it there passed multiple ramifications of nerve tendrils, giving very much the macroscopic appearance of a neuroma. These latter were extremely soft and mushy, it being impossible to produce the slightest tension without their breaking. The inferior dental canal was then laid bare with a chisel for a distance of about five centimetres, and the nerve exposed. This structure was distinctly swollen, and for the first three centimetres of its course, which represented the tender area approximately, was also very friable. The distal extremity was then wound about a finely pointed hæmostat and gradual tension made, and it was finally incised close to the centric end. The canal was then thoroughly curetted, and filled with silver foil, tightly packed (after the canal had been thoroughly dried). The wound was closed with interrupted sutures around a drainage tube.

Subsequent history: The patient made an uneventful recovery, the drainage tube being removed in twenty-four hours, during which time she complained of some slight soreness at the seat of incision. During her stay of two weeks in the hospital, there was not the slightest recurrence of pain or tenderness, which had previously never been absent for twenty-four hours continuously.

X ray treatment: Faber reports a case (*Hospitalstidende,* Copenhagen) of neuritis of four years' duration, where a thorough resection "of the inferior alveolar and mandibular nerves" was followed by a recurrence of the symptoms, and which was cured by ten treatments with the x ray. The author exposed the left half of the face (according to Faber) twice a week for one month, and once a week thereafter for several months. A medium tube, with four ampères, was employed, at six inches, for periods varying from four to twelve minutes. The patient was instructed to report at varying intervals for observance and occasional treatment, and during the past five months has been entirely free from pain and tenderness.

Pathological report: Chronic interstitial neuritis. Marked increase in connective tissue; lumen of vessels almost obliterated; round cell infiltration moderate.

CASE V.—Miss A. E. S., ætas sixty-five years, unmarried; white, referred by Dr. William F. Bacon.

Family and social history are practically negative.

Present complaint: Patient was operated upon at a cancer sanatorium at Rome, N. Y., and soon afterwards suffered a recurrence in the scar (left breast), right breast, and both axillæ. Her chief complaint was the almost continuous presence of sharp shooting pains down the left arm, chiefly along the ulnar distribution, and in the entire left hand.

Examination revealed a recurrence of the growth as detailed, the right breast being extremely scirrhous. The axillary glands had reached enormous proportions, particularly the left. The entire left upper extremity was greatly swollen, and was very painful when motion was attempted. Tenderness was marked along the entire arm, and it was impossible to even lightly palpate the left hand without producing great discomfort. Opiates and other anodynes had been judiciously employed with little success.

Diagnosis: Acute neuritis from inflammatory extension.

Treatment: Three individual exposures were made at each treatment, viz., both breasts and axillæ (each seven minutes) and the ulnar aspect of the arm and hand (five minutes). A soft tube at eight inches was employed, and applications were made every other day, for sixteen days. On the sixth day, after the patient had developed a slight x ray burn, she felt some slight relief in the arm and hand, the tenderness being less marked. The glandular involvement in the left axilla was increasing with marked rapidity, and the pain and tenderness returned in a more aggravated form. Strange as it may appear, the glandular involvement on the side not operated upon (surgically), was markedly reduced by the x ray exposures. Owing to the fact that no benefit was derived from the Röntgen séances, and the rapid loss of strength of the patient, treatment was discontinued.

Subsequent history: The most careful and judicial administration of general and local remedies failed to produce any marked amelioration of her suffering, and she died in several weeks.

CASE VI.—Mr. W. H. L., ætas thirty years, married, slaughterer.

Social history: Employs alcohol and tobacco rather freely.

Present complaint: During the past year, dating with a "strain received while carrying a heavy cut of beef," the patient has suffered intermittent attacks of sharp shooting pains in the lumbosacral region, which were intensely aggravated by motion. At times the pain was transmitted down the posteroexternal aspect of both thighs, as far as the knees. The condition was not aggravated by climatic changes, but became much worse after a "feast."

Examination showed marked tenderness in the region mentioned, which was increased when deep percussion

was attempted. Deep pressure along the paths of the great sciatics produced an unquestionable amount of pain.

Diagnosis: Chronic neuritis with acute exacerbations.

Treatment: The entire "small of the back" was exposed to a heavy anode Gundlach tube, at five inches, for periods varying from seven to fourteen minutes, three times a week, over a period of five weeks. After the second exposure, patient felt much improved, and on the eighth day he was able, for the first time since the onset, to "kill all day" without marked inconvenience. After the ninth exposure he had not the slightest tenderness on deep percussion. When discharged, the patient had gained flesh and strength, and his appetite, before very poor, was very good.

Although the borderline existing between "neuralgia" and neuritis cannot always be sharply outlined clinically, the author has endeavored to make a careful study of the cases herein reported to such an extent that he has been reasonably convinced that the disturbance has been more than a functional one, and that, probably, structural changes were present. Moreover, all the patients had received a most careful and judicious course of medical attention before reporting to me. Such careful observers as Gocht, Freund, Stembo, Grumbach, and Beck have reported most favorable results from x ray therapy in neuralgia, but no distinct reference has been made as to whether the symptom was the result of a functional or pathological disturbance. Gocht obtained prompt relief in a most resistant case of trigeminal neuralgia after the second exposure.

Conclusions:

(1) The x ray should be employed in the treatment of neuritis only after all other judicious methods of therapy have failed.

(2) The exposure should be directed over as wide an area as may be safe, and frequently repeated in the beginning.

(3) The strength of the current and duration of the exposures should, as a rule, be in direct ratio to the approximate distance of the affected nerve structures from the cutaneous surface overlying them. Idiocyncrasies must be carefully sought.

(4) Relief if obtained usually makes its appearance early in the treatment.

(5) Obstinate cases should receive "tonic" treatment with a medium tube for some time after the patient has been apparently cured so as to further assure permanency.

(6) Postoperative treatment in nerve resections, as shown in Case IV (and also by Faber), is highly recommended.

259 South George Street.

THE MEDICAL COMPLICATIONS AND TREATMENT OF PNEUMONIA.*

By A. C. Morgan, M. D.,
Philadelphia,
Lecturer in Medicine, Medico-Chirurgical College; Assistant Visiting Physician to the Philadelphia General Hospital.

Complications are said to arise in fifty per cent. of all cases of lobar pneumonia, therefore this phase of the subject is of special importance as it is upon the presence or absence of complications that the ultimate outcome of the case usually depends.

The condition of a patient at the beginning of pneumonia has great bearing upon the course and termination of the case. It is important to note that the disease often occurs in those who are apparently in sound health and good physical condition, yet they frequently succumb, either on account of some hitherto undiscovered physical defect or an acute complication. Thus, many cases of valvular heart disease or chronic Bright's disease are discovered for the first time at the beginning of an attack of pneumonia. A previous condition of alcoholism, valvular heart disease, emphysema, Bright's disease, or arteriosclerosis always seriously complicates and handicaps a case of pneumonia.

Pleurisy is an almost constant accompaniment of lobar pneumonia, therefore is not accounted a complication unless it attacks the opposite side, becomes very extensive, or develops an effusion, when it becomes a so called surgical complication, which phase will be discussed by another member of the Society, though a brief word should be said with regard to the relatively small amount of effusion which may cause embarrassment of respiration on account of the swollen and noncollapsible lung. A generalized bronchitis is always a severe complication as it adds much work to an already overworked right heart.

If we remember that lobar pneumonia affects one part of a lung, and that the remaining portion is supposed to take on compensatory work, we can appreciate the tremendous odds against the patient upon the development of any other complication in the respiratory tract, whether bronchitis, congestion, or œdema.

Epistaxis and hæmoptysis occur, but are seldom serious. Empyema, abscess or gangrene, especially occurring in the old, are dangerous. Venesection is said to result at times in delayed resolution.

Heart.—The most common complication here is an endocarditis, often ulcerative, and it is particularly prone to be grafted on an old endocarditis. The presence of an aortic diastolic murmur developing in the course of a pneumonia is in all likelihood due to this condition. Ulcerative endocarditis is often a part of the picture of meningitis of a pneumonia, or it may produce septic embolism of the brain, spleen, and kidney, or a peripheral abscess. Pericarditis is dangerous and must be suspected in the presence of an active delirium occurring at the height of this disease. Myocarditis, hyaline or granular, occurs in previously damaged hearts and often determines a dilatation of the right ventricle. Thrombosis or embolism of large arteries is unusual. Cardiac clot is said to occur frequently in fatal cases, but whether this is the cause of death or part of the closing scene is not settled.

Urine.—Acute nephritis is occasionally seen. When the kidneys have been previously healthy this is not severe, but if already damaged suppression with uræmia may occur. Hæmaturia, independent of the hæmorrhagic diathesis, occurs.

Skin.—Jaundice is not uncommon, seldom pronounced, but that for which it stands, an evidence of marked toxæmia, often makes the outcome grave. Urticaria, acne, boils, gangrene of the skin or purpura, may be seen. A patient of mine developed an ischiorectal abscess within two weeks after the cri-

* Read at a symposium on pneumonia at a meeting of the North Branch of the Philadelphia County Medical Society.

sis, but made a good recovery. No culture was made.

Malaria is not a complication but an incident affection at times in pneumonia and is proved only on finding the parasite.

Alimentary tract.—Complications here are not very frequent, though in the presence of a marked toxæmia they may be quite pronounced. Croupous colitis or diphtheritic dysentery may develop as a terminal event. Peritonitis is very rare.

Tympanites is always serious, as it greatly limits the movement of the diaphragm, adding much to the discomfort and dyspnœa. Many fatal cases show this condition. Diarrhœa may be seen, but in the absence of marked nervous symptoms is usually not alarming, especially at the time of the crisis.

Nervous system.—The mind is usually clear in this disease, and when nervous symptoms are present with any marked severity they always indicate a very severe type. Delirium, active or wild, maniacal or ambulatory may be seen. The typhoid state is ominous, especially in the old or alcoholic, the latter often developing delirium tremens. Convulsions at the onset of pneumonia in children are common, but if seen at the height of the disease they indicate meningeal involvement and are then usually fatal. Meningitis is often the result of an ulcerative endocarditis and makes the prognosis absolutely bad. Aphasia, peripheral neuritis, otitis, and parotitis occur.

Rheumatism and suppurative arthritis are occasionally present. The former shows the usual local manifestations of acute articular rheumatism, while the latter may sometimes be the first symptom of pneumonia, the lung affection developing secondarily. A case of pneumococcic arthritis recently seen with Dr. E. M. Welty at the Philadelphia General Hospital lasted eight weeks and showed pure cultures from the joint of the hand, recovery finally taking place.

Treatment.—A transformation in our ideas of the hygienic treatment of pneumonia is taking place, and there is considerable evidence in favor of treatment of patients with this disease by the open air method, exactly upon the lines now pursued in the treatment of tuberculosis. In New York much has been done within the past year along these lines, with much favorable result. Patients have been kept in the open air with plenty of sunlight, warmly covered in the cold weather, and they seemed to show much less dyspnœa and a minimum of nervous symptoms, when kept there day and night, while there was a lessening of pulmonary complications, as bronchitis, hypostatic congestion, etc. The mortality was less than is usual in hospital cases. One hospital in New York (Presbyterian) is constructing a pavilion for the open air treatment of such cases, and the outcome will be watched with interest.

A cool room certainly makes the patient more comfortable than a warm room. We know personally of an old practitioner in New England who refused to treat pneumonia patients unless all heat was withdrawn from the sickroom, and his recoveries were far in advance of other doctors in the same town who kept their patients in warm rooms.

Diet.—After the first twenty-four hours, when the usual gastrointestinal irritation that ushers in the disease has subsided, regular and systematic feeding should be insisted upon. Liquid and semi-solid diet in small quantities but with marked regularity should be the rule. Fresh water and cracked ice should be given with a free hand.

Alimentary tract.—The bowels should be cleansed with an initial dose of calomel and kept soluble by salines and low enemas, with rigid prophylaxis against the development of tympanites. Enteroclysis has many points in its favor and should be used in cases where there is great thirst, depression, or where the stomach is irritable. Hypodermoclysis should be resorted to in cases with marked toxæmia, the saline treatment showing positive benefit in a large percentage of cases.

Local.—The routine use of poultices, such as clay or flaxseed, is not to be recommended. The chest should be left free for occasional applications that may be indicated. Mustard plasters, judiciously used, will fulfill nearly all the indications for counter-irritation and are particularly beneficial in the old and very young. Turpentine stupes are also very efficacious. Ice, or cold water coils quiet pain and local discomfort. Cupping and leeching are often useful, and ought to be resorted to more often than they have been of late years. Strapping the side with adhesive strips often gives welcome relief.

Venesection.—This does good in robust persons with high tension pulse, and who show signs of sudden dilatation of the right heart. Late in the disease, or in adynamic cases where toxæmia and not mechanical factors are the cause of sudden dilatation it had better be withheld for the lack of results in the one case and for the influence of the record of the first case upon some future one that may be ideal for this operation. Serum and antiseptic treatment have not given satisfactory results.

Pain.—This requires morphine or Dover's powder if local measures do not suffice as indicated. Use as little morphine as possible on account of locking secretions, but use it when necessary until its effects are noted. Don't forget the beneficial results of small doses of morphine in a worried heart, as is sometimes seen in this disease. Chloral had better be withheld unless the heart is very strong.

There is no specific drug treatment for pneumonia. The salicylates are in decided favor, however, as they seem to reduce temperature, lessen toxæmia, promote diaphoresis and diuresis, thus eliminating toxines, besides always showing a decided good effect upon the associated pleurisy. Recently Galbraith, of Mexico, has reported brilliant results from the use of quinine in drachm doses, with tincture of iron in fifteen drop doses, and the method is worthy of consideration. Quinine has, however, been used for years in this affection, Osler referring to its use in the dosage recommended by Galbraith.

Pilocarpine seems to do good in some cases where the heart is strong and secretions are scanty, but it is a dangerous drug to use in routine and must be withheld if there is any œdema present.

High tension at onset.—Veratrum viride and aconite have long held repute to lessen high tension, with much variance of opinion as to the good, or the absolute necessity for modifying this symptom. The abortive treatment consists in giving large doses of digitalis to further raise arterial tension. The indication for lowering tension should be the signs

of heart embarrassment and not the symptom of high tension *per se*.

Low tension.—This is far more important and indicates failing heart power, either from toxæmia or from mechanical obstruction, and here there is no question as to the raising of tension, either by whipping up the heart by stimulants, or relieving congestion by bleeding or other means, as leeching, salines, etc.

Heart tonics.—Tonic doses of heart stimulants should be used from the beginning, but should not be pushed to their limit unless indications arise. Strychnine, 1-60 grain, every four hours regularly, with increase p.r.n. is always good. Nitroglycerin combined, if the tension is very high; atropine if tension is low. Use ether hypodermatically to whip up the heart in sudden collapse or at the crisis.

Sparteine should be used if the kidneys are faulty in function. Ammonia in small doses is useful if secretions are thick and there is much strain in coughing. Alcohol is needed from the start in alcoholics or those who are debilitated and may be freely used in such cases, but had better not be given in other cases with high tension unless failure is imminent. Camphor in olive oil is splendid for emergency use, or in routine if much nervous disturbance is present. Adrenalin for sudden low tension has been used with apparent success. Atropine is also useful in this connection, or where there is a tendency to pulmonary œdema. Expectorants should not be used.

Hydrotherapy.—This should play a large part in the treatment of all cases of pneumonia, particularly where any tendency to nervous manifestations exists, as it conserves the strength of the heart, eliminates toxines, keeps all the functions in good condition, and soothes the patient. Hyperpyrexia should be treated by this means and not by any of the coal tar products, even at the beginning of the disease.

Remember that a temperature of 104 degrees F. is entirely compatible with safety in this disease. A persistently low temperature with nervous symptoms is a very bad omen, and here alcohol and other stimulants must be used freely. Oxygen administration, as a routine treatment, while holding an important place must not be relied upon alone if cyanosis develops, but all means must be employed to overcome the condition which causes the symptom. If bleeding is done for the cyanosis, saline infusion may be indicated subsequently.

Insomnia.—This is an important symptom and the patient must be made to sleep at least a few hours in every twenty-four, or if not the strain on the nervous system will soon develop an acute mania which will quickly exhaust the patient. Morphine may be used in most cases; sometimes chloral, if the heart is good. Paraldehyd offers good results in some conditions and often aids in softening secretions at the same time.

The treatment of pneumonia cannot be outlined on arbitrary plans, but each case must be a law unto itself, and he who remembers that the disease is as an enemy and stands constantly on the alert to meet each change in the situation will attain greatest success, for it is upon the complications which develop that the prognosis and treatment are chiefly based.

2114 North Thirty-First Street.

HYDROTHERAPEUTIC TREATMENT OF CHRONIC RHEUMATISM.*

By Jacob J. Levy, M. D.,
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There is no class of cases which offers so large a field for physical remedies as chronic cases of rheumatism, because drugs have little or no influence. I shall devote the short time allotted to me to my treatment of chronic rheumatism.

The patient is given a hot air bath or an electric light bath of a temperature of 150° F. for twenty minutes to induce profuse perspiration. Hot air or the electric bath is superior to the Turkish bath, because in the former the patient's head is outside of the cabinet breathing pure, cool air, and besides, the patient does not breathe air contaminated with emanations from a number of persons who happen to be in the same hot air room, as occurs in Turkish bath establishments. After the hot air bath the patient is given a circular douche, temperature 90° F., of one minute duration. This is followed by the Scotch douche to the joints or muscles affected. As the Scotch douche is so little known in this country, and as its therapeutical effects are so striking in these rheumatic conditions, I shall describe this douche in some detail.

It is a douche where high and low temperatures of water are applied alternately. It can be called the douche of thermic contrasts. My douche apparatus has three tubes placed side by side, one for live steam, one for cold water, and the third gives us any desired temperature as the thermometer is in contact with the mixing chamber. I usually employ steam and cold water for the Scotch douche, and by means of the rapid alternation in the application of live steam and cold water to the affected parts, a most profound local effect is produced, and a marked hydrotherapeutical reaction is brought about. The value of this douche consists in the combination of thermic and mechanical stimulation, the mechanical effect is produced, because the water comes out of the tubes under pressure which can be increased as desired, while the marked thermic stimulation is due to the tremendous difference in the temperature of cold water and steam. The increase of vital activity brought about by the reaction following the Scotch douche, becomes of great value in restoring the functions of diseased parts. On account of the improved circulation absorption of the deposits in the joints is brought about.

Professor Max Schüller, who read a paper before the Surgical Congress on the Scotch douche, says: "The treatment is soon followed by a diminution in pain and in increased motility of the joint. Many cases can be kept in a comfortable condition which would otherwise be attended by great suffering. In cases that are marked by immobility the Scotch douche with massage will assist materially in increased mobility."

After the Scotch douche, massage, with special attention given to the affected joints or muscles, is very useful in these cases. Often the combination of a douche with massage, called douche-massage,

* Read before the Syracuse Academy of Medicine on April 17, 1906.

acts very beneficially. Prolonged hot tub baths (100°F.) with massage during the bath, followed by warm blanket pack, are useful procedures for robust rheumatic patients.

Hot fomentations, as recommended by Baruch, are especially indicated in cases of chronic muscular rheumatism. If the compresses are thoroughly wrung out, and if the affected region is greased with petrolatum, then there is no danger of burning the patient. After the termination of the fomentation the patient is washed off with water at 70° with friction and dried. The best time for the application of these compresses is just before the patient retires. These patients should be advised to drink plenty of water, from 6 to 8 glasses a day.

To sum up the treatment: 1. The patient is given an electric light bath, temperature, 150° F., duration twenty minutes, to be followed by a circular douche 90° F., duration one minute, this is followed by a Scotch douche to the affected joints, and this in turn is followed by a general massage with special attention to the affected joints or muscles. Three treatments a week are usually sufficient for these cases.

The treatment of chronic rheumatism can be made satisfactory to the physician and patient alike if rational massage and scientific hydrotherapy be made the chief factors. We must have precision in our hydrotherapeutical procedures and exactness in their execution. A hydrotherapeutical prescription without the exact statement of temperature and duration is just as ridiculous as a prescription for morphine without stating the dose. Many obstinate cases which have resisted medicinal therapy for months have yielded to my treatment. We cannot expect to cure all these cases, but we can at least make them more comfortable, and alleviate the sufferings of these unfortunate patients.

717 EAST GENESSEE STREET.

URETHRAL DIVERTICULA AND CUL-DE-SACS.*

BY NOAH E. ARONSTAMM, M. D.,
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Urethral diverticula and *cul-de-sacs* are anomalies of development and are by no means so rare as some authorities would lead us to believe. The literature on this subject is unfortunately meagre and the little information one does gain on perusing it is very inadequate, so that one is tempted to regard these defects at best but as extremely infrequent ones affecting the urethral mucosa. Genitourinary surgeons of extensive experience have treated the subject in a very perfunctory manner and have paid but little attention to it in textbooks or otherwise. The reason why these urethral malformations are not more often encountered may be explained by the fact, that they give rise to little inconvenience in the patient under normal conditions, and are only accidentally discovered while examining the urethra for some other malady. As already intimated, the author finding nothing of interest recorded in the literature, had to rely solely upon his own resources in the elaboration and description of the subject designated by the title. This article is largely based upon a number of cases, witnessed both in private and dispensary practice.

There are two forms of these urethral peculiarities, viz. (1) the diverticulum, a short, linear, narrow, collapsible pocket opening into the urethral canal, from one-quarter to one-half an inch in length, of the calibre of a knitting needle, unyielding and nondilatable; and (2) the *cul-de-sac* proper, a larger, longer and more distended pouch stopping abruptly or rather terminating blindly in the mucous lining of the urethra, seldom exceeding one inch in length, and somewhat larger in calibre than the preceding one. Both of these varieties are congenital anomalies, rarely found further down than the first two inches of the anterior urethra, and are in most instances situated on the floor of the canal thus distinguishing them from enlarged and patulous urethral follicles which are commonly located in the roof of the urethra, in proximity to the fossa navicularis.

Of interest to the histologist is the embryological phase of these small developmental errors. The only plausible theory the author is able to venture regarding their embryonic evolution, is the faulty closure of that part of the genital cleft concerned in the formation of the urethral tract synchronous with faulty or delayed participation in the development of the epiblast lining it. Instead of the embryonic units, uniting and blending at the proper period, they undergo a process of interrupted or maldevelopment and eventuate into the mentioned abnormalities of the urethral wall. As remarked before they are only accidentally detected either on direct inspection and by means of the urethroscope or as a result of urethral instrumentation in the form of sounds or similar instruments employed for therapeutic or diagnostic purposes. They are apt to engage the point of the advancing instrument and if the operator still persists on meeting these obstacles in forcibly propelling the sound he may not infrequently lacerate or even perforate the blind extremity and thus establish a channel of communication between the *cul-de-sac* and the urethral canal.

As mentioned elsewhere these anomalies give rise to little discomfort but when once the seat of inflammatory involvement they may prove annoying and exceedingly rebellious to treatment, unless they are radically attacked by the method the author is about to outline. These anomalies may occasionally produce very vague symptoms, which are apt to puzzle the physician. They may for example simulate a mild case of urethritis while the history and accompanying symptoms do not at all warrant such a diagnosis. They are moreover the cause of many a case of prolonged urethral discharge, a veritable "urethrorrhœa" as it is termed by some, while microscopical examination reveals nothing of importance that could furnish a clue to the existing pathological state. Among other symptoms occasioned by them in a number of instances, painful micturition and urinary tenesmus may be pointed out. Should they become implicated in a gonococcic process concomitantly invading other portions of the urethral tract, they may form the starting point for strictures of various description, particularly that of the longitudinal or band-like type. They may also prove a prolific source of protracted suppura-

* Read before the Section in Surgery of the Michigan State Medical Society at the forty-first annual meeting, held at Jackson, Mich., May 23, 24, and 25, 1906.

tion, which is persistent and stubborn and does not seem to yield to the most painstaking and thorough treatment, until the real cause of the malady is perchance discovered. The urinary stream in cases of urethral diverticula is irregular, either radiating and bifid, or thin, rotating, and spirting, and necessitating some effort on part of the patient to expel it. This is falsely attributed to the presence of a stricture and erroneously treated for it. Should the sound which is chiefly used for the latter condition happen to be of small size, it may promptly engage in the opening of the pouch or diverticulum and refuse to advance, when the exact nature of the lesion may be readily ascertained. Many more symptoms may be detailed, but these are the main ones that demand our attention.

The treatment of these urethral defects is decidedly simple. It consists in first discovering the precise location of the sac or canaliculus by means of the urethroscope, or if this be not available with a small sound or probe; or a very fine olivary bougie may be used. With the former in position, the lacunar fold is then slit open with a small knife or tenotome throughout its entire extent to the very bottom of the urethral mucosa. Or, after the site of the channel or sac has been located, a urethrotome may be introduced, and by a sweep of the delicate blade the pocket divided. Local anæsthesia usually suffices to accomplish this result. As soon as the fold of mucous membrane has been severed, this should be immediately followed by the insertion of sounds in ascending sizes until the largest can be conveniently passed, and left in situ for at least ten minutes each time. This must be continued for a week or ten days to prevent the too premature closure or healing of the divided edges or subsequent fibrous contraction, which may ultimately lead to stricture formation. Rarely is the fold of mucous membrane so extensive as to require ablation or removal in toto. The two lateral bands become eventually atrophied and at a level with the urethral canal. Another method that may be utilized consists in the dilatation of the urethra either by means of a urethral dilator or what is still simpler with a pair of ordinary dressing forceps gently introduced and expanded to its utmost limit, provided, however, that the *cul-de-sac* is not situated too far posteriorly, severing the band by means of a small scissor, and then proceeding in the manner already delineated.

In conclusion the author wishes to emphasize the rule, that in all cases of chronic urethral discharge without any appreciable or assignable cause or lesion as a basis, one must always be on the lookout for these annoying little anomalies and institute a thorough investigation for their possible presence.

166 East High Street.

The Lowest Temperature yet Recorded is, we believe, that reached recently by K. Olszewski in an attempt to liquefy helium. By the aid of solid hydrogen he cooled the gas to —259 degrees C. under 180 atmospheres' pressure, then suddenly releasing the pressure to that of the atmosphere a degree of cold was created which by calculation from Laplace and Poisson's formula, amounted to —271.3 degrees C. Helium, however, did not liquefy, and he accordingly assumes that its boiling point must be below —271.—Through the *American Druggist and Pharmaceutical Record.*

Our Readers' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LIV.—How do you treat spasmodic croup? (Closed September 15, 1906.)

LV.—How do you treat acute articular rheumatism? (Answers due not later than October 15, 1906.)

LVI.—How do you treat sciatica? (Answers due not later than November 15, 1906.)

Whoever answers one of these questions in the manner most satisfactory to the editors and their advisors will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short; if practicable, no one answer to contain more than six hundred words.*

All persons will be entitled to compete under the regulations laid down by the postal authorities. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL.

The prize of $25 for the best essay submitted in answer to question LIII, has been awarded to Dr. L. S. Oppenheimer, of Tampa, Fla., whose article appeared on page 646.

PRIZE QUESTION NO. LIII.

THE TREATMENT OF BURNS.

(Concluded from page 704.)

Dr. George W. Ely, of Pittsburg, Pa., writes:

The treatment of burns naturally varies as the degree of the burn, and the extent of the surface involved as well the region subjected to the injury. It is also local and constitutional.

For burns of the first degree (simple erythema), the most satisfactory treatment that I have used is a cold, sterile solution of sodium bicarbonate, about four drachms to the quart. After the parts to be treated have been washed with a mild antiseptic solution, preferably Thiersch's, several layers of sterile gauze, saturated with the solution, should be laid over the burnt area and then bandaged in place. The dressing should be kept moist by occasional pouring over them, without removal, some of the soda solution, and the parts kept at rest. Equally satisfactory results can be obtained by the use of a normal saline solution applied in the same manner. There is not much constitutional treatment necessary for burns of the first degree, unless the area burnt is very extensive, when shock may be present; then, of course, the shock, as such, must be properly attended to.

In burns of the second degree (where blistering has occurred), the same treatment will give equally good results; more strict attention must, however, be given to the antisepsis. The blisters should not be disturbed for several days, or until reaction has set in, and there is a beginning formation of new skin under the raised epidermis. The advantages of this treatment are that it almost instantly relieves the intense burning sensation experienced by the patients, its simplicity and ease of application, also

that the articles necessary are always easily obtained near the scene of the accident or in any home.

The treatment of burns of the third degree (where destruction of tissue has taken place), varies as the progress from one stage to another is accomplished. If a considerable area of the body is burnt it will be necessary to attend first to the general condition of the patient. Shock is nearly always present and should be counteracted by the administration of stimulants, the application of heat to the surface of the body, and the giving of salines subcutaneously. Before any local treatment is instituted the burnt area and contiguous surfaces should be thoroughly cleansed and made sterile, then apply the soda solution as for first degree, excepting that the solution should be warm and the patient put to bed. The dressings should be frequently changed, and the parts washed with some mild, nonpoisonous antiseptic to prevent infection and septic absorption, a frequent cause of internal congestion, and probably the reason for duodenal ulcers so commonly seen in the preantiseptic days. If the tissues have been destroyed to any depth and there is charring, external heat should be applied locally to promote the separation of the necrosed tissues. After the sloughs have separated, if there were any, or merely the skin destroyed, the problem before us is the covering of the denuded surfaces. To accomplish this it has been my practice to cover the granulating surfaces with narrow strips of zinc oxide adhesive plaster. They should be placed in such a manner as to cover the entire raw surfaces and a considerable portion of the skin upon all sides. The parts then are to be tightly bandaged so as to press the plaster firmly and evenly against the denuded surfaces. When the plasters are removed a few days later, it will be found that they do not adhere to the underlying tissues, owing to the moisture, and that here and there, there will be little islands of new skin formed by the proliferation of the epithelial cells. Instead of the adhesive plaster, sterile rubber tissue may be used to cover the burns. Over the rubber tissues is to be placed several layers of sterile gauze, and all held in place by a well adjusted bandage. This dressing may be kept moist with a normal saline solution, and if desired to hasten the proliferation of epithelial cells, heat may be applied outside the dressings. The object to be gained by the use of the rubber tissue or the adhesive plaster is to permit the normal processes of repair to go on unimpeded and to protect the delicate epithelial cells from being disturbed. The use of dressings, such as the different varieties of gauze and ointments, which at each dressing tears away and destroys the newly formed cells is to be depreciated, for by so doing the healing process is retarded. If the granulations become large, pale, and flabby, they should be cauterized with pure carbolic acid, and stimulated for a few days by balsam of Peru, then the former treatments should be taken up. Sometimes the adhesive plaster irritates the normal skin; when this occurs the rubber tissue should be substituted. In those cases where the area involved is extensive or the destruction has been deep, it may be necessary to resort to skin grafting in order to shorten the time of treatment. When so, Thiersch's method is best.

It is to be borne in mind that the patient's general condition should be looked after; the bodily functions, especially the emunctories, kept active, the patient well nourished and at rest.

Dr. Herman T. Radin, of New York, remarks:

The fundamental idea in the treatment of burns should be the application of the most approved surgical principles. That is, where there are constitutional symptoms these should be dealt with like those of surgical shock, and the burns themselves should be treated locally, according to the recognized principles of wound treatment.

Constitutional Treatment.—More or less systemic disturbance may occur with even moderately small burns, but as a rule, burns involving a third or more of the skin surface will give considerable shock, and will probably prove fatal. Get the patient to bed as rapidly as possible, and prepare forthwith to combat the shock. The patient should be moved as little as possible, and his clothing cut off if necessary. Give a hypodermic injection of morphine for the pain. This may have to be repeated. Wrap the patient up well, and apply hot water bags or bottles to the feet, as there is often much heat radiated from the body by the extensive destruction of skin. Give stimulants, like strychnine, alcohol, digitaline, caffeine, in good sized doses. Hypodermic administration is best. Ether or camphor hypodermically may be beneficial. Hot black coffee may be given by mouth or rectum, by which latter method other stimulants also may be given. Where there are signs of collapse, rectal injection of salt solution, one or two quarts, 110° to 120° F., or hypodermoclysis of salt solution, may be practised. Sometimes collapse may be avoided if this is done early. Venesection should never be done in burn cases. Keep up this stimulation until the patient reacts well from the shock. Keep the bowels and kidneys functionating properly. Give enemata for the bowels. Watch for the earliest signs of involvement of internal organs.

Local Treatment.—The wounds themselves should be attended to as soon as the general condition permits. For the pain we may also use cold locally, but not for too long periods, or we may seriously interfere with the nutrition of the already damaged skin. Carefully cleanse the burned areas with antiseptics. The best one, I believe, is hydrogen peroxide. Bichloride of mercury may be used for cleansing, but for dressings it is apt to irritate the skin. Carbolic acid should not be used in any strength or form. If there are any blebs they should be aseptically opened, and the serum evacuated, but the elevated skin should not be cut away. However, all dead skin and other dead tissue should be entirely removed, where possible.

Dressings.—The best dressings are wet dressings of nonirritating antiseptic solutions. Besides their other advantages such dressings will, of themselves, relieve pain. The one I like best is aluminum acetate; lead poisoning from this practically never occurs. Wet boric acid dressings will also be agreeable. The dressings should be applied on sterile gauze, and kept moderately

wet all the time. The parts should be bandaged. Such dressings will prevent pus formation and keep the parts clean. They should, therefore, be changed as seldom as possible, as frequent dressing disturbs repair. Intervals of from three to five days will often be sufficient. If the burns are on the extremities, these should be kept elevated.

In clean cases dry antiseptic powders, like bismuth, etc., may occasionally be used. Ointments and oils (like the time honored but filthy Carron oil) should never be used, if they can be avoided. They are unpleasant and hard to clean off; they keep back the wound secretions, and they encourage the formation of pus. If, however, they must be used, they should be bland and smooth, and not made with petrolatum.

If the granulations are exuberant, they should be burned down with a silver nitrate stick. In extensive burns, where there is little or no tendency toward new skin formation, skin grafting (Thiersch) is advisable. Try to prevent the occurrence of contractures or adhesions, if these occur, they must be treated according to recognized surgical procedures.

Dr. Adolph Bonner, of Brooklyn, states:

The treatment of burns resolves itself into those measures, directed to the local tissue changes, and directed to combat the complex constitutional disturbances termed shock. The usual classification of burns into the first, second, and third degree, is acceptable, and I shall describe the treatment under three headings.

Treatment of burns of the first degree. It need hardly be mentioned, that in this degree as in the others, surgical cleanliness should be established and maintained. Apply moist dressings, by either solutions of aluminum acetate, Thiersch's, or five per cent. boric acid. After subsidence of the hyperæmia, keep the part dusted with either bismuth, sub nitrate, or talcum, and protect from injury by covering with gauze, and bandage, until all traces of the accident have disappeared.

Treatment of burns of the second degree. Incise blebs at the most dependent portion, trim off raised layers (with a scissor, half curved on the flat and having rounded points) as near to the border of the healthy skin as possible; mop the exposed surface with sterile gauze, until thoroughly dry; dust well with bismuth subgallate or thymoliodide; cover with sterile gauze, and bandage, and leave this dressing undisturbed from ten to fourteen days, when healing will be found to have taken place. Protect surface from further injury, until the tissues have become normal in appearance.

Treatment of burns of the third degree. This degree of burn is marked by true tissue destruction of varying depth and area, with consequent sloughing. Treat and maintain wound, as an open one, affording free drainage by packing with mild iodoform gauze, and moist dressings, using the already mentioned solution. Change of dressings should be as frequent as the case may demand, but due care must be exercised, that the process of granulation be not destroyed; with the same view in end, irrigations should not be too forcibly made, nor the solution used for such purpose, stronger than normal saline, Thiersch, or boric acid. Trim off all shreds, carefully avoiding cutting away any tissues, which show signs of maintaining their nutrition. In small areas, the granulation process should be allowed to go on, until it is flush with the surrounding skin, when moist dressing shall be discontinued, and the area covered with a boric acid ointment or gauze, until full regeneration has taken place, followed by protection of parts as described, until a scar has well formed. Where granulations are too exuberant, use the moist dressing of silver nitrate solution of from 1:10,000 to 1:5,000, or the silver nitrate stick may be used. Where the continuity of tendons is broken by destruction of its tissue, efforts directed towards filling the gap should be instituted by the usual methods of lengthening tendons, as soon as practicable. In wounds of extensive area, the process of repair will not only be hastened, but the consequences of large contracting scars be avoided by the skin graft, as soon as a firm bed of granulation is formed. Comparatively recent reports are given that x ray treatment will stimulate true skin growth, I would therefore suggest that this be tried in granulating surfaces, with hopes of getting some result, though I do not speak from personal experience.

Shock should be combated by cardiac stimulants, and when pain is intense, opiates may be used. The kidneys and intestinal tract should be stirred to greater activity, by the administration of diuretics and purges respectively. Give bromides for mental excitement. Mental and physical rest should be enjoined and fluid diet be given.

Dr. G. R. Plummer, of the United States Navy, notes:

Any kind of oil or unguent is bad for a wound, but it must be used at first for the relief afforded as the wound is caused by a burn. Carron oil, the old standby, relieves the pain, but does not prevent suppuration, so the lime water has been dropped and an ounce of borax or boric acid to the pint of linseed oil substituted. As colored oils are unsightly, liquid petroleum is now used, and works beautifully. In engine rooms and in the Tropics the amount of dressings is quite an item, on account of the heat, so I use plain gauze, opened out, and gauze bandages.

In my practice burns are frequent and extensive, and I make it a point to have ready a burn treating outfit. It consists of several pint bottles of a mixture of liquid petrolatum and boric acid (one ounce to a pint), which have been boiled, bottles and all, and several five yard rolls of plain gauze and gauze bandages. No attempt is made to clean the man up; coaldust, etc., is ignored. The clothing is removed the easiest way, cut off if necessary, and the burned area soaked with the petrolatum mixture, covered with the spread out and bunched-up gauze, and held in place with gauze bandages in such a way as to best afford comfort and soak up the serum. In three or four days the dressings are removed, blisters pricked, and a fresh dressing, like the first, applied. This is repeated every few days for two weeks, when just an ordinary granulating surface remains, which should be treated by warm douches of an iodine solution, 1:1,000, and dry dressings.

Therapeutical Notes.

Injections of Ergotinin for Varicose Veins.—Le Menantdes Chesnais, in a recent communication to the Société de médecine pratique (*Journal de médecine*, September 2, 1906), reported several cases of varicose veins which he had treated with successful results by hypodermic injections of ergotinin. The injections were made at intervals of two or three days, and in doses of about five drops. They were made in the tissues around the vessels with a view of exciting the muscular tissue in the vessel walls to contraction, which action persists for several weeks. The injections are no more painful than those of morphine, and do not cause any more local accidents than the latter when carefully administered.

The Treatment of Chronic Constipation Without Medicine.—Friedel (*Le Progrès médical*, September 1, 1906) deprecates the constant resort to purgatives, and asserts that constipation can generally be cured by hygiene and physical applications alone. Hygiene, by itself, is sufficient to cure many cases. Life in the country in the open air, an almost exclusive diet of vegetables, and systematic daily exercise, are sufficient to regulate the intestinal functions, and usually give excellent results. When it does not entirely succeed a special regimen may be given of laxative food, such as milk in the form of gruel, farinaceous articles, leguminous vegetables, whole wheat bread, and butter. In addition, every second day, a large injection of warm sweet oil may be introduced slowly into the rectum in the evening before retiring, and retained until the following morning. If a movement does not take place then it can be started with an enema of simple water. There are cases, however, in which these measures fail, and they must be supplemented by gymnastics and massage of the abdomen. In addition, the daily application of the faradic current will often be found effective. This need not last over two minutes. The technics is very simple and can be carried out by every practitioner.

A Novel Application of Serum Therapy in Pulmonary Tuberculosis.—The observation has been made that patients, who have experienced an attack of unilateral pleurisy with effusion, in which recovery follows through the spontaneous absorption of the exudate, seem to possess, by virtue of this cure, a veritable immunity from pulmonary phthisis. Landouzy proved the tuberculous nature of this form of pleuritic inflammation, which he called a primitive pleurotuberculosis. It appears that in the course of this inflammation, accompanied by exudation, there is developed an antibody, or protective agent, which confers immunity against the bacillus of Koch. The practical lesson deduced from this fact is that the course of such a pleurisy is not to be interrupted by antipyretics, diaphoretics, diuretics, by thoracentesis, or, in fact, by anything which would interrupt the regular course of the disease, so that the absorption of the exudate may proceed spontaneously and gradually. Baldassari and Minerbi (*Gazzetta degli ospedali e delle cliniche*), supposing that in convalescent cases there is to be found a protective agent in the blood, have treated two cases of recent tuberculosis affecting both lungs, with subcutaneous injections of blood taken from a patient with pleurisy in the state of effusion. Under this seropathic treatment the symptoms gradually ameliorated, and the general and local conditions became improved. One patient returned to work and, in the other, the conditions are declared to be very satisfactory.

The Results of Vaccination Against Variola by Hypodermic Injection.—Recognizing the dangers of infection of the open sore produced by the ordinary method of using the vaccine virus, a number of observers have endeavored to obviate them by introducing the vaccine by another method. Nobe (*Wiener medizinische Wochenschrift*, August 9, 1906) reports the results of vaccinating seventy-four children by hypodermic injection, using one or two tenths of a cubic centimetre of a suspension of vaccine lymph in sterilized, physiological serum. The proportion of lymph to the serum varied from 1 to 166 to 1 to 16. The needle of the syringe was buried its whole length beneath the skin in order to avoid inoculation of the derma. For ten days after the injection nothing unusual was observed at the locality of the injection (on the left arm); then a subcutaneous infiltration gradually developed, accompanied by erythema, which took several days to fade away. This result occurred in seventy-two out of seventy-four cases. In order to determine the protective character of the inoculations, vaccinations were practised upon the same children, at various times, according to the usual method. It was found that those who were vaccinated previous to the tenth day after the inoculation pursued the usual course of development. The results, however, were positive only when made before the tenth day, and were always negative when made after this date, which would seem to show that on and after the tenth day immunity by inoculation became effective in conferring immunity from variola.

Comparative Effects of Distilled Water and Normal Salt Solution in Experimental Anuria.—In rabbits made anuric by extirpation of the kidneys, Campani (*Clinica chirurgica*, July, 1906) has made a comparative study of the action of subcutaneous or intravenous injections of distilled water and of salt water, or so called physiological serum. When the animals were abandoned to themselves they perished, on the average, in about fifty-two hours after the operation, but this was extended to one hundred and twenty-three hours, if injections of distilled water were given under the skin to the quantity of 100 c.c. daily. If the normal salt solution were used in the same dosage the period of survival was only fifty-five hours. At the autopsy of the rabbits which died without injections and of those which received the salt solution, the blood was always found in a liquid condition in the heart and in the large vessels, whereas in the animals which received the distilled water it was found to be coagulated, as it would be normally. Finally, in the rabbits treated by the physiological serum, local areas of œdema were found, which were more copious than in the rabbits treated by dis-

tilled water, and which were not seen at all in those which were not injected. The conclusions to be drawn from these experiments are that injections of distilled water in the condition of experimental anuria give results appreciably better than injections of salt solution. The distilled water in penetrating the tissues (as is shown by the local œdemata) withdraws from them the products of organic waste and prevents their passage into the blood for a certain time, and thus retards the fatal result. On the contrary, the physiological serum, being already charged with salt, is not able to temporarily withdraw the toxic substances from the tissues.—Through *Le Bulletin médical*, September 1, 1906.

Poisoning by Eggs.—In an inaugural thesis upon the subject of Poisoning by Cream Puffs, Dr. Le Coq (*Journal de médecine*, May 6, 1906) calls attention to the existence of a poison in hen's eggs, which he calls *ovotoxine*. Even the best eggs may cause digestive disorders, owing to idiosyncrasy in certain individuals; but in most cases when poisoning occurs after the use of cream puffs, or similar food containing eggs, it is caused by the presence of this special toxine. This may exceptionally be present in a fresh egg, but rapidly develops in stale eggs. Upon breaking the shell its presence is generally manifested by a peculiar putrid odor, which is most marked in the yolk. The odor may not be manifested by the white and yet this may contain considerable quantity of toxine. He warns bakers against the use of eggs which have been cracked for a time, and in particular, these should never be mixed with cream, which seems to be especially suited to produce this septic alteration in the eggs. The use of desiccated and preserved eggs is absolutely condemned. The practice of feeding putrid meat or the meat of animals dying of infectious disease, like anthrax, is a fruitful source of infection of the white of the eggs by the pathogenic microbes which pass from the digestive tube to the cloaca. As it is absolutely impossible to distinguish between a fresh egg that is toxic and one that is not toxic, the author recommends the abandonment for purposes of alimentation of all raw eggs and of eggs insufficiently cooked. In particular, he advises that under no pretext should raw eggs be allowed in combination with cream in pastry, for the reasons stated. It is absolutely indispensable that all the constituents of the cream puff, floating island, or similar preparations should be subjected to a temperature of 100° C. (212° F.) for a sufficient length of time to sterilize them perfectly. Too short an exposure in boiling eggs, for instance, only coagulates the albumen without sterilizing the interior of the egg.

The Special Conditions Calling for the Administration of Purified Bile.—Before the Société médicale de l'Elysée, Nigay recently read a communication on the therapeutical action of the bile, or biliary opotherapy, in hepatic and gastrointestinal disorders (*Journal de médecine*, May 6, 1906). Basing his conclusions upon the physiology of the bile, he shows the relation of certain pathological states to disturbance in the secretion of the bile or interruption to its passage into the intestines. Any obstacle to the flow of bile from the hepatic ducts, on the one hand, by retention, leads to the passage of bile into the general circulation; and on the other hand, by its suppression or the absence of this agent from the intestine, causes certain digestive disorders, while later the general health is disturbed. In cases without obstruction the consequences are similar, except that there will be no retention, and the symptoms will be less marked and slower in developing. However, in either case, whether there is retention or there is deficiency of secretion due to inflammatory or septic organic changes, the hepatic cells sooner or later are affected, and the normal secretion of bile becomes perverted. It has been found by numerous observers that in cases of suppression, diminution, or alteration of the biliary function, resulting from various forms of liver disease, the administration of bile plays an important part in the digestion, and especially in the absorption of fat. In addition to aiding the digestion of fat and to its well known laxative effect, bile has a decided antiseptic action in the intestine. According to Kuss and Mathias Duval, it also exerts an important influence upon the intestinal mucosa by favoring the renewal of the epithelium. The recent researches of Roger have established the very important rôle which the bile plays in protecting the intestinal mucus by opposing the coagulating action of the mucinase, thus keeping the mucus in a liquid condition. Insufficiency of the bile, therefore, causes coagulation of mucus and the production of glairy discharges and false membranes. The establishment of a biliary fistula in animals leads to emaciation and a condition of denutrition of the entire organism. In pathological conditions causing retention or biliary insufficiency in the human subject, analogous results are seen; the fats and a part of the albuminoids remain unabsorbed; the fæces are dry, friable, clay colored, often acid, putrid, and of a repulsive cadaveric odor; constipation is obstinate, dyspepsia follows, and the general health becomes seriously impaired. Among these ætiological conditions are hepatic colic, attending gallstones; infectious jaundice; simple cholæmia (sometimes attended by bilious diarrhœa; at others, by constipation); tumors compressing the bile duct, and finally mucomembranous enterocolitis. The latter condition, according to Glénard, is the result of hepatic disorder. It is evident that biliary insufficiency is of much greater consequence than is generally admitted. The administration of bile, therefore, merits an excellent standing in therapeutics. In ordinary medical doses, bile is not toxic. In larger doses it is only toxic on account of the bile pigment, which can be removed and the agent made colorless. The remedy is indicated formally in biliary lithiasis, in jaundice, and, in general, in all conditions in which there is an insufficiency of the hepatic function. In dyspepsia, it is also useful to overcome constipation and avoid enterocolitis, conditions which are most frequent consecutive to biliary insufficiency, and therefore controllable by Vichy water and biliary opotherapy.

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A SUBSTANTIAL ADVANCE IN RECIPROCITY.

In this issue we publish a notable communication by the new medical member of the Board of Regents of the University of the State of New York, Dr. Albert Vander Veer, of Albany. Dr. Vander Veer has always shown exceptional devotion to the common weal and particularly to the welfare of the medical profession. Consequently he has long been intimately acquainted with our educational conditions. We may presume that this close knowledge of such matters on his part has made it possible for him to master, in the brief period which has elapsed since he was made a regent, the situation in regard to interstate reciprocity in medical licensing. Nevertheless, he must have snatched much time from the pursuit of a busy professional career and devoted it to perfecting his understanding of that situation. For this, as well as for his many public services in the past, he is sure to receive the gratitude of physicians in common with other well informed and conscientious citizens.

The agreement that has been reached by the licensing bodies of the great States of New York, New Jersey, Ohio, and Michigan—contiguous save for the spur of Pennsylvania that separates New York from Ohio—goes far to justify Dr. Vander Veer's forecast that "reciprocity can become effective in the near future between a group of States extending from the Atlantic to the Pacific." Of course this agreement does not by any means constitute all or nearly all that has lately been achieved in furtherance of interstate reciprocity. Nevertheless, it is a long stride forward. Reciprocity coterminous with the boundaries of the country is what all physicians hope to see ultimately and what we believe will come to pass sooner than is generally imagined, though it will have to come slowly. While it is doubtless true that, as is remarked in a government publication cited by Dr. Vander Veer, "weak States cannot maintain the standards maintained elsewhere, and strong States cannot afford to lower their standards," the following, taken from the same publication, is equally true: "The present need of less multiplication of standards, however, is most important. Instead of a separate standard for almost each political division, two or at most three standards should answer for all. In the first group should come the strongest States, and the standards maintained by these States would act as a stimulus to weaker political divisions." It is to be taken for granted, of course, that the words "strong" and "weak," used in this connection, have no invidious meaning, but relate solely to conditions that for the time being render stringent or comparatively lax requirements expedient.

ON SELF MUTILATION.

"Among the pathological manifestations of the human activities, automutilation is one of the most striking. Singular and dramatic in its effects, obscure and complex in its causes, it is at the same time rare enough to attract a lively interest and frequent enough not to discourage research." Thus writes Dr. Charles Blondel (*Tribune médicale*, September 8th) in an interesting study of self mutilation bearing particularly on its manifestations as seen in voluntary castration.

It has been recognized for years that self mutilation is met with in various psychopathic states, and the types of mutilation chosen are very diverse. Enucleation of the eye, tearing out of the tongue, opening of the abdomen, all have been observed. Of all the various forms, however, voluntary castration offers the most striking and characteristic phenomena.

Time and place play little rôle, for self castration has been known for many ages and among all races. Mantigon, for instance, relates the history of a Chinaman who, unable to obtain any money from a pawnbroker for his few household goods, cut off his testicles and obtained the sum of nine francs for the commodity.

The motives, however, which have led to the

mutilation are not always so readily traced. It is not unnatural to suppose, says Blondel, that self mutilation should be so prevalent in the genital sphere, since the sexual functions, while perhaps little spoken of, yet occupy so much of the thought of the individual. It seems certain, however, from the collected histories that self castration occurs more often among the insane, notably in those suffering from dementia præcox or general paresis, and often in delirium tremens.

In the many instances of self castration in patients suffering from dementia præcox, self accusations, founded on the sense of sinfulness connected with persistent masturbation, have supplied the predominant motives, the patients hoping thus to eliminate an evil which they associate as a potent cause for their breakdown. In general paresis the apparent motive leading to self mutilation shows itself in the familiar guises so characteristic of the paretic's general bizarre, automatic, absurd, and incoherent behavior. Excessive alcoholism brings in its train marked intellectual deterioration which in part accounts for the large number of self mutilations in drinkers; the mental confusion of delirium tremens is also responsible for a large share. The violence of many of those patients often leads to fatal results. Castration in the old is almost invariably a sign of senile decay.

The most striking series of cases of voluntary castration have been met with in psychopathic individuals, perhaps some of them in the early stages of dementia præcox, in whom religious ideas have offered the most forceful motive for the act. Thus, a number of instances are on record where priests committed the act because of the disturbances offered by sexual thoughts which could not be excluded during their devotions. To acquire a worthiness due to their high calling has been ascribed as the motive in other instances.

Blondel calls attention to the association between religious motives, so manifest in many self mutilators, and the teachings of Christianity, in which so much emphasis is laid upon asceticism, especially in relation to the sins of the flesh. This relation, however, cannot be said to afford a comprehensive explanation for the phenomenon, since it is known that self castration was frequently practised in non-Christian lands and in pre-Christian times, even attaining the dignity of a rite among the priests of Cybele and of Diana of Ephesus. It is much more satisfactory to look for the interpretation of this morbid manifestation in the psychopathic constitution, particularly made evident in depressed insane states, either of maniac-depressive insanity or of dementia præcox.

THE PHYSICIAN IN FICTION.

Anyone who is brought intimately in contact with the work and life of physicians cannot fail to be struck at some time or other with the possibilities which the practice of medicine offers to the writer of fiction. Dramatic situations, intricate psychological action and reaction, irresistibly amusing incidents, and heartbreaking instances of martyrdom and heroism are matters which come so frequently under the doctor's observation, and in which he is so often called upon to play a part, that no other profession can compete with his in furnishing material for the novelist. That this material is not drawn upon even more frequently than it is is probably due to the pitfalls which beset the layman, in this day of modern realism, when he attempts to depict the life of the physician graphically and naturally. In the first place, it is extremely easy for such an author to destroy by a single word the verisimilitude of his picture. Probably very few, if any, of the magazine stories dealing with matters medical could come unscathed out of the ordeal of scrutiny by a medical man. But perhaps that is too much to ask, and one should be content if they betray no inconsistencies to lay readers, since these are so much in the majority.

In his presidential address at the meeting of the American Medicopsychological Association in Boston, in June of this year (*American Journal of Insanity*, August), Dr. C. B. Burr discusses the physician in fiction, and emphasizes the rough handling which he has received at the hands of certain writers. Irritating enough are the pictures of incompetent and unscrupulous medical men, or even those which depict rough and boorish manners as an apparently necessary concomitant of professional superiority. But it may safely be said that the tendency of recent fiction is to exalt the character of the physician rather than to detract from it. And if some of these efforts do partake of the spectacular and make their subjects a little beyond human probability, after all it is only fair that a class which must lack recognition of many of its merits should by way of compensation gain credit for some which it perhaps has not.

As Dr. Burr points out, it is in the work of the greatest artists of literature that we find things most nearly as they are in real life. George Eliot's Dr. Lydgate is a very human man, no stronger, no wiser than many whom we all know, and possessed of those same high ideals, that

same exacting conscience which we have all seen in numberless physicians, young and old. The disasters that overtake him are the result of his own weaknesses and lack of wisdom quite as much as of the untoward circumstances that precipitate them. Dr. Burr rightly remarks that "a discriminating taste in sweethearts is one of the most important assets of a physician," and more than one has discovered, after the sweetheart has become the wife, that, like Lydgate, he did not possess this asset. A professional man's career is far more in the hands of his wife than a business man's is, and one has only to see what a gracious, tactful, intelligent woman can do toward a physician's success in the best sense of the word to realize how fatal the other sort of marriage can be.

Another difficulty which confronts the writer of fiction in "doctor stories" is that so many of them deal with matters which popular taste excludes from nonprofessional literature, at least in this country. Someone has wittily, if somewhat flippantly, remarked that the novelist "never hits below the belt," and all his characters that die must succumb to diseases fit for parlor conversation. This restriction is less felt, however, by the French and Russian authors, and Dr. Burr reviews striking portraits of physicians from the works of Zola, Tolstoi, and Dostoivsky. Several of these are distressingly revolting, but one can tolerate them more easily than the penny dreadful delineations of medical villains in Wilkie Collins, because they are, after all, true to life. Such men, it must be admitted, do exist. There is in reality something about the ethics and ideals of the medical profession which can make a man who is comparatively careless in conduct in other directions scrupulous and strong where such ethics and ideals are concerned. When he is so weak or so bad that these do not have weight with him, he becomes that most dangerous of bad men, a bad physician. But we like to think that for one such there are many who, like those we know, have grown so in the habits of altruism, patience, and self control that they meet, as all in the day's work, tasks and trials and temptations which other men would succumb to with a sense that they were excusable in so doing. And this is the view which Dr. Burr finds largely prevailing in fiction.

THE FATE OF CALOMEL IN THE BODY.

It is one of the established facts of pharmacology that calomel, when introduced into the stomach, is not completely eliminated with the fæces. It seems certain that a small amount must enter, in some modified form, into the blood stream, and thus bring about many of the reactions known to follow the administration of this potent remedy. The swollen, painful, and enlarged liver of the days of our forefathers, following the enormous doses of calomel then given, needs only to be mentioned to suggest that the cells of the liver must be acted on by this specific substance. The marked diuresis, so valuable an adjunct of calomel therapy, is also to be interpreted as a result of a specific irritation of the kidney epithelium; and the well known action on the intestinal tract further speaks for a special stimulation by some soluble substance derived from the calomel.

These and other striking facts have led to many investigations into the fate of calomel in the body, and in a recent paper from the Institute of Experimental Medicine in St. Petersburg (*Zeitschrift für physiologische Chemie*, September 6th) M. H. Nemser has shed some light on the probable series of events that takes place when calomel is taken into the gastrointestinal tract. Making use of intestinal fistulæ in dogs, and test tube experiments as well, he comes to the conclusion that the acid of the stomach has little or no action on the calomel, and that if substances like corrosive sublimate can be formed from calomel in the body, which on *a priori* grounds has been assumed as probable, such mercuric compounds are at least not formed in the stomach within an hour and a half. The solution of portions of the calomel begins in the duodenum, and, reasoning from his fistula and test tube results, Nemser believes that the pancreatic juice is the most potent factor in effecting the solution. What rôle sodium chloride (from the gastric juice) or the substances of nutrition may play in aiding this solution is as yet undetermined.

As to the absorption of the portion of calomel made soluble by the pancreatic secretions, the author believes that this takes place not higher up in the intestine than the ileum, in which place the process of solution reaches its maximum. It is highly probable that the soluble mercuric compound set free is either absorbed in the large intestine or precipitated by the sulphides present in that viscus, since the fæces contain no trace of soluble mercurial substances. The kidneys, the liver, and the large intestine retain a portion of the calomel for a considerable length of time, but as to the form of mercuric compound which is formed from the calomel in the process of solution, it is to be regretted the author does not enlighten us.

THE LOCALIZATION OF MUSICAL TALENT IN THE BRAIN.

From the time of the early scientific descriptions of the brains of eminent men, made by Rudolf Wagner in 1860, to the present time, the subject of the relation of brain development to intellectual capacity has commanded the serious attention of the anthropologist as well as the enlightened curiosity of the intelligent layman.

Broca, Retzius, Karplus, Möbius, Hervé, Gall, and Schwalbe, with many others in Europe, have been among those who have carried on particularly active investigations as to this relation, while with us Burt G. Wilder and E. A. Spitzka have been most prominent, the former, as is well known, having for years urged the desirability of the donation of the brains of men of distinguished ability to his collection for purposes of study and reference.

Dr. Sigmund Auerbach is the latest to enter this interesting field, presenting from the institute of Professor Edinger, of Frankfort, a study of the brain of Naret Koning, late director of the opera at Frankfort, with comparative notes on the brain of the well known composer Hans von Bülow, also in Edinger's collection, with a digest of the results obtained by other workers in the field who have published their observations on the brains of men possessed of striking musical ability.

Retzius, by his painstaking measurements of the topographical features of a hundred brains, has supplied the figures for a comparative study, and Auerbach, in a somewhat lengthy and detailed description (*Archiv für Anatomie und Physiologie, anatomische Abteilung,* 1906, 2-3), lays special stress on the comparatively rich development that he finds, in the brains under consideration, of the supramarginal gyrus and the adjacent supratemporal gyri, both regions which the many studies of Flechsig, Hitzig, and others have shown to possess a rich plexus of associations connected with the auditory impressions, and hence likely to be more elaborate in the cerebral structure of those endowed with musical talent of a high order.

It is of further interest to note that in the brains of both Koning and von Bülow the richer development was more marked on the left side of the auditory areas. Whether in right handed individuals this will be found to be universal in those of musical talent remains to be seen. Auerbach further brings out the striking fact that the external configuration of the skull corresponds in some distinct degree to the internal development. Studies of the photographs of the musicians von Bülow, Koning, Loven, and Gyldéns, and of the mask of Beethoven, all show a more or less pronounced temporal boss, which, it may be recalled, is in accord with one of Gall's interesting generalizations as to the localization of the musical faculty.

It is to studies of this kind that we must look for confirmation and correction of the anatomical results of such investigators as Flechsig, von Monakow, Wernicke, and others, and it is to be hoped that the appeals made for material of this kind by Wilder and his followers may be made known over a wide area and be met by hearty cooperation on the part of those men of talent or ability who, when they have put on immortality, may leave the empty temple of their minds to the students of brain anatomy.

ANÆMIA FROM THE BOTHRIOCEPHALUS LATUS.

That there are generated by tapeworms certain toxines which are poisonous to man has been lately demonstrated by T. W. Tallquist, of Copenhagen, in his book, *Om aktiva Substanser i den breda Bandmasken*, reviewed by R. Sievers in the *Nordiskt medicinskt Arkiv* for September. *Bothriocephalus latus* produces two substances. One of them is a proteolytic ferment which has, besides others, the property of dissolving the cast off proglottides of the tænia; this is called the bothriocephaloenzyme. The other is a toxic substance which, as bothriocephaloagglutinin, attacks the red blood corpuscles and after agglutination dissolves them. It is possible that from this substance may be extracted a positive toxine, the bothriocephalolysin. Each one of these substances is latent in the combination formed by it, and can only be produced by autolysis, especially the red blood corpuscle toxine.

After having demonstrated these chemicobacteriological data, the author develops the following theory to explain the anæmic condition in man resulting from the attacks of the tænia. The different proglottides of *Bothriocephalus latus* possess normally a blood destroying property which is not exerted by the living parasite. Only when these segments die off this toxic substance becomes free, is carried into the circulation, and acts there as a toxine upon the red blood corpuscles. As the destruction of these segments of the parasite continually takes place, toxine is permanently produced and thus incessantly attacks the red blood corpuscles, resulting finally in anæmia.

News Items.

NEW YORK CITY AND STATE.

Charitable Bequests.—By the will of Adolph Herrmann, Mount Sinai Hospital receives $5,000; the Montefiore Home receives $2,500, and the Mount Sinai Training School for Nurses receives $500.

The Medical Society of the County of Richmond.—The programme for a meeting held at the Staten Island Academy on Wednesday, October 10th, included a paper on The Cervix Uteri, Before, During, and After Labor, by Dr. A. Ernest Gallant.

The Medical Society of the County of Ontario, N. Y.—The following programme was arranged for the annual meeting of this society held at Canandaigua on Tuesday, October 9th: The President's Address, Dr. W. B. Clapper; Tumors of the Thyreoid from a Surgical Standpoint, Dr. M. B. Tinker; Preventive Medicine, Dr. C. B. Braman.

The Buffalo Academy of Medicine.—A meeting of the *Section in Obstetrics and Gynæcology* will be held on Tuesday, October 23rd. The following programme will be presented: Some Further Observations on Why Minor Gynæcological Operations Fail to Give Results, by Dr. Sigmund Goldberg; Gonorrhœa in the Pregnant Female, by Dr. Cornelius J. Carr.

The Medical Society of the Staff of St. Luke's Hospital, Utica.—At the annual meeting of this society, held on Thursday, October 4th, Dr. M. W. Gibson read a paper on Functional Disorders of the Heart. Officers for the ensuing year were elected as follows: President, Dr. W. M. Gibson; vice-president, Dr. Earl D. Fuller; secretary and treasurer, Dr. Andrew Sloan.

The Wesley M. Carpenter Lecture.—The annual Carpenter lecture will be delivered at the New York Academy of Medicine, this year, on October 18th, by Dr. Harvey G. Cushing, of Baltimore. The subject will be "A Discussion of Some Early and Some Late Complications of Cranial Injuries, Based Upon the Histories of Three Illustrative Cases." The lecture will be illustrated by photographs and diagrams.

The Utica, N. Y., Medical Library Association.—At the annual meeting of this association, held on Monday, October 1st, officers were elected as follows: President, Dr. F. J. Douglas; vice-president, Dr. Frost; secretary, Dr. F. W. Smith; treasurer, Dr. J. E. Gage; librarian, Dr. Smith Baker; trustees, Dr. Farrell, Dr. Comstock, Dr. Fuller, Dr. Nelson, Dr. Crim, Dr. Kilbourn, Dr. Crumb, and Dr. Seymour.

The Medical Society of the County of Orleans, N. Y.—At the annual meeting of this society, held at Albion, N. Y., on Wednesday, October 3rd, the election of officers resulted as follows: President, Dr. Edward Munson, of Medina; vice-president, Dr. A. W. Jackson, of Albion; secretary and treasurer, Dr. John Dugan, of Albion. The next meeting will be held in February at Medina, when a lecture will be given and a discussion on important medical subjects will take place.

East Side Physicians' Association.—The following programme has been arranged for a meeting to be held on Friday evening, October 19th, at Beethoven Hall, 210 East Fifth Street: Papers: Dystocia Due to Contracted Pelvis, by Dr. John Osborn Polak; The Indications for Forceps in Dystocia, by Dr. Franklin A. Dorman; The Management of the Rigid Cervix in Labor, by Dr. Ralph H. Pomeroy; discussion by Dr. Charles Jewett, Dr. Edwin B. Cragin, Dr. Simon Marx, Dr. R. L. Dickinson, Dr. Austin Flint, Jr., Dr. A. Brothers, Dr. S. Wyllis Bandler, Dr. J. Clifton Edgar, and other members; Presentation of Cases and New Instruments.

A Visitor from Switzerland.—Dr. George W. Jacoby writes to us that early in November Dr. H. S. Frenkel, of Heiden, Switzerland, who has gained an extended reputation for his special work in the treatment of locomotor ataxia, will visit New York and will endeavor to prove by demonstrations, how much can be accomplished in severe cases of the disease by his treatment. Dr. Frenkel will remain several months in this country and has promised that during his stay he will read papers before the New York Neurological Society, the Medical Society of the County of New York, and the German Medical Society.

The New York Pathological Society.—The following programme was arranged for a meeting of this society held on Wednesday evening, October 10th: (a) A Case of Stenosis of the Arch of the Aorta (b) A Case of Sarcomatosis with Probable Origin in the Bone Marrow, by Dr. Charles Norris; Aberrant Bile Ducts in the Liver, by Dr. E. Moschcowitz; Multiple Gummata of the Heart, by Dr. J. H. Larkin; A Case of Carcinoma of the Appendix Complicated by Pneumococcus Peritonitis, by Dr. E. Libman; (a) A New Method for Staining Polar Bodies (b) Blood Cultures in Typhoid Fever. A new observation of practical value, by Dr. A. A. Epstein; A Standard Blood Medium for Bacteriological Work, by Dr. E. P. Bernstein and Dr. A. A. Epstein.

The Medical Society of the County of Washington, N. Y.—The semiannual meeting of this society was held at Granville on Tuesday, October 2nd. Dr. C. W. Sumner, of North Granville, reported a case of simple neuritis; Dr. S. Pashley, of Hartford, reported a case of emphysema of the left side in which the heart was displaced to the right side, and Dr. D. C. McKenzie, of Granville, presented a patient with anterior polyomyelitis. The annual meeting of this society will be held at Sandy Hill on the second Tuesday in May, 1907. The officers of the society are: President, Dr. R. C. Davies, of Granville; vice-president, Dr. Oatman, of Sandy Hill; secretary and treasurer, Dr. Henry Root, of Whitehall; board of censors, Dr. Pashley, Dr. Banker, and Dr. Rapp. There is also a committee on hygiene.

The Late Dr. William K. Otis.—At a meeting of the Medical Board of St. Mark's Hospital, held on October 2, 1906, the following minutes and resolutions were adopted: *Whereas,* Death has removed from among us the beloved vice-president of our board, Dr. William K. Otis, long and favorably known and respected among us, therefore be it *Resolved,* That we deeply regret the loss we have sustained in the demise of one of the pioneers in the genitourinary surgery in this country and who was loved by every one with whom he came in contact; *Resolved,* That we extend our deepest sympathy to the bereaved family of the deceased and that a copy of these resolutions be spread in full upon the minutes of the Medical Board and be published in the medical papers. Carl Beck, M. D., president of St. Mark's Hospital; Reynold Webb Wilcox, M. D., president of the Medical Board; Ignatz Morvay Rottenberg, M. D., secretary of the Medical Board.

The Harvey Society of New York announces its second course of lectures. These are given at the Academy of Medicine building, 17 West Forty-third Street, on Saturday evenings at 8.30. The lectures are open to the public and all interested are cordially invited to attend. The programme for the year is as follows: *October 20th,* Professor A. E. Wright, London, Therapeutic Inocculation with Bacterial Vaccines; *November 3rd,* Professor C. A. Herter, New York, The Common Bacterial Infections of the Digestive Tract and the Intoxications Arising from Them; *November 17th,* Professor W. T. Porter, Boston, Vasomotor Reflexes; *December 1st,* Professor J. G. Adami, Montreal, The Myelins and Potential Fluid Crystals of the Body; *December 15th,* Dr. S. J. Meltzer, New York, The Factors of Safety in Animal Structure and Animal Economy; *January 12th,* Professor F. G. Benedict, Middletown, Conn., Metabolism During Fasting; *January 26th,* Professor E. B. Wilson, New York, Recent Studies of Heredity; *February 9th,* Professor G. S. Huntington, New York, The Genetic Interpretation of Variations in the Genitourinary Tract; *February 23rd,* Professor W. T. Councilman, Boston, The Relation of Certain Leucocytes to Infectious Diseases; *March 9th,* Professor Friedrich Müller, Munich, Neuroses of the Heart.

Sir William Henry Perkin, the Discoverer of the First Aniline Color.—The fiftieth anniversary of the discovery of the first aniline color by Sir William Henry Perkin, an English chemist, was celebrated by an international gathering held in London during the summer. The anniversary has been celebrated in America by a series of entertainments to Sir William Henry Perkin, who is visiting the United States with his family in response to the invitation of American chemists. The first of the celebrations took the form of a banquet given at Delmonico's on Saturday evening, October 6th, some four hundred chemists and teachers being present, including the presidents of Columbia University, Johns Hopkins University, the College of the City of New York, Stephens Institute, Massachusetts

Institute of Technology, and the American Chemical Society. Sir William was presented with a medal, which is to be presented annually hereafter to the American chemist making the most important advance in technical chemistry, under the name of the Perkin Medal. He was also presented with a silver tea service. An outline of the effect of his discoveries and researches on chemistry formed the subject of an address by Dr. Hugo Schweitzer, who called special attention to the vast array of medicinal chemicals now derived from coal tar, and whose production was indirectly attributable to Sir William's epoch making discovery. On October 8th a reception was tendered to Sir William by the American Electrochemical Society, and a reception and smoker in his honor was held at the Chemists' Club on the evening of October 9th. The chemists of Boston entertained him at a banquet on the evening of October 10th, and he is to be received by the President next week, and it is understood that honorary degrees will be conferred on him by Johns Hopkins University and Columbia University before his return to England.

Society Meetings for the Coming Week:

MONDAY, *October 15th.*—New York Academy of Medicine (Section in Ophthalmology); New York County Medical Association; Hartford, Conn., Medical Society; Chicago Medical Society.

TUESDAY, *October 16th.*—New York Academy of Medicine (Section in General Medicine); Medical Society of the County of Kings, N. Y.; Binghampton, N. Y., Academy of Medicine; Buffalo Academy of Medicine; Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Society of the County of Kings, N. Y.; Baltimore Academy of Medicine; Clinical Society of Elizabeth, N. J., General Hospital.

WEDNESDAY, *October 17th.*—Woman's Medical Association of New York City (New York Academy of Medicine); Medicolegal Society, New York; Northwestern Medical and Surgical Society of New York (private); New York Academy of Medicine (Section in Genitourinary Diseases); New York Society of Internal Medicine (private); New York Society of Dermatology and Genitourinary Surgery (private); New Jersey Academy of Medicine (Jersey City); Philadelphia County Medical Society; Buffalo Medical Club; New Haven, Conn., Medical Association.

THURSDAY, *October 18th.*—New York Academy of Medicine; Brooklyn Surgical Society; New Bedford, Mass., Society for Medical Improvement (private); Medical society of the City Hospital Alumni, St. Louis; Atlanta, Ga., Society of Medicine; Newark, N. J., Medical and Surgical Society; Aesculapian Club, of Buffalo.

FRIDAY, *October 19th.*—New York Academy of Medicine (Section in Orphopædic Surgery); New York East Side Physicians' Association; New York Microscopical Society; Manhattan Medical and Surgical Society, New York (private); Clinical Society of the New York Postgraduate Medical School and Hospital; Roosevelt Hospital Alumni Association, New York; Baltimore Clinical Society; Chicago Gynæcological Society (annual).

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending October 6, 1906:

	October 6.		September 29.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	121	25	114	19
Smallpox	..	..	1	..
Varicella	11	..	12	..
Measles	30	2	61	5
Scarlet fever	49	3	41	3
Whooping cough	32	15	35	8
Diphtheria	199	22	137	12
Tuberculosis pulmonalis	346	154	367	151
Cerebrospinal meningitis	12	11	15	12
Totals	800	232	783	210

PHILADELPHIA AND THE MIDDLE STATES.

Dr. Horatio C. Wood, on account of ill health, has resigned the chair of materia medica and therapeutics in the University of Pennsylvania. His resignation has been accepted by the trustees, who have unanimously elected Dr. Wood emeritus professor.

Personal.—Dr. and Mrs. Harmon N. Morse, of Johns Hopkins University, have returned from an extended trip in Germany, especially visiting Göttingen, where Dr. Morse received his degree of doctor of philosophy. Dr. and Mrs. George Fales Baker will return to the city November 1st form their summer residence at Rosemont.

The Elizabeth, N. J., Medical Club.—The annual meeting and election of the Elizabeth Medical Club was held at the Alexian Brothers Hospital, Elizabeth, October 9, 1906. The following officers were elected: President, Dr. Arthur Stern; vice-president, Dr. Charles H. Schlichter; secretary, Dr. Frank H. Warncke; treasurer, Dr. Edgar B. Grier; executive committee, Dr. R. B. Whitehead, Dr. Theodore F. Livengood, and Dr. James S. Green.

Bequests.—By the will of Elizabeth Bell, who died recently at the Norristown Asylum, after the death of a legatee, $500 will go to the Methodist Hospital, $1,000 to the Children's Homoeopathic Hospital, $300 to the Home for Incurables, and $200 to the Sunday Breakfast Association. By the will of Mary A. Fry, the Home for Poor Consumptives will receive $200. By the will of Annie Robinson about $9,000 will go to the Home of the Merciful Saviour for Crippled Children.

Scientific Society Meetings in Philadelphia for the Week Ending October 20, 1906.—Monday, October 15th, Medical Jurisprudence Society; Northeast Branch, Philadelphia County Medical Society. Tuesday, October 16th, Section in Ophthalmology, College of Physicians; Dermatological Society; Academy of Natural Sciences; North Branch, Philadelphia County Medical Society. Wednesday, October 17th, Philadelphia County Medical Society (business meeting for members only); Section in Otology and Laryngology, College of Physicians; Association of Clinical Assistants of Wills Hospital; Franklin Institute. Thursday, October 18th, Section in Gynecology, College of Physicians; Section Meeting, Franklin Institute; Medical Society of the Woman's Hospital; Northwest Branch, Philadelphia County Medical Society. Friday, October 19th, American Philosophical Society; West Philadelphia Branch, Philadelphia County Medical Society.

The Health of Philadelphia.—During the week ending September 29th, the following cases of transmissible diseases were reported to the bureau of health:

	Cases.	Deaths.
Malarial fever	3	0
Typhoid fever	93	17
Scarlet fever	16	0
Chickenpox	10	0
Diphtheria	71	13
Cerebrospinal meningitis	2	0
Measles	7	1
Whooping cough	27	8
Tuberculosis of the lungs	48	52
Pneumonia	27	30
Erysipelas	1	0
Septicæmia	2	0
Mumps	1	0
Anthrax	1	0
Cancer	11	17

The following deaths from transmissible diseases were also reported to the bureau of health: Tuberculosis, other than tuberculosis of the lungs, 13; puerperal fever, 2; diarrhœa and entertitis, under two years of age, 51. The infant mortality was 128; between one and two years of age, 22; under one year of age, 106. The whole number of deaths amounted to 439, corresponding to an annual mortality of 15.54 in a thousand in an estimated population of 1,469,126. There were 33 still births, 24 males and 9 females. No unusual meteorological phenomena were observed.

BOSTON AND NEW ENGLAND.

The Portland (Me.) Medical Club.—At a meeting of this club, held on Thursday, October 4th, Dr. R. L. Hull read a paper entitled: The Coroner in Maine as Compared to the Medical Examiner in Massachusetts.

The Centre District and Merrimack County (N. H.) Medical Society.—The programme for a quarterly meeting of this society, held at Concord, on Tuesday, October 9th, included the following papers: Cooperative Methods Applied to Sanatoria, by Dr. H. T. Fontaine, Pembroke, N. H.; The Pharmacopœia and Proprietary Medicine, by Dr. Ethel S. Mitchell, Concord, N. H.

Medical Matters in Lawrence, Mass.—The Lawrence Medical Club began its year by a meeting at the house of Dr. R. W. Forster on Monday evening, September 24th. Dr. George B. Sargent was reelected secretary and treasurer. A paper on Common Diseases of the Eye and their Treatment, was read by Dr. J. A. Dorgan. During the past year a new ward of eighteen beds for obstetrical cases

has been added to the Lawrence General Hospital; also a new building for a nurses' home.

The New Hampshire Surgical Club.—The eleventh annual meeting of this club was held in the Mary Hitchcock Hospital, at Hanover, on Tuesday, October 2nd. The programme for the meeting included the following papers: Suprapubic Prostatectomy, Dr. Herbert L. Smith, Nashua; Puerperium Surgically Considered Dr. John O. Polak, Brooklyn, N. Y.; Abdominal Surgery Preparation, Technique and After Treatment, Dr. John C. Munro, Boston; president's address, Dr. William T. Smith, Hanover. Officers were elected as follows: President, Dr. Frank Blaisdell, Goffstown; vice-president, Dr. N. W. McMurphy, Gilmanton; secretary and treasurer, Dr. George D. Owen, Manchester.

BALTIMORE AND THE SOUTH.

The Richmond (Va.) Academy of Medicine and Surgery.—The programme for a meeting of this academy held on Tuesday, October 9th, included the following papers: Diagnosis of Stomach Lesions, by Dr. E. G. Hopkins; Surgical Treatment of Stomach Lesions, by Dr. J. Shelton Horsley.

The Memphis and Shelby County (Tenn.) Medical Society.—The programme for a meeting held on Tuesday, October 2nd, included the following papers: Restoration of Sight After a Month of Blindness from Glaucoma, by Dr. J. L. Minor; The True Cause of Functional Nervous Diseases, by Dr. G. G. Buford.

The Allegany County (Md.) Medical Society.—At the annual meeting of this society held at Cumberland on Tuesday, October 2nd officers were elected as follows: President, Dr. S. A. Boucher, of Barton; vice-president, Dr. George L. Broadup, of Cumberland; secretary, Dr. W. R. Foard, of Cumberland; treasurer, Dr. E. B. Claybrook, of Cumberland; censor, Dr. E. L. Jones, of Cumberland. The next meeting of the society will be held at Frostburg, Md.

The Tri-State Medical Society Changes Its Name.—At the annual meeting of this society held at Chattanooga, Tenn., on October 2nd-4th, the society was dissolved by its own action and a new organization was formed which will hereafter be known as the *Southern Medical Society*. The old organization embraced Tennessee, Alabama, and Georgia. To these States have been added Kentucky, Mississippi, Florida, and Louisiana, and the intention is to embrace members of the profession in the other Southern States. The election of officers resulted as follows: President, Dr. H. H. Martin, Savannah; vice-presidents, Dr. Mack Rogers, Birmingham, Ala.; Dr. J. B. Cowan, Tullahoma, Tenn.; and Dr. J. R. Tackett, Meridian, Miss.; secretary, Dr. Raymond Wallace, Chattanooga; treasurer, Dr. Y. L. Abernathy, Chattanooga.

A Hospital for Contagious Diseases in Baltimore.—The announcement, made on September 27th, that the members of the Baltimore municipal hospital commission have about decided upon the plan for the building to be erected for a hospital for contagious diseases, and the prospect which is held out that bids for the building will be advertised within another week give promise that this much needed institution will soon be under way. Health Commissioner Bosley's assurance that it is the intention of the commission to push the work forward to completion, as speedily as possible, is likewise encouraging. The tract of land secured for the hospital gives a favorable location for the structure, insuring also the light and air that are necessary for a building of that sort. While the $25,000 appropriated by the city will make possible the erection of only one building at this time the tract is large enough to admit of the erection of other buildings as the money is forthcoming. The need for the hospital is beyond question.

The Mortality of Baltimore.—The report of the Health Department for the week ending October 6th, shows a total of 195 deaths, as compared with 184 the corresponding week of last year 176 in 1904, and 183 in 1903. The annual death rate in 1,000 of population was: Whole, 16.87; white, 16.04; colored, 21.27. The principal causes of death were:

Typhoid fever	6	Pneumonia	10
Scarlet fever	3	Diarrhœa (under two years of age)	12
Whooping cough	1	Bright's disease	18
Diphtheria	4	Congenital debility	18
Consumption	21	Old age	7
Cancer	7	Suicide	1
Apoplexy	4	Accidents, etc	18
Organic heart diseases	16		
Bronchitis	4		

The nativity of the decedents was: United States, white, 113; foreign 37; colored, 37; unknown, 8. The following number of cases of infectious diseases were reported as compared with the corresponding week of last year:

	1905.	1906.		1905.	1906.
Diphtheria	23	39	Measles		6
Scarlet fever	4	11	Chickenpox		1
Typhoid fever	27	24	Consumption	10	18

CHICAGO AND THE WEST.

A Suit for a Bequest to a Hospital.—The Presbyterian Hospital, of Chicago filed through its attorney on October 1st, a claim for $50,000 against the estate of Marshall Field. The action was brought to secure legally a bequest in the merchant's will. The institution was to receive the amount of the suit on condition that the trustees of the institution raise $400,000 from other sources. This condition was accomplished late last week.

Statement of Mortality of Chicago for the Month of September, 1906, compared with the preceding month and with the corresponding month of 1905. Death rates computed on United States Census Bureau's figures of midyear population—2,049,185 for 1906, 1,990,750 for 1905:

	Sept., 1906.	Aug., 1906.	Sept., 1905.
Total deaths, all causes	2,327	2,487	2,101
Annual rate in 1,000	13.81	14.29	12.84
Sexes—			
Males	1,341	1,438	1,163
Females	986	1,049	938
Ages—			
Under 1 year of age	598	762	535
Between 1 and 5 years of age	229	238	250
Between 5 and 20 years of age	156	184	149
Between 20 and 60 years of age	943	911	813
Over 60 years of age	401	392	354
Important causes of death—			
Apoplexy	40	24	52
Bright's disease	180	179	144
Bronchitis	28	26	29
Consumption	253	248	219
Cancer	110	124	93
Convulsions	26	33	30
Diphtheria	31	22	38
Heart diseases	161	142	163
Influenza	0	0	0
Intestinal diseases, acute	470	608	451
Measles	5	4	2
Nervous diseases	71	84	94
Pneumonia	152	130	121
Scarlet fever	24	24	2
Smallpox	0	0	2
Sunstroke	6	37	0
Typhoid fever	48	29	32
Violence (other than suicide)	161	148	132
Whooping cough	30	16	26
All other causes	499	576	436

GENERAL.

A Medal of Honor for an Army Surgeon.—For conspicuous bravery in the face of the enemy at Zambales, Island of Luzon, on December 21, 1899, Major Paul F. Straub, of the Medical Department of the Army, at that time surgeon of the 36th Volunteer Infantry, received from the President on October 6th a medal of honor.

The Walter Reed United States Army General Hospital.—Plans and specifications have been prepared and the contract awarded for a three story brick and stone hospital at Washington, D. C., for the United States Government, to be known as the Walter Reed United States Army General Hospital. It will measure 192 by 54.2 feet. It will be surmounted by a dome. The offices of the commanding officer, officer of the day, quartermaster and sergeant, and resident physician and surgeon, clinics, a reception hall and library, will be on the first floor. The wards will be on the upper floors.

The National Association for the Study and Prevention of Tuberculosis—Notices have been sent to many physicians throughout the United States and are appearing in the medical and public press regarding an American International Tuberculosis Congress, to be held in New York city, November 14th to 16th, next, and an association known as The American Antituberculosis League, which is to meet in Atlantic City next June, at the time of the meeting of the American Medical Association. It should be stated that the gathering in New York next November and the one in Atlantic City next June have no connection whatever with the International Congress on Tuberculosis authorized at the last session in Paris in 1905 which will hold its next meeting in Washington in 1908 under the auspices of the National Association for the Study and Prevention of Tuberculosis.

Pith of Current Literature.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

October 4, 1906.

1. The Future of the Medical Profession, By CHARLES W. ELIOT.
2. The Unity of the Medical Sciences, By WILLIAM H. WELCH.
3. Hysteria from the Point of View of Dissociated Personality (*To be continued*), By MORTON PRINCE.
4. The Ulnar Nerve as a Landmark of the Elbow, By F. J. COTTON.

4. The Ulnar Nerve as a Landmark of the Elbow.—Cotton thinks that in case of any difficulty the ulnar nerve is the most reliable single landmark at the elbow. Curiously enough, its value in this sense seems not to have been brought to the attention of the profession. Only two nerves are readily recognizable from the outside, the external popliteal, as it rounds the fibula, and the ulnar as it lies behind the internal epicondyle. Injuries at the elbow are very common; the landmarks of the elbow are most uncertain at times, and a single indisputable landmark is of value; such is the ulnar nerve. It lies in an anatomically constant position behind the internal epicondyle; is a large nerve; covered by no muscle, bound down loosely by fibrous tissue; it can readily be reached even in the presence of much swelling, if this swelling is slowly massaged away; it may be identified in every case if reached, not only because it is the only cord like structure at the back of the elbow that can be rolled under the finger, but also because the patient can readily assist in its identification, as no one is in the slightest doubt as to when his funny bone is touched. In many cases no other landmark at the elbow can be relied on; either condyle may be displaced by fracture and lose its characteristic shape and place so far that it cannot certainly be identified. The only objection which may be raised is the displacement of the ulnar nerve, but this is rare. Permanent displacement forward happens, and recurrent displacements are on record, but it is present only in cases where the nerve is obviously movable beyond normal.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

October 6, 1906.

1. Medical Fees in Country Practice, By W. O. BRIDGES.
2. Further Observations on Rocky Mountain Spotted Fever and Dermacentor Occidentalis, By H. T. RICKETTS.
3. Osteoplastic Resection of the Costal Arch in Order to Reach the Vault of the Diaphragm, By WILLY MEYER.
4. The Diagnosis and Treatment of Tuberculosis of the Kidney, By ARTHUR DEAN BEVAN.
5. Sodium Citrate in Infant Feeding, By A. C. COTTON.
6. The Trend of Pædiatric Opinion Concerning the Artificial Feeding of Infants By THOMAS S. SOUTHWORTH.
7. Whole Milk Versus Laboratory Milk, By A. MCALLISTER.
8. The Prevalence of Intestinal Parasites in Siam. Preliminary Report, By PAUL G. WOOLLEY.
9. The Treatment of Purpuric Conditions and Hæmophilia, By JOHN W. COE.

1. Medical Fees in Country Practice.—Bridges has collected data from country physicians of the States of North Carolina, Texas, Wisconsin, Arkansas, North Dakota, Carolina, Utah, Nevada, and Iowa, referring to the fees charged by these physicians. He thinks that, although at no time in the history of this country has general prosperity been on so high a plane, the country physician's fees have not advanced, accordingly; in fact, the physician is underpaid. But the doctor himself is mostly to blame for it that his schedule of fees has not advanced with the requirements of his education, of his needs, and of his position. By a well directed effort, individually and collectively, results should be not only to the doctor's advantage, but also to that of his constituency.

2. Further Observations on Rocky Mountains Spotted Fever and Dermacentor Occidentalis.—Ricketts describes the results of his experiments which he has performed under a grant made by the American Medical Association through the Committee on Scientific Research, and with the aid of Missoula and Ravalli counties, Montana, and of the Montana State Board of Health. He has been successful in alternating inoculations of monkeys and guinea pigs in preserving the virus of Rocky Mountains spotty fever, Ricketts has not learned of an authentic example of a second attack of spotted fever in man, hence it seems somewhat probable that one attack renders the body immune. This has been found to be true in a recent experiment on monkeys and guinea pigs. The author then proceeds to describe the life history of *Dermacentor occidentalis*, said to be a carrier of the fever germ.

3. Osteoplastic Resection of the Costal Arch to Reach the Vault of the Diaphragm.—Meyer describes the various methods which have been devised to reach the vault of the diaphragm, and gives the history of two cases where he employed osteoplastic resection, going into detail about his mode of procedure. He says that we may expect great help from the osteoplastic raising of the lower part of the thorax when it becomes necessary to reach ordinarily inaccessible organs within the phrenic convexity. In cases of need the ribs may be divided in place of their cartilages, further outward, including also the sixth and fifth ribs. A flap may be shaped according to indications. On the right side the surface of the liver can be better reached by pulling on the suspensory ligament, or by dividing the latter up to its attachment to the diaphragm, and thus using it for strong downward traction. The author has also made dissections on the cadaver, and concludes that the usual median (or rectus) incision can well be combined with osteoplastic resection of the costal arch, but the space gained is not as satisfactory as when the oblique or ⊢ incision is used. The osteoplastic operation will also prove especially useful in injuries to liver and spleen, injuries and diseases of the diaphragm (hernia) and of the cardiac portion of the stomach, inflammatory troubles (liver and subphrenic abscess).

4. The Diagnosis and Treatment of Tuberculosis of the Kidney.—Bevan, in reviewing the history of the surgical treatment of renal tuberculosis shows that the views of the subject of kidney tuberculosis have changed greatly within the last twenty years. It is known to be a common disease, it is almost always the result of infection through the circulation, and it is in ninety per cent. or more primary in a single kidney. If diagnosticated early and operated in early the prognosis is decidedly good. The radical removal of the kidney holds out a very large hope for the patient. The author describes the symptoms: 1, Blood and pus in urine; 2, pain in the kidney region with attacks of kidney colic; 3, tenderness and enlargement in kidney region; 4, more or less marked bladder symptoms; 5, constitutional symptoms, such as loss of weight; and 6, slow onset of symptoms and a chronic cause. Differential diagnosis should be made by: 1, Careful history and physical examination; 2, x ray examination; 3, careful examination of urine for tubercle bacilli; 4, and a cystoscopic examination of the bladder; and 5, cryoscopic examination of the blood.

5. Sodium Citrate in Infant Feeding.—Cotton says that the simplicity of the method commands sodium citrate in infant feeding, especially in dispensary and out patient practice, where the mother's demand for medicine for the baby's dyspepsia may be met by the standard solution of sodium citrate, to be administered

in teaspoonful dose in each bottle of the feeding mixture. In private practice it furnishes another rational method of infant feeding. The author comes to the conclusion that sodium citrate retards and even will inhibit coagulation, while the presence of hydrochloric acid hastens coagulation, again diluting milk generally retards coagulation. Gruels appear to have little or no effect in retarding coagulation more than water when the citrate is used. The coagula of citrated milk are softer, smoother, and more jelly like, or more flocculent than those of milk not thus treated.

6. **The Trend of Pædiatric Opinion Concerning the Artificial Feeding of Infants.**—Southworth speaks of the substances used in artificial feeding of infants: Starchy barley water, caseine, and other alkalies. He then takes up the effects of acids on milk, the peristalsis and intestinal digestion, and the value of artificial food and food formulæ. But many of the difficulties arise from the noncomprehension and nonapplication of certain broad principles, such as feeding infants as individuals and not to make a general rule or adhere to a formula. The lower formula must first be tried, and particular attention be given to determine whether the difficulty lies with the digestion of the fats or of the proteids. The stools, the weight chart, and the behavior of the infant are the triad with which successful feeding must be conducted. Special attention must be given to proper intervals in feeding, and mothers should strictly adhere to them and prevent overfeeding.

8. **The Prevalence of Intestinal Parasites in Siam.**—Woolley has examined the inmates of the government prison at Bangkok with reference to the occurrence of intestinal parasites. He found in fifty prisoners eighteen cases of parasitic infection, or thirty-six per cent., eleven, or sixty-one per cent., showing amœbæ, while monads were found in sixty per cent. of all the cases. He says, that as far as his examination goes, he must draw the conclusion that infection with animal parasites is widespread in Siam, and that amœbic infection is common.

9. **The Treatment of Purpuric Conditions and Hæmophilia.**—Coe has treated during the past few months several patients with calcium lactate with good results. He gives the history of five patients, and concludes that the calcium, or probably the magnesium, salts, as well, offer the best hope of relief of any therapeutical measure so far advised. As much as sixty grains were given in a single dose, but the average dose was fifteen or twenty grains, three times a day. All the patients were also directed to drink from one to two quarts of milk a day, and some of the improvement may result from this. Certainly, theoretically there is some danger of causing thrombi formation, but this will be slight, if with each case the minimum dose is determined, which is necessary to make the patient comfortable. From his experiments it can be seen that coagulation was decidedly normal in two patients, in two others a high normal, and in the fifth a low normal. Many blood examinations were made, and the constant feature, permanently found, was the very small number of blood plates, and the relationship between the sudden disappearance of the blood plates and the bleeding. After the cessation of the bleeding arsenic was given with the idea of stimulating the hæmogenetic organs, which proved very satisfactorily in one patient

MEDICAL RECORD

October 6, 1906.

1. Three Ureters Demonstrated During Life; Ureter Catheterization Giving Three Different Urines, One Infected with Gonococci. By BRANSFORD LEWIS.
2. Axioms in the Treatment of Cancer of the Rectum, By CHARLES B. KELSEY.
3. The Treatment of Symptoms a Rational and Scientific Procedure, By GEORGE F. BUTLER.
4. The Effect of Blowing Upon Wind Musical Instruments, with Special Reference to Tuberculosis, By J. FREDERICK ROGERS.
5. Appendicitis. To Operate or Not to Operate, By J. J. BROWNSON.

1. **Three Ureters Demonstrated During Life; Ureter Catheterization Giving Three Different Urines, One Infected with Gonococci.**—Lewis reports a remarkable case of three ureters in one patient: Three catheters, armed with wire, were successively introduced into the three ureter openings and pushed up toward the renal regions, after which two x ray photographs were taken, with very satisfactory results. This skiagraph made it evident that the ureter on the right side of the body had no connection with the two on the left side. Those of the left side, after leaving their respective openings at the angle of the trigone, run parallel with one another in following the direction of the pelvic hexagon, and ascended in the manner usually followed by the left ureter. Whether because he did not push it as far as possible or not, one of the catheters ended at a point something like three inches lower than the other. The two ureters instead of maintaining their relative positions, crossed one another in making their ascent. The one starting from the median vesical opening led to the outer side when it reached the flank, while the ureter that started from the outer opening crossed and obtained the median position in the flank. This one was infected with gonococci, the other two having been perfectly healthy.

2. **Axioms in the Treatment of Cancer of the Rectum.**—Kelsey emphasizes the following three points: 1. Every suitable case of cancer of the rectum should be subjected to immediate excision or resection by some of the half dozen well recognized varieties of the operation. 2. Every other case should be at once treated by colostomy. 3. No physician is justified in using his influence against some form of operative relief, radical or palliative.

3. **The Treatment of Symptoms a Rational and Scientific Procedure.**—Butler remarks that there is a quite general unscientific conception among medical men regarding therapeutics, namely, that there is a specific for particular diseases and that self limitation of a disease is an absolute law. This generally accepted belief as to self limitation ignores certain definitely determined principles of ætiology which go to show that a disease is the result of three factors. It is the product, first, of the determining cause; second, of the condition of the patient at the time that the cause is applied; and third, of the general condition of the patient dependent on his congenital constitution. The problem, therefore, in the treatment of disease, is to determine whether conditions which produce modified constitutional symptoms are to be obtained by medicinal agencies. The elements which may be affected by treatment are the course of the disease, the general constitutional vitality, and the constitutional vitality of the patient at the time of the attack. These factors may be influenced by symptom remedies, so called, applied to conditions produced by the diseases and which tend to reduce the congenital and acquired vitality. The fact that symptom remedies have been decried in the treatment of disease (another very popular medical error) arises from the unscientific conception that treatment of symptoms has no effect whatever on the constitution of the patient, and hence on the progress of the disease. The fact that symptoms at the very least may exhaust general vitality, and the further fact that it is upon the general vitality that the chances of recovery depend, have not been taken into consideration to the degree that they should be in the ordinary conception of therapeusis. Strictly speaking, the older belief that the physician does not cure disease, but guides the patient to recovery, is the essential basis of scientific therapeutics.

4. **The Effect of Blowing Upon Wind Musical Instruments, with Special Reference to Tuberculosis.**—Rogers says that there seems to be no evidence that there is anything for the nontuberculous or robust in the exercise of playing on wind instruments which predisposes to infection, and, on the other hand, there could not be expected to be any prophylactic effect upon lung tissue already up to a normal standard. In the case of the nontuberculous with hereditary or other predisposition the limitations of hereditary physical endurance and capacity for development must not be overlooked, and the antitoxic insufficiency of the tissues, which seems to be a part of the inherited conditions, should be taken into account. Persons of the diathesis, being often less vigorous, are inclined to avoid the sports of those who possess the average of vitality. To such persons, blowing on wind instruments presents a pleasureable exercise tending to expand the lungs and develop the chest, with accompanying good effects upon the circulation and digestion. The instruments used should be those in which the breath is not too much forced or withheld, and which require muscular exertion and a depth of breathing compatible with the physique of the performer. That development of the chest and lungs does follow such exercise, when wisely carried on, seems to be acknowledged. The limitations of heredity as to possible physical development in persons of this type should not be overlooked, and they should be discouraged from adopting music with the expectation of finding in it an easy means to a livelihood, or with the anticipation of reaching a top round in the professional ladder. For the tuberculous it would seem that the breathing of the exercise under consideration is never injurious so far as the local condition is concerned, and in tending to expand unused or collapsed portions of the lungs and influencing the circulation in those regions might be of some benefit. Where the quality or quantity of his work seems to make too great demands on his general vitality, the professional musician who has contracted tuberculosis would best adopt some less taxing work, and where his surrounding are bad he should find a place entailing less danger from added infection. The amateur should shun ensemble playing in bad surroundings, and should avoid carrying the exercise to the point of fatigue. Musicians having the disease should be made aware that they may spread the infection by allowing others to use the mouthpieces of their instruments.

BRITISH MEDICAL JOURNAL.

September 22, 1906.

(Seventy-Fourth Annual Meeting of the British Medical Association.)

Section of State Medicine.

Control of Milk Supplies.

1. The Protection and Control of the Milk Supply, By R. Harcourt.
2. The Sanitary Control of the Milk Supply, By J. Glaister.
3. Protection and Control of Milk Supply, By H. C. Pattin.

Discussion by Sargeant, Harcourt, Brice, and others.

Hygiene of the Home and State Institutions.

4. The Hygiene of the Home, By J. J. Cassidy.
5. Medical Inspection of School Children Attending Elementary Schools, By H. MacMurchy.
6. The Medical Inspection of Schools, By W. Scott.

Discussion by Nasmyth, Stevens, and Groves.

7. Present Status of Antituberculosis Work in Canada, By J. H. Elliott.
8. The Significance of Some Enlargements of the Thyreoid Gland, By A. F. Martin.
9. Simulation of Mastoid Disease, By S. Paget.

1, 2. **Milk Supply.**—Harcourt, among other things, makes note of the following: The taste and purity of milk are influenced in many ways. Bad flavors may be given to it from the food eaten by the cow, by the foul air breathed by the animal, by the products of certain germs, and by the direct absorption of bad odors. Milk is practically never free from bacteria, and even with the utmost care it is often impossible to prevent further contamination. Hairs and scales from the body, dust from the udder, sides of the cow, and from the air in the stable, and even dried particles of animal manure all loaded with germ life, find their way into the milk during milking operations. During bottling and delivery there is still further chance for contamination. Freshly drawn milk that has been produced under strictly sanitary methods should contain only a few hundred bacteria to the cubic centimetre. Such milk will remain sweet for a long time, especially if kept at a low temperature. Country milk produced from reasonably clean cows in clean stables, and kept at a low temperature, should not contain more than from 5,000 to 20,000 bacteria per cubic centimetre when first placed on the market. Such milk, if free from bad flavors, is satisfactory for general consumption. A large number of bacteria in the milk indicates that the milk is old, or that it has been kept at too high a temperature, or that it has been produced under unsanitary conditions. If the germs are lactic acid organisms the milk may be old, but not necessarily dirty. The presence of many liquefying organisms is an indication that filth of some sort has gained access to the milk. Other things being equal the price of milk should depend upon its composition: The more fat it contains the higher should be the price. Pasteurization of milk is often necessary in the case of milk handled by large companies, where it is often several days old before it reaches the consumer. But where it can be botttled immediately after it is drawn, and cooled, and delivered direct to the consumer, pasteurization is not necessary. The addition of preservatives of any kind should not be countenanced, and every effort made to prevent their use. A really good milk cannot be produced as cheaply as the ordinary kind; hence the price is bound to be increased.—Glaister sums up the desiderata required of milk as follows: 1. A guarantee at the hands of a qualified sanitary official, after inspection of premises, animals, and milking operations of every dairy farm sending milk to a city, that cleanly conditions had been secured, and that clean milk was being supplied. Such a guarantee in the hands of a milk seller would command the confidence of the public and would be calculated to reduce milk borne disease. 2. The systematic official inspection of dairy farms and their water supplies. 3. Registration, after inspection, of such forms, and of places of milk distribution in cities and towns. The observance of such conditions as the foregoing might be tested by the establishment of certain standards, on the part of the sanitary authorities, as follows: (a) A standard of cleanliness respecting amount of deposit of foreign matter. (b) A bacteriological standard indicating the maximum number of organisms permissible in milk in summer. (c) A standard of temperature to ensure the proper cooling of milk, and the maintenance of a low temperature during transit. (d) A prohibition of the sale of milk which, within six hours after purchase, could not be boiled without coagulating.

8. **Enlargements of the Thyreoid Gland.**—Martin has investigated the causation of the simple enlargements of the thyreoid gland, or "thyreoceles." He reaches the following conclusions: 1. That a call for increased functional activity is sufficient cause for simple enlargement of the thyreoid gland. 2. That such a call is frequently given by the metabolism of the organism in connection with growth and development, with the performance of the uterine functions in the female, and with the chlortic conditions of young girls. 3. That the phases of enlargement of the thyreoid included under the term "thyreocele" are a response to

such an appeal from one or more of the cited causes in an individual whose thyreoid function is feebly performed. 4. That as undue physiological activity is a potent cause for pathological change, so this simple hypertrophy, when necessitated for prolonged periods, lays the foundation of the pathogenesis of the degenerate cystic and adenomatous bronchocele. 5. That there is often some influence exerted by heredity upon the thyreoid function. 6. That the only endemic condition common to all cases is the water. If there is an endemic influence it is not contained in the lime and magnesium constituents of the water. Its action is only a slight one and may serve merely to accentuate the changes in the gland due to causes primarily mentioned.

LANCET.

September 22, 1906.

1. The Early Diagnosis of Cancer of the Stomach, By C. M. MOULLIN.
2. A Study of the Streptococci Pathogenic for Man, By F. W. ANDREWES and T. J. HORDER.
3. Successful Treatment of a Case of Thoracic Aneurysm Threatening to Rupture Externally, By E. E. YOUNG.
4. Concussion of the Spine, with Some Remarks on Concussion in General, By E. M. CORNER.
5. A Note on Boric Acid Relative to Appendicitis, By R. HARRISON.
6. A Case of Osteitis Deformans with Huntington's Chorea, By C. MACKEY.
7. Some Observations on Stammering and Its Treatment, By R. A. WORTHINGTON.
8. Phlegmonous Cholecystitis, By G. A. WRIGHT.

1. Cancer of the Stomach.—Moullin discusses the early diagnosis of cancer of the stomach. At its onset it is a local complaint. If operated on sufficiently early it can be removed completely and the patient cured. If left it involves the glands in a definite order and spreads into neighboring structures, such as the pancreas, but for cancer it is a long time free from metastatic growths which either make their appearance late or not at all. The stomach, unless it has been allowed to become tied down by adhesions, is easily accessible and stands sutures well. Shock, unless the patient is worn out, need never give anxiety. Peritonitis is a thing of the past, and primary union with restoration of function can be relied on if the operation has not been too long postponed. So that it is our duty to make the diagnosis while the disease is still local, and before any glandular involvement has taken place. Cancer of the stomach may be divided into two classes: Those in which it begins, apparently *de novo,* in a perfectly healthy stomach, in a perfectly healthy man; or it may develop at the site of an old chronic ulcer which has given trouble for years. The cause of the pain in cancer of the stomach is undoubtedly the movements of the stomach, the peritonæum being hyperæmic and hyperæsthetic. The walls of the stomach themselves are quite insensitive. When distaste for food and pain occur together without obvious reasons in a middle aged person, and do not disappear within a week under ordinary treatment, then cancer of the stomach should be thought of. Of all the methods of investigation only two can be relied on: (a) Examination of the working power of the stomach; and (b) direct inspection through an incision. While examination of test meals is certainly of great value, yet a negative result is not of the least value. The writer is strongly in favor of more widespread adoption of the exploratory incision; it is safe, being no more dangerous than the administration of an anæsthetic. It is quite certain; of course a very small carcinoma might be overlooked, or an old chronic ulcer mistaken for cancer. Yet the latter should be treated just as a carcinoma, either by excision or gastrojejunostomy.

2. Pathogenic Streptococci.—Andrewes and Horder, in the continuation of their article on the streptococci pathogenic for man, consider certain important diseases associated with streptococcal infections. Ordinary suppuration. Here the pyogenes and pneumococcus showed an overwhelming predominance. Cystitis. In all six cases examined the streptococci found were of intestinal origin; the fæcalis type in four and the salivarius type in two. Erysipelas and cellulitis. No other form than pyogenes was met with. Peritonitis. No line could be drawn between suppurative and nonsuppurative forms. Septicæmia. In puerperal septicæmia the only form found was the streptococcus pyogenes. In secondary septicæmiæ, other intestinal forms are occasionally found; the salivary and fæcal types of streptococcus seem to be strictly terminal, sometimes probably even agonal invasions. Malignant endocarditis. Here the preponderance of salivary and fæcal types is very striking. Cases due to the streptococcus pyogenes are very grave and rapidly fatal. But the usual form of malignant endocarditis, running a slow course of weeks or months, is probably due to infection of the endocardium by streptococci of relatively feeble pathogenic power, usually nonvirulent to animals, and derived from the saprophytic flora of the alimentary canal. Rheumatism has nothing to do with these cases, except that it has previously damaged the heart valves. Scarlet fever. Here the pyogenes and anginosus forms predominate almost entirely. Three views may be taken of scarlet fever: (a) It may be of primary streptococcal origin, but not due to any one specific streptococcus. (b) It may be primarily due to a specific streptococcus, as is maintained by Klein, Gordon, and others. But the authors have so far failed to find any one constant form. (c) Scarlet fever may be primarily due to some nonstreptococcal cause, possibly ultramicroscopical. Acute rheumatism. In contradistinction to Poynton and Paine and others, the authors have entirely failed to find any one type of streptococcus which could justly be associated with rheumatic fever. It may be that the primary cause of acute rheumatism is not bacterial, but that certain of its manifestations may be due to a secondary invasion by streptococci of low virulence derived from the mouth or the intestine.

4. Concussion of the Spine.—Corner reports six cases of concussion of the spine. He subdivides such cases into general and local concussions. The former can hardly be recognized during life, and not at all after death. The latter can be recognized during life as segmental concussion of the cord, and its presence inferred after death. It can be recognized also in the excess of signs and symptoms above a gross spinal injury, marginal concussion, provided they are not obscured by a hæmorrhage. It has been suggested that the medulla of nerves has been gradually developed in order to protect the axis cylinder against the concussions of daily life.

5. Boric Acid and Appendicitis.—Harrison considers and upholds the view that the frequency of appendicitis has been added to in late years by the large use of boric acid and other chemicals as food preservatives. Boric acid upsets the digestion, the prominent symptom being great and distressing flatulency. The appendix takes no part in the digestive or intestinal function. Any attempt to use it as a receptable is the first step in the process ending in inflammation—*i. e.*, appendicitis. Anything entering it, gaseous or otherwise, must be incapable of "moving on," and unless regurgitation takes place the contents undergo active bacterial decomposition. The initial lesion which probably renders appendicitis possible is the opening or blowing out of the appendical canal to such a degree as to render it accessible to the contents of the intestine as carried along by peristaltic action. In this way flatulent dyspepsia, however produced, may lead up to an appendicitis.

LA PRESSE MEDICALE.

September 19, 1906.

1. Kraurosis Vulvæ, By F. JAYLE.
2. The Use of Thymol as an Anthelmintic, By JULES GUIART.
3. Jejunostomy and Panada in the Treatment of Uncontrollable Vomiting of Pregnancy, By R. ROMME.

1. Kraurosis Vulvæ.—Jayle says that kraurosis is not a synonym for leucoplasia, but is an affection characterized by progressive sclerotic atrophy of the skin and mucous membrane of the vulva, which produces a reduction in the size of the labia majora, a disappearance of the labia minora, the prepuce and frænum of the clitoris, and a retraction in the region of the vestibule and hymen, which results in a stenosis of the aperture of the vagina. He divides it into four types, the leucoplastic, the inflammatory, the senile, and the postoperative. The leucoplastic may be either simple or syphilitic, the inflammatory follicular or vascular. The disease develops by preference in women, whose ovaries either have been removed, or have become atrophic, and it accompanies cancer in a marked proportion of cases.

2. Thymol as an Anthelmintic.—Guiart commends thymol highly as an efficient anthelmintic against the majority of intestinal parasites. He claims that its use is without danger, provided certain specified precautions are observed.

September 22, 1906.

1. The New Theories of Solutions in Their Relations to Medicine. By STEPHANE LEDUC.
2. Hepatic Sensibility: Epigastric Point. Xiphoid Point, By VICTOR RAYMOND.
3. The Rôle of Physics and Chemistry in Medicine, By H. DELAUNAY.

2. Hepatic Sensibility.—Raymond states that hepatic sensibility furnishes a clinical sign of great importance in the study of affections of the liver, particularly of the obscure and inactive forms which are the more frequent, and makes the following points: 1. The study of the hepatic sensibility frequently aids us to trace the free border of the liver throughout its entire extent, particularly in the epigastric zone, where examination is most difficult. 2. It gives such indications as the following in regard to the pathological state of the organ, the period of the affection, and its acuteness: (a) Liver hard, prominent, insensitive; essentially a chronic process with sclerosis predominant; (b) liver firm, prominent, little sensitive; process less advanced, hypertrophy or hyperplasia; (c) liver hard or firm, but sensitive; acute exacerbation in an organ chronically affected; (d) liver soft, difficult to palpate, very sensitive with an epigastric or xiphoid point; process recent, congestion of the liver; (e) liver painful, soft, pain at epigastric and xiphoid points both spontaneous and on pressure; acute process, infection, congestion, or a very acute exacerbation of a chronic disease. 3. The investigation guides us to the true value of the epigastric and xiphoid pain, and enables us to recognize and treat the more or less latent involvement of the liver in dyspepsia.

LA SEMAINE MEDICALE

September 19, 1906.

Puerperal Autoinfection from the Bacteriological Point of View, By Professor R. DE BOVIS.

BERLINER KLINISCHE WOCHENSCHRIFT.

September 10, 1906.

1. The Surgical Treatment of Ulcers of the Stomach, By R. V. RÜDIGER RYDYGIER.
2. Congenital Myxœdema and the Development of the Skeleton in the Same, By P. ARGUTINSKY.
3. Demonstration of Spirochætæ by the Silver Method, By W. SCHULZE.
4. Spirochætæ in Carcinoma and Syphilis By H. FRIEDENTHAL.
5. Pollantin Treatment of Hay Fever, By C. ZARNIKO.
6. The Diagnostic Signification of Hypochondriac Conceptions, By RAUSCHKE.

1. Surgical Treatment of Ulcers of the Stomach.—Von Rydygier reports the present condition of a woman on whom resection was performed twenty-five years ago on account of an ulcer of the pylorus. The pylorus and a part of the pancreas was removed. The patient was thirty years old when the operation was performed, has since then borne five children, has enjoyed good health, and has had little to complain of in regard to her stomach. The conclusion of the writer is that in suitable cases resection gives a quicker and surer permanent cure than any other procedure.

2. Congenital Myxœdema.—Argutinsky gives a very full description and history of a case of congenital myxœdema illustrated with reproductions of photographs and radiograms. The radiograms, not all of which are reproduced, showed that no centres of ossification were to be found in the epiphyses of the metacarpal bones and phalanges of the fingers, that all the carpal bones were cartilagineous, that there were no centres of ossification in the lower or upper epiphyses of the ulna and radius, or in the lower epiphysis of the humerus, that there was a small centre in the acromial part of the head of the humerus, while all other centres of ossification about the shoulder joint were wanting. The metatarsal bones and the phalanges of the toes were in the same condition as the metacarpal bones and the phalanges of the fingers. In the tarsus and ankle the astragalus and scaphoid had fairly well marked centres of ossification, the cuboid a small one, while all the other bones were cartilagineous. In the lower epiphysis of both tibiæ and of the right fibula there were small centres. At the knee joint there were large round centres in the lower epiphysis of the femur and the upper epiphysis of the tibia. At the hip joint the head of the femur was cartilagineous, while the upper end of the diaphysis had grown toward the head to form the neck of the femur.

MUENCHENER MEDICINISCHE WOCHENSCHRIFT

September 18, 1906.

1. The Early and Prophylactic Action of Hyperæmia Stasis on Infected Wounds, By JOSEPH.
2. Experiences with Bier's Stasis, By LINDENSTEIN.
3. Formation of Cholesterin in the Gallbladder. By ASCHOFF.
4. Indications for the Choice of Mineral Waters in the Treatment of Chronic Diseases and Disturbances of Metabolism, By FLEINER.
5. Artificial Early Induction of Labor in Practice, By POLANO.
6. Vaginal Laparotomy, By DÜHRSSEN.
7. The Combination of Morphine-Scopolamine Injections with Spinal Anæsthesia in Gynæcological Operations, By BUSSE.
8. Röntgen Rays and Metabolism, By BENJAMIN and VON REUSS.
9. The Reaction by Precipitate, By FORNET.
10. The Demonstration of Typhus, By MEYERSTEIN.
11. The Influence of Great Bodily Exertions Upon the Circulatory Apparatus and the Kidneys, By BALDES, HEICHELHEIM, and METZGER.
12. Embolic Necrosis of the Gluteal Muscles, By HEINECKE.
13. Incarcerated Hernia of Appendices Epiploicæ and Its Consequences, By MUSCATELLO.
14. A Case in Which Measles Was Transmitted Through a Healthy Person for a Long Distance, By SIEGERT.
15. Model of a New Incubator for the Treatment of Premature and Feeble Children, By ROMMELL.
16. Scopolamine-Morphine in Obstetrics (*Concluded*). By HOCHEISEN.
17. The Measures for Relief Undertaken at the Destruction of San Francisco, By BECK.

1. Effect of Bier's Stasis on Infected Wounds.—Joseph reports a dozen cases of infected wounds in

which good results were obtained from the application of Bier's stasis.

2. **Experiences with Bier's Stasis.**—Lindenstein reports the results obtained from the use of Bier's stasis in a large number of cases of such widely differing conditions as furuncles, carbuncles, felons, infected wounds, lymphangitis, phlegmons, purulent tenosynovitis, purulent synovitis of joints, postpuerperal mastitis, inflammation of the gums, otitis media, as a means to advance the union of fractured bones, tuberculous joint disease, and gonorrhœal arthritis. The results were good, rather than brilliant, but in many of the cases the writer received the impression that the favorable outcome was due to the employment of this means.

5. **Artificial Induction of Labor.**—Polano gives in tabulated form the statistics of the induced labors which have taken place in the lying in hospital at Würzburg during 1903 to 1905. He is of the opinion that the induction of premature labor is not a simple operation, but one which frequently makes great demands on the time and technical knowledge of the surgeon.

6. **Vaginal Laparotomy.**—Dührssen claims that eighty per cent. of all gynæcological diseases which necessitate the opening of the abdominal cavity can be cured without subjecting the patients to the anxiety which precedes a laparotomy through the abdominal walls, and without leaving visible scars on their bodies, or perhaps hernias to remind them unpleasantly of the operation when it is past. For this reason he favors the vaginal cœliotomy which he has performed on sixteen hundred cases with a total mortality of two per cent.

8. **Roentgen Rays and Metabolism.**—Benjamin and von Reuss say that the normal organism reacts to an intensive exposure to the x rays with a not very marked increase of the excretion which commences immediately after the exposure, persists for several days, and then returns to normal, together with a transient increase of the excretion of phosphates, which is followed by a more lasting decrease. The changes in the blood and the anatomical changes exhibit a parallelism with the appearance and rapid disappearance of choline in the blood and the increase of phosphates in the urine, and they believe that this parallelism indicates that the lecithin and related substances form the chief point of attack for the x rays.

12. **Embolic Necrosis of the Gluteal Muscles.**—Heinecke reports the necrosis of nearly the entire glutæus maximus in a man, thirty-one years old, as the result of an embolism. He has found no similar case recorded in literature.

13. **Hernia of Appendices Epiploicæ.**—Muscatello reports two cases of this nature which, together with the one reported by Bruns, prove that herniæ of isolated appendices epiploicæ actually occur, though they do not present characteristic symptoms. Even when such herniæ are spontaneously reduced and produced no immediate serious local trouble they result in secondary changes which later become evident, such as adhesion of the intestine to the neck of the sac, the development of an external hernia, or the increase in size of one already in existence.

14. **Transmission of Measles Through a Third Healthy Person.**—Siegert reports a case in which it was demonstrated that a certain patient received the contagion of measles through a healthy person who had been with other children suffering from that disease. All other methods of infection were positively excluded.

ZENTRALBLATT FUER GYNAEKOLOGIE.

September 15, 1906.

1. Eclampsia Without Convulsions, By G. BINDER.
2. Simplification of Measuring the True Conjugate, By L. VON BYLICKI.

1. **Eclampsia Without Convulsions.**—Binder reports a case which he describes under this caption. The patient had a normal labor, but subsequently had increasing headaches, repeated attacks of amblyopia, and then fell into a sudden state of unconsciousness which lasted for many hours. This was accompanied by decided unrest of the muscular system, rolling about in bed and crying and singing. The urine contained considerable albumin, which disappeared in a few days.

GAZZETTA DEGLI OSPEDALI E DELLE CLINICHE.

September 9, 1906.

1. Changes in the Cardiovascular Apparatus. Produced by Influenza Toxines, By G. GHEDINI and S. LIVIERATO.
2. Facial Hemispasm as an Equivalent of Peripheral Facial Paralysis, By NEGRO.
3. Contribution to the Study of Echinococcus Cysts of the Mesentery, By L. GALOZZI.
4. A New Method of Disinfecting Rooms, By ALBERTO GASPARINI.

1. **Disturbances of the Circulation After Influenza.**—Ghedini and Livierato study the changes in the heart and bloodvessels after an influenza, and conclude that the lesions of the nervous mechanism of circulation, intracardial and extracardial, which occur after influenza, are due to the action of the bacterial nucleoproteids of influenza. The toxines of influenza have a selective action upon the nervous system.

4. **New Method of Disinfection for Rooms.**—Gasparini experimented with the vapors of sulphur and of lead nitrate combined in the form of cones, according to his own formula. The room where the experiments were made contained fifty-two cubicmetres. Silk threads were infected with cultures of various germs, and the disinfectants were burned in the room for varying lengths of time. The author found that gas generated by twelve of his cones per hundred cubicmetres killed anthrax spores in the room. Water was placed on the floor of the room in open dishes, because the anhydrides developed by burning the cones combine to form acids with water. The method is especially applicable in the disinfection of operating rooms.

LA RIFORMA MEDICA.

September 8, 1906.

1. The Physiopathology of Lymphatic and Sanguineous Circulation from the Viewpoint of the Defense of the Body Against Infections and Intoxications, By G. BOERI.
2. A Case of Roger's Disease, By P. FABRIS.
3. The Two Scolices of the Echinococcus, By G. ROCCHI.

1. **Defenses Against Infection.**—Boeri says that when bacteria enter the subcutaneous tissue, the serous cavities, etc., they do not penetrate directly into the blood, but get into the lymph. If large doses of bacteria are injected as mentioned, and if a fistula be made in the thoracic duct, it will be found that the blood is sterile, while the lymph flowing from the fistula contains the germs injected. If small doses of bacteria be injected they may never reach the blood, as the lymph from the fistula in such cases is found to be sterile. What has been said of bacteria also pertains to poisonous products developing in the subcutaneous, the serous, or the interstitial spaces, save that toxines may reach the blood both through the lymph and through the blood capillaries. The lymph offers both defensive properties against bacteria and toxines, as well as facilitates for the spread of infection.

2. **Roger's Disease.**—According to Fabris, who reports a case of this malady, Roger's disease is an anomaly of the heart, due to the arrest of development of the interventricular sæptum. It is characterized by a purring systolic murmur, loud, high pitched, as well as prolonged. It begins at the systole, but drowns both normal sounds, and has its maximum intensity at the upper third of the præcordial region. No cyanosis

is noted with this affection, and the disease may go on unnoticed. The intracardial compensation takes place in virtue of a dilatation of the pulmonary artery.

September 15, 1906.

1. The So Called Recurrent Sensibility (*To be continued*), By S. Ponsini.
2. A Rare Case of Otitic Cerebellar Abscess, By G. Alagna.
3. Carbon Disulphide in the Treatment of Lobar Pneumonia, By Luigi Masciangioli.
4. The Preservation of Rabic Virus in Glycerin, By Jullio Mazzei.

2. Rare Case of Otitic Abscess.—Alagna's case is interesting, because a large cerebellar abscess was found at autopsy in a patient who did not present any active ear lesions for a long time. At autopsy the tympanic cavity was found empty, no ossicles having been left by the previous destructive process. Suppurative lesions were found in the mastoid, but the drum and the tympanic cavity were free from lesions, the otitis must have healed a long time before the abscess developed. Probably the old otitis left a focus in the mastoid, which later was the starting point of the abscess.

4. Preservation of Hydrophobic Virus with Glycerin.—Mazzei concludes from his study of this subject that the virus of hydrophobia can be kept for a long time (eighty days) in glycerin without losing its properties. The virus passes in large quantities through Berkefeld's filter (type V), filtration producing but a slight increase in the period of incubation.

ROUSSKY VRATCH

August 19, 1906.

1. The Differentiation of Human Blood from that of Lower Animals by the Shape of the Methæmoglobin and Fat Crystals in Medicolegal Investigations (*Concluded*), By A. V. Grigorieff.
2. Sensitiveness of the Bones of the Face in Degenerates, By M. O. Schaikevitch.
3. On Experimental Cirrhosis of the Liver, By A. F. Drzhevetzki.
4. Casuistic of Paratyphoid Affections, By M. S. Millman.
5. Changes in the Ova in Atrophic Graafian Follicles (*Concluded*), By V. J. Roubaschkine.
6. Clinical Observations on Digalen (*Continued*), By Z. Th. Orloffski.

1. Diagnosis of Human Blood Stains.—Grigorieff describes the following method for detecting human blood stains on linen, etc.: Solutions are prepared from bits of linen, etc., stained with blood by extracting the blood with twenty per cent. alcohol rendered alkaline with one tenth per cent. solution. Two sets of solutions should be prepared—a strong and a weak one. On examining these solutions, crystals of methæmoglobin and of fat are found, which differ so markedly in man and in lower animals that the method can be used in medicolegal investigations as a complement to the serum method of Uhlenhuth, which is already well known.

2. Sensitiveness of the Facial Bones in Degenerates.—Schaikevitch noticed in examining degenerates that the gentlest tapping of the jaw, or of other facial bones with a percussion hammer is followed by a sensation of pain in persons exhibiting physical signs of degeneration. Diseased condition of the bones, teeth, etc., should of course be excluded. In healthy persons this percussion did not produce pain, and the pain in degenerates was in proportion to the distinctness of the signs of degeneration. He did not find this sign associated with hyperæsthesia or hyperalgesia of other parts of the body. According to Schaikovitch, the periosteum is the source of the sensitiveness in the facial bones.

3. Experimental Cirrhosis of the Liver.—According to Drzhevetzki, the most important experimental work recently done on the ætiology of cirrhosis was that of Dantchakova, who injected staphylococci into the blood of rabbits, and of Scagliosi, who fed animals on alcohol, and at the same time injected various bacteria. Scagliosi found cirrhotic changes in the livers of these animals, though other workers had not found any with alcohol alone as exciting cause. Kravkoff injected staphylococci into birds, and produced cirrhosis of the liver. The present author injected cultures of staphylococci (aureus and albus) into rabbits. An abscess developed at the site of injection in most cases. For control purposes laparotomy was performed in one rabbit in each group experimented upon, and a piece of liver was removed for examination. These animals usually recovered rapidly from the operation. The doses of culture injected were gradually increased. The microscopical examination of the livers of these animals after a four months' period of infection with staphylococci, was entirely negative. In none of the animals did a fatty degeneration or a cirrhosis develop. The animals in which the liver was examined before as well as after infection were especially valuable in this work, inasmuch as a comparison of the slides showed that no cirrhotic changes had taken place. In normal rabbits there are often areas of connective tissue and of small round cell infiltration about the veins. The point brought out by this research is that rabbits should be operated upon and pieces of their livers examined before, as well as after the experimental injection of staphylococci. Possibly infection continued for a longer time would produce changes in the liver.

August 26, 1906.

1. Twisting of the Sigmoid Flexure of the Colon (*To be continued*), By F. K. Weber.
2. A Note on the Gastric Juice in Jaundice, By S. S. Zimnitzky.
3. Clinical Observations on Digalen (*Concluded*), By Z. Th. Orloffski.
4. Operating Bed for Obstetric Cases, By P. P. Miklaschewski.

2. The Gastric Juice in Jaundice.—Zimnitzky is convinced at the result of his experiments that the changes observed in the gastric juice in jaundiced individuals are due to alterations in the glandular cells of the stomach, and not as Kirikoff would have it, as the result of the irritation of the vagus nerve. The changes in the blood due to the retention of bile in the system act upon the gastric cells and cause a hypersecretion of gastric juice in jaundice. Only the psychical phase of gastric secretion is governed by the vagus; the chemical phase is governed by the sympathetic nerve.

3. Operating Bed for Obstetrics.—Miklaschewski describes an ingeniously constructed bed which can be converted into an obstetric operating table. The footboard of the bed is provided with a handle which locks the two halves of the foot of the bed. These halves can be separated, the lower part of the bed hinging on either side, so that the operating table consist of the upper half of the bed (including the headboard), and the operator sits on a stool between the separated and spread halves of the foot. The latter are used as stands for instruments, etc. Stirrups are attached to the bed so that they are swung into place when the footboard is separated for operative work. This bed is especially designed for provincial lying in asylums, where there is a scarcity of trained assistants.

ARCHIVES OF PÆDIATRICS.

September, 1906.

1. The Weight of the Viscera in Infancy and Childhood, with Especial Reference to the Weight of the Thymus Gland. By D. Bovaird, Jr., and M. Nicoll, Jr.
2. The Blood Changes in Mumps, By I. S. Wile.
3. Does the Bacterial Content of City Milk Influence the Infantile Death Rate? By G. W. Goler.
4. Nervous Children, By A. Church.

1. **The Weights of the Viscera in Infancy and Childhood.**—Bovaird and Nicoll reached the following conclusions: 1. The study of the average weights of the viscera in infants and children up to the age of five years shows that there is a constant relation between the weights of the more important viscera. For example: a. The weight of the liver will average seven times that of the heart. b. The weight of the spleen will average one tenth that of the liver. c. The weight of the kidney will average one ninth that of the liver. 2. The weight of the thymus gland as usually given is excessive, owing to the use of pathological glands in determining the standard for normal conditions. 3. The average weight of the thymus at autopsy is approximately six grammes. 4. There is no evidence of a growth of the thymus after birth, under ordinary conditions, but under special conditions it may grow and hypertrophy to an enormous degree.

2. **The Blood Changes in Mumps.**—Wile states that as a result of the examination of the blood in twenty consecutive cases of mumps he has reached the following conclusions: 1. Lymphocytosis is a constant symptom in mumps. 2. The lymphocytosis is relative and absolute. 3. Lymphocytosis is noted on the first day, no matter how small the tumor may be, and continues until all swelling has disappeared. 4. It is more marked with bilateral than with unilateral mumps. 5. It is most marked in children who have reached puberty. 6. It is present in the disease in adults, but is not extensive. 7. Eosinophiles are slightly decreased in the beginning of the disease, but rise to normal or beyond it during convalescence. The eosinophilia is higher in bilateral than in unilateral involvement. 8. The basophiles are not affected in this disease. 9. The polynuclear neutrophiles vary relatively inversely with the lymphocytes. 10. With orchitic complications the polynuclear neutrophiles tend to increase relatively, though there may be no absolute leucocytosis. 11. Hyperleucocytosis may recur in mumps, but not to an excessive degree. 12. There is no secondary anæmia. 13. Lymphocytosis is a diagnostic feature of mumps. 14. Lymphocytosis differentiates mumps from adenitis.

3. **Does City Milk Influence Infantile Death Rate?**—Goler gives a chart showing data during two periods of five years each. In the first period the precautions taken to obtain a pure milk supply were crude and imperfect; in the second, with the experience which had been acquired they were much more effective. The chart with its problems is a strong argument for cleanliness in the stable and dairy, for icing and sterilizing the cans, and not the milk, in handling the municipal milk supply.

4. **Nervous Children.**—Church calls attention to certain fundamental facts of development in the early years of life to suggest the readiness with which nervous disturbances may occur in children. He thinks the unstable organization of the nervous apparatus of the child has received too little attention. For example, night terrors while often attributable to improper pulmonary action, adenoids, nasal obstruction, heart disease, etc., almost never occur outside of neurotic limits. Convulsions in infancy may be forerunners of epilepsy. Retarded development of speech, stammering, lisping, are often indications of neurotic tendency and unfinished nervous system. A tendency to delirium with fever, even when the latter is of slight degree, is very common among nervous children. Enuresis, whether nocturnal or diurnal, is often of mental origin and often amenable to mental treatment. Various skin diseases also admit of similar explanation, and it is well known that many children have little resisting power when exposed to zymotic infections. Insanity in its various phases in children may be similarly explained, especially when a bad heredity is superadded.

DUBLIN JOURNAL OF MEDICAL SCIENCE.

September, 1906.

1. Clinical Report of the Rotunda Hospital. By E. W. TWEEDY and A. HOLMES.
2. Two Cases of Infantile Hemiplegia. By D. J. O'CONNOR.
3. A Note on the Opsonic Index, By B. BROOKE

1. **Clinical Report of the Rotunda Hospital.**—Tweedy and Holmes report a number of interesting fatal cases in connection with their service. The first was a case of eclampsia in which the liver was the seat of extensive anæmic infarction with hyaline or fibrinoid degeneration of the smaller branches of the hepatic artery and the capillaries associated with them. The jaundice from which the patient suffered was attributed to the blocking of the biliary circulation in the infarcted portions. The second case was one of ruptured uterus, the placenta being free in the abdomen. Death occurred in four hours. The authors believe that uterovaginal ruptures are usually associated with cervical cicatrices resulting from previous labors, which prevent full dilatation of the cervix. The third case was one in which there had been five convulsions before her reception at the hospital. Three more followed within four hours, labor then came on, with spontaneous delivery four hours later. A few hours later in apparently a choking condition, but without marked convulsions. The fourth case was one of septic peritonitis. Hysterectomy was performed on the seventh day, with death upon the table. The fifth case died of lobar pneumonia nine days after delivery. The patient was an alcoholic. In the sixth case an arm and leg had presented and a macerated fœtus was removed with great difficulty. Death occurred on the sixth day from acute sepsis. There was pus in the peritoneal cavity, pus in the tubes, and the uterus was studded with sloughing myomata.

3. **A Note on the Opsonic Index.**—Brooke says of our knowledge of opsonins: 1. They are, as far as we know at present, specific; the index for tubercle may be low, while it is high for staphylococci. 2. They are normally present in the blood or serum to a greater or lesser degree. 3. An increased production is stimulated by the invasion of the body by bacteria. 4. They are destroyed if submitted to a temperature of 60° C. for fifteen minutes. 5. They act on the microbe, and do not merely stimulate the leucocyte. 6. The opsonic content is independent of temperature or leucocytosis. As to diagnosis and prognosis, observations must be made at successive periods, one observation being of no value: 1. If there is a low opsonic index this may be due (a) to the fact that it is normally low, which means that the patient must avoid exposure to infection; or (b) the patient may be in the negative phase, which is due to autoinoculation, as when one's resistance fails in acute phthisis by repeated absorption of toxic material; or (c) infection may have taken place and prove overwhelming. 2. If there is a normal index at each observation the patient is not infected. 3. If there is a high index it may be due to (a) autoinoculation, but if found on several occasions it will probably mean (b) that infection has taken place and the body is resisting successfully. As to treatment one must determine whether the disease is general or local. If the former inoculation merely adds poison to poison; if the latter, inoculation may work wonders. The essential principle of the method is to choose chronic cases and regulate the inoculation by the opsonic curve. It is especially adapted for the treatment of tuberculosis.

GLASGOW MEDICAL JOURNAL.

September, 1906.

1. Postgraduate Demonstration in Ward Two, Glasgow Royal Infirmary, May 17, 1906, By J. W. ALLAN.

2. Unusual Case of Ruptured Tendo Achillis, By D. MACARTNEY.
3. Case of Marked Paroyxsmal Dyspnœa Occurring in a Patient with Double Aortic Disease, and Wherein were Disclosed After Death Striking Appearances of Chronic Mediastinitis, By J. S. MCKENDRICK.
4. The Clinical and Pathological Aspects of a Fulminating Case of Epidemic Cerebrospinal Meningitis of the Convulsive Comatose Type of Tonides, By G. A. ALLEN and J. L. DUNN.

1. **Postgraduate Demonstration.**—Allan reports a very interesting clinic embracing a case of Addison's disease, and one of acromegaly with marked glycosuria. As to the diagnosis in Addison's disease, the pigmentation of the skin is likewise a feature in malignant disease, phthisis, uterine disease, pregnancy, and arsenical poisoning. This phenomenon in addition to vomiting, asthenia, and dyspnœa justify a diagnosis. Low blood pressure is one of the evidences of this disease, and this is probably due to absence or diminution in the secretion of the suprarenal capsules. It would, therefore, seem logical to administer suprarenal extract to raise the blood pressure, and remove the other abnormal conditions. The cause of Addison's disease may lie in the condition of the suprarenal capsules, or it may be due to some disorder in the sympathetic plexuses in or near the glands. In the author's case of glycosuria combined with acromegaly the treatment consisted of the extract of pituitary body combined with extract of the pineal gland. The theory is that the various ductless blood glands mutually react upon each other, and in health maintain a balance. The author is not very enthusiastic as to the results from this plan of treatment.

4. **Cerebrospinal Meningitis.**—Allan and Dunn report this interesting case, severe, of sudden onset, and of brief duration, as an example of diagnosis by means of modern cytological and bacteriological methods. The cerebrospinal fluid contained the diplococcus meningitidis intracellularis of Weichselbaum, which is regarded by many as the sole cause of the epidemic form of the disease. The organisms were found only in small numbers in the exudation, though the symptoms were acute and the pathological changes widespread. The presence of the diplococcus within the cells of the nasal secretion is not to be considered diagnostic, as it may be found in the nasal secretions of healthy persons if they come in contact with those who have meningitis. The organism was also found in the meninges, while there was an absence of endarteritis in the meningeal vessels, and the presence in the exudation of large phagocytis ingesting pus cells. The conditions found in the olfactory lobes and cribriform plate did not point definitely to infection through the nasal passages. It is not improbable that the organisms in the nasal secretion reached the nose through the lymphatics from within the cranium.

Letters to the Editors.

WARTS AND SUGGESTIONS.

42 WEST ONE HUNDRED AND FOURTEENTH STREET,
NEW YORK, *August* 28, 1906.

To the Editors: Referring to your remarks on page 601 of the *Journal,* regarding the influence of suggestion in the treatment of warts, I would report the following: A married woman, twenty-nine years of age, mother of one child and in vigorous health, had twenty-one warts of all sizes distributed over her fingers and hands. She was very anxious to get rid of them, but in spite of the application of various home remedies, they had persisted for about two years. She then came to me for advice. With scissors I cut the warts flush with the skin and cauterized the bases with lunar caustic. Within three months the warts had all returned, with a few new ones added and the old ones larger than before.

In the mean time I had another patient with five or six warts on one hand, most of them rather small and flat. They had all but recently appeared. In this case I cauterized the two larger ones with fuming nitric acid, and as a result I found that within a few weeks even the warts not at all interfered with had completely disappeared.

Because of the experience in this latter case, when the first patient reapplied for treatment of her warts, I now also in her case cauterized with nitric acid (without previous cutting) about five of the largest warts out of a total of over twenty-five, and within six weeks the patient came to show me that all the warts she had had, even those not treated with the nitric acid, had completely disappeared. What is the explanation for the disappearance of the twenty untreated warts?

MAXIMILIAN SCHULMAN.

Proceedings of Societies.

OBSTETRICAL SOCIETY OF PHILADELPHIA.

Meeting of April 5, 1906.

The President, Dr. WILMER KRUSEN, in the Chair.

The Use of the Pessary.—Dr. H. A. SLOCUM read a paper on this subject (see *New York Medical Journal,* September 11, 1906, page 418).

Dr. CHARLES P. NOBLE believed in the use of the pessary in its proper field, which field, however, he regarded as limited. He had never seen a nulliparous woman cured by the use of the pessary, and believed that such women should be treated with the pessary only as a palliative procedure. In single women, because a cure could not be promised, he believed it better to do the Alexander operation. Puerperal cases, in his opinion, offered a broad field for the use of the pessary.

Dr. J. M. BALDY believed that puerperal cases were the only ones in which the pessary was of use; therefore he eliminated that class absolutely from his remarks. The field he regarded as limited as to time, even in the puerperal case. In his opinion any good accomplished by the pessary did not arise from mechanical alteration of the position of the uterus, and he could not conceive of its having any place in the cure of sterility. He believed the pessary to be of value in puerperal cases only; namely, within six weeks or three months from the beginning of the displacement. He believed that it did no good whatever in the way of mechanical cure in any kind of chronic displacement, and that it did harm in the mental and moral atmosphere created about the patient.

Dr. RICHARD C. NORRIS, contrary to Dr. Baldy's opinion, said he had seen backward displacement cured by these mechanical means, which he thought was the experience of most gynæcologists. The puerperal cases, he agreed, were ideal ones for correction of backward displacement by the pessary. In nulliparous women he had abandoned the use of the pessary and at once recommended an operation. With reference to the value of the pessary in connection with plastic work, he thought it was unquestionably better to do either an Alexander operation or ventrosuspension at the same sitting and have the patient relieved from the annoyance and uncertain results of the pessary. It was an instrument capable of much harm when the patient was a neurasthenic. Its greatest danger was found when backward displacement fixed by adhesions and periuterine disease was treated by the general practitioner who placed a pessary and hoped to relieve the patient. If he had but one word to say on the subject, it would

be that the pessary should never be used, except by expert gynæcologists. He thought that Dr. Slocum had probably exaggerated, in his enthusiasm, the real value of the pessary; but, that it had a field and was used successfully by men of skill and under proper conditions, in his opinion, went without saying.

Dr. JOHN C. DA COSTA took issue with Dr. Slocum with reference to the uterus being held in retrodisplacement by atmospheric pressure, for the reason that he did not think there was any air, and therefore no atmospheric pressure, in the closed abdomen. He explained that if the uterus were lying closely back in a bed, and the abdomen were opened, there would be atmospheric pressure. This was illustrated in the placing of wet leather on a brick and attempting to raise it. Years ago he abandoned all hard pessaries, and found the only satisfactory one to be a tampon not larger than a small walnut placed back of the neck of the uterus. He had seen very bad results from the use of the pessary, and believed the remedy for any pathological condition with displacement to be cœliotomy to release the uterus, to break up adhesions, to bring it forward, and to support it by any of the various operations for this purpose.

Eversion of the Bladder.—Dr. ELLA B. EVERITT advocated the use of the comprehensive term eversion of the bladder to include: (1) The protrusion of the bladder through a defect in the vesicovaginal sæptum, a condition congenital or acquired; (2) the extrusion of the organ through the dilated urethra; and (3) the congenital anomaly commonly designated as exstrophy of the bladder and associated with a defect in the anterior abdominal wall. Three cases were reported illustrative of the first and third types. From the literature Dr. Everitt had collected the reports of sixty-one female patients operated on and eight on which the operation was attempted. With the total number of about 350 for both sexes the proportion occurring in the female sex was approximately 20 per cent. Operative measures were classified under: (1) Those in which the abdominal opening is closed by flaps; (2) direct suture of the bladder; (3) diversion of the urine into some portion of the large intestine by transplanting the ureters. The immediate mortality from these modes of operation was quoted from Katz, showing the average mortality to be about 20 per cent.

Myomectomy.—Dr. CHARLES P. NOBLE read a paper with this title (see *New York Medical Journal,* May 19, 1906, page 1008).

Dr. RICHARD C. NORRIS said it was his practice to avoid myomectomy whenever he could. Occasionally cases were met with where a single or two or three subperitoneal tumors were pedunculated or had a narrow base, when it was plainly to the patient's advantage to remove the growths and not to remove the uterus. The mortality of myomectomy in pregnancy he said was certainly higher than in women not pregnant, except in favorable cases—a few or single pedunculated growths. The maternal mortality of various reports ranged between 5 and 20 per cent. The proportion of miscarriages following the operation, he said, was given as between 15 and 30 per cent. From the standpoint of statistics myomectomy during pregnancy had a limited field which was becoming more restricted as time went on.

Dr. J. M. BALDY said he was largely in accord with Dr. Noble's paper. He did not agree with Dr. Norris regarding the great dangers in pregnancy, and thought it was the field of all others in which the operator was justified in taking chances. He had operated five or six times during pregnancy and saved the child in all but one case. There was no mortality of the mothers and no unsatisfactory reaction. Recognizing that theoretically there was more danger in an operation, he did not consider that a competent surgeon would have materially worse results. He noted the probability of recurrent fibroid growth and agreed with Dr. Noble that they were almost always multiple.

Dr. THEODORE A. ERCK had had one case in which he removed, per vaginam, a submucous fibroid of the size of a goose egg. The patient became pregnant within a year after the operation, and gave birth to a living child. Labor was normal and there were no complications. In cases of pregnancy complicated by fibroids he said that the advice of the surgeon must depend largely on the location of the tumor or tumors and their probable influence on the progress of pregnancy and labor, as well as on the other symptoms caused by them. He did not believe that the surgical menopause was any more severe than in the absence of operation.

Dr. BALDY thought there was such a wide range for the severity of the symptoms of the menopause that there was no fixed standard to be adopted. Exactly the same thing happened after an operation. He believed that the character of the menopause of any given case allowed to go to the natural menopause would be similar to that brought on by operation.

Dr. NOBLE, in closing, said he believed that a woman with fibroid tumor and pregnant should not be operated upon during pregnancy, unless there was something threatening her life. At full term, for a fibroid in the pelvis he would do a Porro operation. In reference to complicated labors following myomectomy, he had quoted Winter to the effect that about all the women had normal labors; only one case of dystocia could be attributed to the operation. In his own experience he had had no such case.

Meeting of June 7, 1906.

The President, Dr. WILMER KRUSEN, in the Chair.

In Memoriam of Dr. William H. Parrish.—Dr. CHARLES P. NOBLE read a memorial notice of Dr. Parrish.

Endometritis.—Dr. BROOKE M. ANSPACH said that Tucker had recently called attention to a lack of uniformity in the general view concerning the nature and the significance of endometritis. Hunner had drawn attention to a very prevalent idea that leucorrhœa was commonly an indication of endometritis. He thought that quite the contrary was true and said that the cervix was much oftener the seat of a persistent discharge than the endometrium. Kelly had concluded from a study of the scrapings in a thousand cases of curettement that endometritis, aside from acute gonorrhœal infection, was rare. Dr. Anspach thought Tucker's view justifiable, believing that the large number of forms of endometritis at present described led to an overestimate of the importance and the frequency of the disease. A multiplication of terms existed, because the affection was classified from so many different standpoints. In Dr. Anspach's opinion it was unnecessary to point out the endless variety of endometritis which result from a classification based on the symptoms. The terms "suppurative," "hæmorrhagic," "catarrhal," "exfoliating," "putrid," were sufficient indication of the extent to which such a classification might be carried. An anatomical classification or a classification which was based on the histology of the endometrium was to be preferred, because of its simplicity. Thus endometritis was reduced to acute and chronic forms; the chronic forms subdivided into glandular and interstitial. In order to determine the clinical importance of endometritis as it occurred at the University Hospital Dr. Anspach had analyzed the findings in 322 specimens of endometrium which had been submitted to histological examination. The specimens comprised the uterine scrapings from 144 cases of simple dilatation of the cervix

and curettement, 56 cases of trachelorrhaphy or amputation of the cervix, and 25 cases of suspensio uteri. The endometrium was also examined histologically in 34 cases of hysterectomy for pelvic inflammatory disease and in 36 cases of hysteromyomectomy for fibroid tumor. The result of the examinations were given as follows:

	Cases.	Endometritis.	Normal.
Simple dilatation and curettement	144	75	69
Trachelorrhaphy or amputation of the cervix	56	42	14
Suspensio uteri	25	13	12
Hysterectomy (pelvic inflammatory)	34	28	6
Hysteromyomectomy	36	34	2
Totals	295	192	103

Among 27 other specimens there were 24 instances of endometritis. The following conclusions were drawn concerning endometritis: (1) The disease should be classified as acute and chronic; chronic forms may be subdivided by the pathologist into glandular and interstitial; each of these has several subdivisions which need not be considered clinically; (2) chronic endometritis is usually complicated by another pelvic lesion, such as lacerated cervix, retroposition of the uterus, pelvic inflammatory disease and tumors of the uterus or ovaries; (3) leucorrhœa is not often due to uncomplicated chronic endometritis; (4) uncomplicated chronic endometritis is exceptional and does not have much importance either from the symptoms which it produces or from the treatment which it requires; (5) chronic endometritis as a rule is treated successfully only when it is treated in conjunction with its complications.

Hæmorrhage in the Newly Born. Bilateral Extrauterine Pregnancy.—Dr. L. J. Hammond reported these two cases and exhibited the specimens. The first patient was a male infant born after a prolonged labor with forceps delivery; asphyxiated at birth, but revived after twenty minutes of artificial respiration. There was an instrument mark on the left side, just above the ear; but no scar on the head, face, or other part of the body. The child was normal at birth. There was subsequent rise of temperature, which later subsided. On the ninth day there was another rise of temperature, which did not respond to treatment, and there developed a most pronounced case of opisthotonus and death followed in convulsions on the fourteenth day. The pathologist's report showed extensive venous hæmorrhagic infiltration of the cortex and the meninges in the neighborhood of the superior longitudinal sinus. Upon opening the brain both lateral ventricles were found distended by an organic clot and the brain substance was displaced. The case was one of most pronounced intracranial hæmorrhage ever seen by Dr. Hammond in the newly born. The instrumental delivery had been promptly carried out, and there seemed no reason to suspect the extensive intracranial lesion.

Case II.—Mrs. E. J. G., aged thirty-one years; previous history unimportant; had been well previous to the attack; mother of two living children. She was seen in consultation with Dr. Stuart C. Runkle, who had already diagnosticated extrauterine pregnancy. Upon removal to the hospital for operation the condition was believed to be the usual extrauterine pregnancy of one tube only. It had ruptured and the abdomen was found filled with clot and much liquid blood. As hæmorrhage became profuse after the left tube had been secured, the right tube was sought for, as being almost certainly the one from which the new hæmorrhage arose. The bleeding point was quickly found, but not before the abdomen was again filled with blood. Investigation showed the blood coming from the right tube, which had also ruptured and was the seat of a pregnancy. The specimens showed the placental tissue in the tube. The microscopical examination confirmed the clinical picture of bilateral extrauterine pregnancy. The patient was operated on on May 28th and was doing well at the time of the report. There were perfectly typical lochia pouring out through the abdominal incision.

Dr. W. H. Wells, in discussing Dr. Anspach's paper, said that his experience with patients coming to the clinic was that the cases had been the result of septic infection at the time of labor, and that comparatively few had been due to gonorrhœal infection.

Ruptured Tubal Pregnancy, with Secondary Attachment of the Ovum to the Cæcum.—Dr. William H. Wells read this paper (to be published).

Dr. William S. Higbee thought an interesting feature of the case of Dr. Hammond was the extensive attachment of the placenta to the parietal peritonæum and intestines on both sides. The pregnancy had taken place at the fimbriated extremity on one side and a little inside of this on the other. There would not have been a canal for the discharge of this through the abdominal wall, but that the bleeding was so profuse that it could not be stopped except by gauze packing. In the majority of cases under Dr. Hammond's care no drainage was used. In this case it was necessary for hæmostatic purposes, and this proved to be fortunate because of the discharge afterward.

Dr. William R. Nicholson was particularly interested in the case of hæmorrhage in the newly born, because of the history of the moderately difficult axis traction operative delivery and the development after the third day of symptoms closely allied to those of infection in a newly born infant. While the evidence pointed to the forceps or the difficult labor as having been the cause, he did not accept this as absolutely conclusive. He had seen a number of infections occurring in newly born infants that were evidenced merely by hæmorrhagic symptoms with fever, and thought there was a certain element of doubt in this case. He inclined to the belief that there was a tendency to bleed from some general constitutional cause, aside from the forceps application. Had the Simpson forceps been used he would be more inclined to attribute the injury to the forceps, believing that more injury was done by this forceps than by the axis traction instrument if the latter was used as it should be. With the general signs in such a case pointing to local involvement of the brain the chance, though a slight one, should be given to the child through an operation.

Dr. Hammond, in closing the discussion, said there had been extensive adhesion to the bowel in his case of extrauterine pregnancy. Regarding drainage when there was great shock from hæmorrhage, he left the drainage and packing out in cases in which the hæmorrhage could be controlled, because they prolonged shock and encouraged the formation of adhesions. In a case in which the bleeding was so general and the placental tissue was so abundant and adherent to all the pelvic structures, he felt it to be risky to close the cavity. He therefore packed off the entire pelvic region. As remarked by Dr. Higbee, this was fortunate. He had never seen such perfectly typical lochia as occurred without any disturbance to the patient. Regarding the case of hæmorrhage in the newly born, Dr. Hammond had at first thought the forceps responsible, but had concluded after having talked with Dr. Nicholson that this might not have been the cause. It had been applied skilfully, and it did not seem probable that it could have caused the rupture of such a large vessel or number of vessels as to produce such an amount of hæmorrhage in the cranial cavities, especially without any lesion to the skull. Infection might be thought the cause, because in the first three days of the child's life there were no symptoms, the symptoms having developed when one would expect an infective invasion to become manifest.

Book Notices.

Trachomtherapie in der verseuchtesten Gegend Ungarns. Von Dr. MARCZEL FALTA, Augenarzt in Szeged. Redigiert von Sanitätsrat Dr. MAX OHLEMANN, Augenarzt in Wiesbaden. Mit 7 Abbildungen. Berlin: S. Karger, 1906. Pp. 104.

Grandular conjunctivitis is unusually common in Hungary, and the type is often severe. In the small town of Szeged there are no fewer than 5,000 trachoma patients. Falta devotes a monograph to the detailed consideration of the various forms of this disease, its medical, mechanical, and operative treatment, and the surgical management of complications, such as pannus, trichiasis, entropion, ptosis, and diseases of the lacrymal passages. Expression with roller forceps is recommended as the most radical and effectual procedure for the severe forms. The author describes a new method, that of burnishing the inner surface of the lid with a rapidly revolving steel which he has devised. He professes to have had excellent results with this instrument, particularly in cases of thickening of the tarsus and in the presence of unusually hard, cicatricial granules which could not be squeezed out with the roller forceps.

The Autotoxicoses, Their Theory, Pathology, and Treatment. By HEINRICH STERN, PH. M., M. D., Director of the Institute for Medical Diagnosis and Research in the City of New York, etc. Chicago: G. P. Engelhard & Co., 1906. Pp. 222.

The author states that a condition of autotoxicosis is very difficult to demonstrate as such; that it is less common than is generally accepted, and that the great majority of disorders ascribed to self poisoning are not at all of autotoxic origin. He does not think that "toxic phenomena due to ectogenous material" can be considered autotoxic, as food stuffs cause toxicoses and not autotoxicoses.

In a volume of this size it is not possible to discuss this topic in a comprehensive fashion, and the work is intended to give a general survey of the subject .

Man and His Poisons. A Practical Exposition of the Causes, Symptoms, and Treatment of Self Poisoning. By ALBERT ABRAMS, A. M., M. D. (Heidelberg), F. R. M. S., Consulting Physician to Denver National Hospital for Consumptives, Mount Zion Hospital, and the French Hospital, San Francisco. Illustrated. New York: E. B. Treat & Co., 1906. Pp. 268. (Price, $1.50.)

The author makes this work an exposition of Bouchard's contention that man is, as it were, constantly standing on the brink of a precipice and continually on the threshold of disease. He holds that the human body is a receptable and laboratory of poisons, and that man is exposed constantly to the danger of being overpowered by poisons generated within his system. He refers to the investigations of de Vries, Bose, Burke, and Loeb as they bear on the subject of life, reviews some of the earlier work relating to autointoxication, and describes the toxicology of fatigue, the emotions, sleep, and mental action. The symptoms and treatment of the condition are reviewed, and there is a chapter on prophylaxis.

While the author is sometimes radical in his views and discursive in their presentation, yet he presents the subject in an interesting manner and has many excellent suggestions.

The Teeth and Their Care. By THADDEUS P. HYATT, D. D. S., Member of the Second District Dental Society. Brooklyn: King Press, 1906. Pp. 43.

The need for trustworthy sources of information concerning the teeth available for popular instruction is a real one. The lay public has in the course of time acquired a fair fund of knowledge which enables them on the whole, to give intelligent attention to many bodily needs, yet, beyond the necessity for a routine cleansing of the dental apparatus and the need for avoiding pain, but little is popularly known of the important relations between sound dental organs and the maintenance of bodily health.

Dr. Hyatt's little book is full of good advice and intelligent suggestions as to the care of the teeth, and is a work which could be profitably read by all who have need for the kind of information which it contains. We would suggest that some further amplification of the attention given to the mouth as a distributing centre for pathogenic germs would be a desirable addition to the work. The evidence recently adduced that the mouth is the portal of entry for most pathogenic bacteria, and the fact that the toxic influence of bacterial mouth diseases is prejudicial to the general health, need to be emphasized and clearly presented to the public mind in connection with the best prophylactic means for combating their effects

Miscellany.

The Late Professor Curie.—The debt that science owes to Professor Curie and his indefatigable wife and fellow scientist is already apparent; how much medicine may owe to him in the near future can only be guessed, but there are many hints that suffering humanity is likely to be immensely benefited by his labors, and that notably in directions that had hitherto baffled all the researches of physicians. It was only natural that the indications of great therapeutic virtues shown to be possessed by the x rays and other similar agencies, should at once direct the attention of physicians on the discovery of radium to its possible therapeutic virtues. Particularly has that battlefield of medical defeats, cancer, become once more the scene of conflict between medical science and disease, and while it is yet far too early to build hopes of ultimate victory, many outpost actions have been reported with apparently successful results, by Cleaves, Morton, Tracy, Exner, Gussenbauer, Robert Abbe, Truman Abbe, and others, and in epitheliomatous cases by Mackenzie Davidson, of London, though the latter was forced to the conclusion that "radium, with the present method of application, is no use whatever in carcinoma."—*St. Louis Medical Review.*

The First Sherlock Holmes in Medicine.—At the Indianapolis meeting of the American Pharmaceutical Association Professor E. V. Howell, of the University of North Carolina, presented to the Historical Section a copy of *The English Physician Enlarged*, by Nicholas Culpeper, printed in 1653, Professor Howell called attention to the following excerpt as indicating that the deductive method of Sherlock Holmes is not a matter of recent years: A woman, whose husband had bruised himself, took his water and away to the doctor trots she; the doctor takes the water and shakes it about. How long hath this party been ill? saith he. Sir, saith the woman, he hath been ill these two dayes. This is a man's water, quoth the doctor, presently this he learned by the word he; then looking on the water he spied blood in it. The man hath had a bruise, said he. I, indeed, saith the woman, my husband fell down a pair of stairs backwards. Then the doctor knew well enough that what came first to danger must needs be his back and shoulders, said: The bruise lay there. The woman she admired at the doctor's skill and told him that if he could tell her one thing more she would

account him the ablest physician in Europe. Well, what was that? How many stairs her husband fell down. This was a hard question, indeed, able to puzzle a stronger brain than Mr. Doctor had, so *pumping* goes he, and having taken the urinal and given it a shake or two, enquires where about she lived, and knowing well the place, and that the houses thereabouts were but low built houses, made answer (after another view of the urine for fashion sake) that probably he might fall down seven or eight stairs. Ah! quoth the woman, now I see you know nothing, my husband fell down thirty. Thirty! quoth the doctor, and snatching up the urinal, is here all the water, saith he? No, saith the woman, I spilt some of it in putting of it in. Look you there, quoth Mr. Doctor, there were all the other stairs spilt.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending October 5, 1906:

Places.	Date.	Cases.	Deaths.
Smallpox—United States.			
Louisiana—New Orleans	Sept. 15-22	1 imported	
Smallpox—Foreign.			
Canada—Toronto	Sept. 8-15	1	
Ecuador—Guayaquil	Aug. 1-31		30
France—Marseilles	Aug. 1-31		6
France—Paris	Aug. 18-15	11	
Gibraltar	Sept. 2-9	1	
Great Britain—Liverpool	Sept. 8-15	1	
Italy—General	Aug. 23-Sept. 13	12	
Russia—Odessa	Sept. 1-8	3	1
Yellow Fever—Foreign.			
Cuba—Habana	Sept. 29	1	
Cuba—Santa Clara Province	Oct. 2	1	1
Mexico—Merida	Sept. 16-22	3	2
Mexico—Tierra Blanca	Sept. 16-22	1	
Mexico—Vera Cruz	Sept. 16-22	1	
Cholera—Insular.			
Philippine Islands—Manila	Aug. 4-18	153	128
Philippine Islands—Provinces	Aug. 4-18	1,104	856
Plague—Foreign.			
Brazil—Campos	Aug. 14-18		7
China—Hangchow	Aug. 18-25	Present.	
China—Hongkong	July 7-Aug. 11	33	34
Egypt—Alexandria	Sept. 2-13	6	3
Egypt—Beni Souef Province	Sept. 11	1	1
Egypt—Suez	Sept. 5-10	6	4
Mauritius	July 25-Aug. 15	5	4
Peru—Lima	Aug. 17-20	Present.	
Turkey—Trebizond	Aug. 8-29	10	3

Public Health and Marine Hospital Service:

List of Changes of Station and Duties of Commissioned and Noncommissioned Officers of the Public Health and Marine Hospital Service, for the seven days ending October 3, 1906:

ALLEN, G. C., Pharmacist. Leave of absence granted Pharmacist Allen for twenty-three days, from August 4, 1906, amended to read twenty-three days from August 5, 1906.

FOGARTY, J. N., Acting Assistant Surgeon. Granted leave of absence for one day, September 18, 1906.

GOLDSBOROUGH, B. W., Acting Assistant Surgeon. Granted leave of absence for two days, from September 29, 1906.

HICKS, W. R., Acting Assistant Surgeon. Granted leave of absence for ten days from September 22, 1906.

HOBDY, W. C. Passed Assistant Surgeon. Granted leave of absence for ten days, from October 1, 1906.

LAVINDER, C. H., Passed Assistant Surgeon. Directed to proceed to Wilmington, N. C., and assume command of the Service, upon the arrival at Stapleton, N. Y., of Passed Assistant Surgeon H. W. Wickes.

MCKEON, F. H., Assistant Surgeon. Granted leave of absence for one day.

SALMON, T. W., Assistant Surgeon. Granted leave of absence for seven days, from September 29, 1906, under Paragraph 191 of the Regulations.

STANSFIELD, H. A., Passed Assistant Surgeon. Relieved from duty at Baltimore, Md., and directed to proceed to Havana, Cuba, reporting to Passed Assistant Surgeon R. H. von Ezdorf, for duty.

WATKINS, MCDONALD, Acting Assistant Surgeon. Granted leave of absence for one day.

WERTENBAKER, C. P., Surgeon. Extension of leave of absence for seven days, from September 22nd, granted Surgeon Wertenbaker, amended so as to read for four days only.

WICKES, H. W., Passed Assistant Surgeon. Directed to proceed to Stapleton, N. Y., and report to the Medical Officer in Command, for duty and assignment to quarters, upon being relieved from duty at Reedy Island Quarantine Station by Passed Assistant Surgeon W. A. Korn.

Appointments.

DR. ROBERT A. HERRING, of Mississippi, commissioned (recess) as Assistant Surgeon, Public Health and Marine Hospital Service, October 1, 1906.

DR. FRENCH SIMPSON, of Texas, commissioned (recess) as Assistant Surgeon, Public Health and Marine Hospital Service.

Boards Convened.

Boards of medical officers were convened to meet on October 10, 1906, for the purpose of making physical examinations of applicants for cadetships in the Revenue Cutter Service at the following named places: *Washington, D. C.*, Assistant Surgeon General J. W. Kerr, Chairman; Assistant Surgeon J. W. Trask, Recorder. *Boston, Mass.*, Surgeon R. M. Woodward, Chairman; Passed Assistant Surgeon B. S. Warren, Recorder; *New York, N. Y.*, Assistant Surgeon J. S. Boggess, Chairman; Acting Assistant Surgeon R. Knowles, Recorder. *Philadelphia, Pa.*, Surgeon J. M. Gassaway, Chairman; Assistant Surgeon H. McG. Robertson, Recorder. *Baltimore, Md.*, Surgeon L. L. Williams, Chairman; Acting Assistant Surgeon ——— ——— Recorder. *Chicago, Ill.*, Surgeon G. B. Young, Chairman; Assistant Surgeon E. T. Olsen, Recorder. *Detroit, Mich.*, Surgeon Fairfax Irwin, Chairman; Assistant Surgeon R. A. C. Wollenberg, Recorder.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, for the week ending October 6, 1906:

BUCK, CARROLL D., First Lieutenant and Assistant Surgeon. Left Fort Leavenworth, Kas., for the Army General Hospital, Presidio of San Francisco, Cal.

CHAMBERLAIN, W. P., Captain and Assistant Surgeon. Left Jackson Barracks, La., on leave of absence for two months.

CRABTREE, GEORGE H., First Lieutenant and Assistant Surgeon. Left Ancon, Canal Zone, Isthmus of Panama, on six weeks' leave of absence.

DELANEY, M. A., First Lieutenant and Assistant Surgeon. Returned to attending surgeon's office, Washington, D. C., from leave of absence.

EASTMAN, WILLIAM R., First Lieutenant and Assistant Surgeon. Left Army General Hospital, Presidio of San Francisco, Cal., on leave of absence for ten days.

HARVEY, PHILIP F., Colonel and Assistant Surgeon General. Returned to Governor's Island, N. Y., from leave of absence.

HAVARD, VALERY, Colonel and Assistant Surgeon General. Left Washington, D. C., *en route* to Newport News, Va., for duty as chief surgeon, Cuban Expedition.

HOFF, JOHN VAN R., Colonel and Assistant Surgeon General. Granted thirty days' leave of absence.

KEAN, Major and Surgeon. Left Washington, D. C., *en route* to Havana, Cuba, for duty.

LEWIS, W. F., Captain and Assistant Surgeon. Returned from Chicago, Ill., to his proper station, Fort Sheridan, Ill.

MORRIS, S. J., First Lieutenant and Assistant Surgeon. Reported for duty as transport surgeon of the *Sumner*.

RAYMOND, H. I., Major and Surgeon. Left Columbus Barracks, Ohio, with troops for Fort Mackenzie, Ill.

WOODRUFF, CHARLES E., Major and Surgeon. Returned to Plattsburg Barracks, N. Y., from leave of absence.

The following named medical officers have been ordered to duty with the expedition to Cuba:

ALLEN, JOHN H., First Lieutenant and Assistant Surgeon.
BARTLETT, COSAM J., First Lieutenant and Assistant Surgeon.
BEVANS, JAMES L., First Lieutenant and Assistant Surgeon.
BIRMINGHAM, HENRY P., Major and Surgeon.
BROOKS, WILLIAM H., Captain and Assistant Surgeon.
CHURCH, JAMES R., Captain and Assistant Surgeon.
CLARKE, JOSEPH T., Major and Surgeon.
COWPER, HAROLD W., First Lieutenant and Assistant Surgeon.
DAVIS, WILLIAM T., First Lieutenant and Assistant Surgeon.
DUVAL, DOUGLAS F., Captain and Assistant Surgeon.
FAUNTLEROY, POWELL C., Captain and Assistant Surgeon.
FRICK, EUCLID B., Major and Surgeon.
GEDDINGS, EDWARD F., Captain and Assistant Surgeon.
GILCHRIST, HARRY L., Captain and Assistant Surgeon.
HANSELL, HAYWOOD S., First Lieutenant and Assistant Surgeon.
HARTSOCK, FREDERICK M., Captain and Assistant Surgeon.
HAVARD, VALERY, Colonel and Assistant Surgeon General.
JOHNSON, RICHARD W., Major and Surgeon.
KIEFFER, CHARLES F., Major and Surgeon.
KOERPER, CONRAD E., Captain and Assistant Surgeon.
LITTLE, WILLIAM L., First Lieutenant and Assistant Surgeon.
MARROW, CHARLES E., Captain and Assistant Surgeon.
MILLER, EDGAR W., First Lieutenant and Assistant Surgeon.
MILLER, REUBEN W., First Lieutenant and Assistant Surgeon.
PATTERSON, ROBERT U., First Lieutenant and Assistant Surgeon.
QUINTON, WILLIAM W., Captain and Assistant Surgeon.
RICHARDS, ROBERT L., First Lieutenant and Assistant Surgeon.
SHOOK, JAY R., Captain and Assistant Surgeon.
SMART, R., First Lieutenant and Assistant Surgeon.
STONE, JOHN H., Captain and Assistant Surgeon.
TAYLOR, BLAIR D., Lieutenant Colonel and Deputy Surgeon.
TEFFT, WILLIAM H., First Lieutenant and Assistant Surgeon.
THOMASON, HENRY D., Captain and Assistant Surgeon.
TRUBY, ALBERT E., Captain and Assistant Surgeon.
TRUBY, WILLARD F., Captain and Assistant Surgeon.
WEBB, WALTER D., Captain and Assistant Surgeon.
WEBER, HENRY A., Captain and Assistant Surgeon.
WHITCOMB, CLEMENT C., First Lieutenant and Assistant Surgeon.
WILLCOX, CHARLES, Major and Surgeon.
WILSON, COMPTON, First Lieutenant and Assistant Surgeon.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy for the week ending October 6, 1906:

BOYD, JOHN C., Medical Director. Ordered to duty in command of the U. S. Naval Medical School Hospital, in addition to present duties.

BROOKS, F. H., Assistant Surgeon. When discharged from treatment at the U. S. Naval Hospital, Newport, R. I., granted sick leave of absence for six weeks.

DEBRULER, J. P., Assistant Surgeon. Ordered to duty at the U. S. Naval Medical School Hospital, in addition to present duty.

DUBOSE, W. R., Medical Inspector. Detached from duty as assistant to the Bureau of Medicine and Surgery, Navy Department, Washington, D. C., etc., and ordered to command U. S. Naval Hospital, Yokohama, Japan, sailing October 20, 1906.

EVANS, S. G., Surgeon. Detached from the *Louisiana* and from treatment at the Naval Hospital, Boston, Mass., and granted sick leave of absence for two months.

HALLOWAY, J. H., Passed Assistant Surgeon. Ordered to the *Nevada*.

LOVERING, P. A., Medical Inspector. Detached from duty at the U. S. Naval Medical School, Washington, D. C., and ordered to command the U. S. Naval Hospital, Norfolk, Va.

MCLEAN, A. D., Passed Assistant Surgeon. Detached from duty at the Navy Recruiting Station, Cincinnati, Ohio, and ordered to duty at the Navy Recruiting Station, Detroit, Mich.

WENTWORTH, A. R., Surgeon. Detached from the *Franklin*, Navy Yard, Norfolk, Va., and ordered to the *Louisiana*, sailing October 4, 1906.

WOODWARD, J. S., Assistant Surgeon. Ordered to the Navy Recruiting Station, Cincinnati, Ohio.

Births, Marriages, and Deaths.

Born.

MASON.—In Washington, D. C., on Thursday, September 27th, to Dr. Charles F. Mason, U. S. Army, and Mrs. Mason, a daughter.

PHELAN.—In Fort Rosencrans, California, on Friday, September 14th, to Dr. Henry du R. Phelan, U. S. Army, and Mrs. Phelan, a son.

Married.

ADSIT—BROWN.—In New York, on Saturday, September 15th, Dr. Henry Adsit and Miss Susanah Peachy Pythres Brown.

BREMER—BIGELOW.—In Boston, on Saturday, September 29th, Dr. John L. Bremer and Miss Mary Bigelow.

FLUKE—REGAN.—In Philadelphia, on Wednesday, September 26th, Dr. George T. Fluke and Miss Eleanora Regan.

HESS—BAIR.—In Pittsburgh, on Thursday, September 20th, Dr. Herbert Hess and Miss Clara E. Bair.

KELLIHER—LINEHAN.—In Boston, on Wednesday, October 3rd, Dr. Patrick Kelliher and Miss Margaret L. Linehan.

PATERSON—HOPKINS.—In Williamstown, West Virginia, on Saturday, October 6th, Dr. Henry Stuart Paterson and Miss Charlotte Wise Hopkins.

PRICE—CREASY.—In Chatham, Virginia, on Friday, September 26th, Dr. John Willis Price and Miss Grace Malina Creasy.

TRACY—JAMES.—In New York, on Wednesday, October 3rd, Dr. John M. Tracy, of Springfield, Massachusetts, and Miss Clara Day James.

WOOD—FOSS.—In Philadelphia, on Tuesday, October 2nd, Dr. George Bacon Wood and Miss Helen Foss.

WOOTTON—SANDERS.—In South Nyack, N. Y., on Saturday, September 29th, Dr. Herbert Wright Wootton and Miss Florence Randolph Sanders.

Died.

BEEKMAN.—In Atlantic City, N. J., on Saturday, September 29th, Dr. John Culver Beekman, of New York, aged forty-nine years.

DICKERMAN.—In Abington, Massachusetts, on Monday, October 1st, Dr. Silas B. Dickerman, aged fifty-seven years.

DUDLEY.—In Bath, N. Y., on Sunday, September 30th, Dr. Joseph C. Dudley, aged seventy years.

FOOTE.—In Larchmont, N. Y., on Friday, October 5th, Dr. Edward Bliss Foote, aged seventy-seven years.

GREENAWAY.—In Toronto, Canada, on Thursday, September 27th, Dr. Minerva M. Greenaway.

HOEBER.—In New York, on Friday, October 5th, Dr. Emil Wilhelm Hoeber, aged seventy-three years.

MCQUEENEY.—In Boston, on Monday, October 1st, Dr. Francis J. McQueeney, aged forty-seven years.

MILLER.—In Jeannette, Pennsylvania, on Sunday, September 23rd, Dr. J. C. Miller, aged forty-seven years.

OSWALD.—In Syracuse, N. Y., on Thursday, September 27th, Dr. Felix Leopold Oswald, aged sixty years.

PACKWOOD.—In Buffalo, N. Y., on Monday, September 24th, Dr. William Jasper Packwood, aged fifty-four years.

PRATT.—In Corning, N. Y., on Tuesday, October 2nd, Dr. George W. Pratt, aged eighty-five years.

SKINNER.—In Belleville, N. J., on Wednesday, September 26th, Dr. Daniel M. Skinner, aged seventy-one years.

SKINNER.—In Wilmington, Delaware, on Saturday, September 29th, Dr. William T. Skinner, aged fifty-five years

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THE SALT-FREE TREATMENT OF EPILEPSY, APROPOS OF THIRTY-SEVEN CASES.*

BY ALFRED GORDON, M. D.,

Philadelphia,

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The management of essential epilepsy is a matter of great concern to every one of us. The difficulties we encounter at first in controlling the attacks and then in removing them totally, are at times insurmountable. It is a general experience that even in those cases in which we succeed to increase the intervals between the attacks, the latter will nevertheless recur now and then. Our impotence in such cases is a well established fact.

However, since physiological chemistry supplied us with data concerning elimination, viz., metabolism before and after attacks, also in the intervals free from convulsions, our views on the pathogenesis of this affection have considerably broadened. The consensus of opinion at present is that the easier the elimination, the better the condition of the digestive tract, the less nitrogenous food is taken in,—the less frequently occur the epileptic attacks. Also it is commonly observed, that when in the course of treatment with bromides the diet should become neglected, the frequency of individual attacks will again increase. It is therefore evident that the chemistry of the epileptic organism is chiefly at fault. Our endeavors are at present in that direction. It is there that we expect to find the explanation of the pathogenesis and the solution of the problem of treatment.

In recent years a new element entered the field of investigations of animal metabolism, viz., sodium chloride. The rôle it plays in chemical processes of the organism has been demonstrated by competent observers to be very important. Sufficient experimental material and clinical observations have accumulated to show the value of the presence or absence of sodium chloride in the diet.

According to Claude and Villaret (*Société de biologie,* Mai 30, 1904) introduction of large doses of sodium chloride in an organism insufficiently fed, increases the act of nutrition, which is manifested by a considerable increase of elimination. When sodium chloride is removed from the régime, the sodium chloride of the organism continues to be eliminated, urea diminishes in quantity, and phosphoric acid has a tendency to increase. On the other hand the experiments of Achard, Gaillard, and Poisseau (*Société de biologie,* October 24, 1903; *Semaine médicale,* July, 1904) prove that retention of urea in the tissues can be accomplished *only* by sodium chloride; that substances not combined with albuminoids can exist in the tissues only with the aid of sodium chloride which attracts fluids necessary for their dilution. When the organism is deprived of alimentary salt, it utilizes all chloride molecules of reserve. The latter taken up by the blood are carried to the kidneys which eliminate them. It is therefore easy to conceive why removal of salt from the diet leads to a discharge from the organism of material not combined with albuminoid substances, such as urea, while phosphorus intimately connected with the nuclei of cells remains undisturbed. It is therefore evident that sodium chloride plays a capital rôle in the phenomena of osmosis, and this is true not only in its relation to urea, but also to other bodies.

When these important observations on sodium chloride in normal life were applied to the study of epilepsy, it was found that also in epileptic individuals dechlorization leads to an amelioration of the general nutrition, because the excretion of the products of metabolism is increased, while the constituent principles, such as phosphates, are eliminated in a very small quantity. Basing myself upon these experimental data I undertook a series of clinical investigations. I applied these principles to the study of thirty-seven cases of epilepsy.

In order to determine the value of dechlorization, every one of my patients was treated as far as possible in an identical manner. Nitrogenous food and stimulants were absolutely forbidden. The quantity of starchy food was reduced to a minimum. Milk, water, eggs, some vegetables, fruit, and bread were the only articles allowed. Bromides were given uniformly with some variations according to the age of the patient. All the patients were therefore placed in the same conditions. Such a treatment inevitably led to a more or less marked diminution of epileptic seizures. When this was accomplished, I began my observations on the withdrawal of salt from the diet. This could be done only gradually, as the patients experienced an aversion for food without salt. Adults were easily convinced of the necessity of this treatment, but I encountered great difficulties in dealing with children. Twenty-five adults were entirely deprived of salt, while the twelve children a minimum of salt was given. The *gradual* method of withdrawing salt was a decided advantage for my observations. Twenty adults were decidedly

* Read before the State Medical Society of Pennsylvania.

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benefited. This could be noticed not only when the salt was totally withdrawn, but also when the gradual reduction of it was in operation. The major attacks became less severe, shorter in duration, and removed at longer intervals from each other. The maximum benefit was obtained when no salt was taken with the food. One patient, a girl of eighteen, who is still under my observation, has been without salt for the last nine months and only two seizures have been observed during this period. As the children were more difficult to be managed, the results were less favorable than in adults. Nevertheless, whenever I did succeed in reducing or withdrawing the salt, the results were similar to those in adults. It was interesting to observe on many occasions that, everything else being equal, indiscretion on the part of some patients with respect to salt had its almost immediate echo in the general health, and this would follow in a short time by a seizure. This was so remarkable that one would get the impression that sodium chloride was a direct exciting cause of epilepsy, but I must add that the same aggravation was noticeable also in indiscretion of diet in general. However, it is well to remember that the salt did play a rôle in the aggravation of the diseased condition.

It has been my practice in a number of cases to withdraw gradually the bromides, when by the stated management I succeeded in reducing the number of seizures, and after the patient had learned to follow the correct diet. It was then interesting to me to determine whether the withdrawal of sodium chloride had a different effect upon the frequency of epileptic seizures in cases when the organism is under the influence of bromides and when the patient does not take the bromides. With this object in view I withdrew the bromides from some patients, and only when the amelioration was marked. A close and prolonged observation led me to this belief that the before mentioned favorable results of dechlorization is especially noticeable when the organism is being bromidized. When the bromides are withdrawn, the dechlorization will continue its beneficial effect but only for a short period and again prompt amelioration is noticed as soon as the bromides are readministered.

Conclusions. My study of the thirty-seven cases led me to the following conclusions. Sodium chloride plays undoubtedly an important rôle in the chemistry of the organism. The suppression of alimentary salt in the diet of epileptics has a favorable effect on epileptic seizures inasmuch as it reduces their frequency and their severity. It is of the same value in the treatment of epilepsy as the strict observance of dietetic and hygienic rules. Both factors combined aid considerably in reducing and controlling the seizures. Reduction or complete removal of sodium chloride from the diet gives better result, while bromides are taken than while they are not taken. The fact that suppression of alimentary salt puts in action the chloride molecules of the organism, that the elimination of various products of metabolism such as urea, is *ipso facto* facilitated, —this fact, I say, is highly corroborative, if not absolutely so, of the toxic pathogenesis of epilepsy. That there is a hypertoxic underlying basis had been proved beyond doubt by various investigators. Suffice it to mention among recent writers Jules Voisin, Péron, and R. Petit.

An uncomplicated experiment led me to the same conclusion. To some of my patients who happened to have attacks at regular intervals I administered methylene blue a few hours before a seizure. During the convulsions the urine which they voided involuntarily was clear, but the greenish blue color began to appear after the seizures. This experiment naturally leads to the idea of retention of poisonous material in the organism and to a general intoxication of the tissues. The nervous phenomena of an attack is the consequence of an intoxication which reached its maximum.

The studies on the rôle of sodium chloride are of great value. Their application to other pathological condition, such as ascites, œdemata, cirrhosis of the liver, and cardiac and renal diseases, is now well known. It is gratifying to utilize this knowledge in the therapeutics of nervous diseases, in the presence of which we feel frequently powerless. Dechlorization is certainly not a specific for epilepsy, but it adds a new element to our meagre neurological armamentarium. It also adds considerable value to our old conception of epilepsy as of a disease, in which faulty chemical processes play an enormous rôle.

1430 PINE STREET.

ECZEMA. A SKETCH OF THE PROCESS AND ITS MANAGEMENT.

BY JAMES C. JOHNSTON, A. B., M. D.,
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The term eczema has come to carry a definite meaning which may be briefly phrased in the words, catarrhal dermatitis. The old writers insisted on the definition, and modern histologists have supported their view by demonstrating catarrhal exudate in tissues which clinically showed no surface weeping. More than that, even in the clinic, subacute and chronic eczemas are comparatively readily convertible by irritation into exuding lesions.

Classification.—In spite of the apparent simplicity of the anatomical basis eczema shows an eruptive character almost as protean as syphilis, and unless it is classified with the utmost care, its diagnosis is a difficult task. The differentiation of greatest importance is of course made on the bases of etiology, which is broadly internal and external. Division may be carried out further, according to the following scheme.

Eczema,
(1) of internal origin—autotoxic, reflex (?), drug (e. g. cod liver oil).
(2) of external origin—occupational, seborrhœic, climatic.

Differentiation of the two great classes is not difficult and is readily done on clinical lines alone. Occupation eczema occurs first on exposed parts, hands, forearms, face, and neck, showing always its greatest development in the areas first involved. It occurs in those who handle various irritant substances, formalin, sugar, or aniline dyes. Seborrhœic dermatitis spreads gradually from the scalp always to the folds, a localization of which traces can be distinguished even when the disease has be-

come practically universal. Its borders are generally sharply defined, and its crusts and scales yellowish and greasy. There is evident peripheral progression *en masse*. "Winter itch," dermatitis hiemalis, is a true eczema, very common in this climate, which appears first on the wrists and ankles in the shape of clean looking, scaly patches, quite often ringed.

Eczema of internal origin is all but invariably developed with absolute symmetry on the cheeks and external surfaces of the limbs in circumscribed areas, leaving the folds free in the beginning. The border shades gradually into the surrounding skin, is dotted with new vesicopapules, and the surface is clean, not greasy. In process of involution the symmetry may be lost, and ætiological differentiation become difficult.

Fig. 1.—Acute vesicular eczema

For convenience in carrying out treatment, eczemas are divided into their lesional and regional varieties, according to the scheme of Duhring. Like all inflammations, they are acute, subacute, and chronic. The lesions are as follows: Acute, erythematous, papular, vesicular, pustular (impetiginous), weeping, crusted; subacute, scaling; chronic, thickened, lichenified.

Acuteness and chronicity in eczema are not so much questions of time elapsed as of local conditions. An eczema may persist for years in a succession of acute relapses; on the other hand, the inflammation may be subacute from the beginning.

Regional diagnosis is not of great importance. The lesional variety in this category is dependent on local anatomical conditions. For instance, eczema of the brow, lids, scrotum, and female genitalia, acute or chronic, is of the erythematous variety, because of the looseness of underlying connective tissue, which permits a diffusion through it of the serous exudate, largely obviating the latter's escape through the surface epithelium. On the palms and soles the serum is limited in amount and locked in by the thick horny layer. Interfering with the normal processes of cornification, the horny layer crumbles, and scales are always formed, vesicles more rarely. Eczema of the scalp is seborrhœic almost without exception.

Symptomatology is quite simple. An acute attack may in its evolution show all the lesional varieties enumerated, or it may skip many stages. There is one constant phenomenon—no eczema can heal without scaling. In the beginning of an acute outbreak, accompanied by burning, itching, or acute pain, there is the congestive onset of all inflammations, the erythematous stage, which may persist until scaling sets in. Generally, however, on the erythematous blush and in its neighborhood, appear pinhead papules, which are soon capped by tiny vesicles. They increase rapidly in numbers, not in size, and fuse into an œdematous patch, which fades into the surrounding skin and whose periphery is dotted with newly developed vesicopapules. In children and the cachectic, infection often occurs, and both the individual papule and the patch show pus contamination. General septicæmia may result from infection of the skin and deeper tissues. Death has been reported as occurring in such cases. In the event of moderate development of the pus process the seropurulent exudate dries into a thick crust resembling that of impetigo. Over an uncontaminated patch the horny layer is soon loosened and washed off, and serum with cellular detritus gradually dries into a crust, a little less dark and thick than that of the impetiginous lesion. If the exudate is poured out in great quantities there is no time for crust formation and a condition obtains which is truly called weeping. In an eczema of so acute a course it not infrequently happens that exudation is not confined to the skin. It involves the soft parts below, the circumference of the limb or trunk is increased, and movement becomes difficult. Pain is a constant accompaniment of deep infiltration.

Under treatment, or in the natural course of

events, the serous exudate decreases in quantity, the surface becomes dryer, crusts fall off, and the surface layer is imperfectly formed in the shape of scales. The borders of the patches retain their old character, sharply defined in the case of seborrhœic dermatitis, shading gradually into the surrounding skin in all other instances. As time passes and the subacute disease becomes chronic, proliferation in all the layers of the skin increases its thickness, it becomes difficult to pick up between the fingers, and the skin lines deepen. The cross marking of those lines divides the surface into little rectangular blocks, an appearance called lichenification from its resemblance to the patch of lichen planus. It is rare that all the patches reach the same stage of involution at one time, so that the entire process may often be seen in one generalized outbreak. A single large patch healing from the outside may show all the phenomena. The reflux of serum in involution is generally like that of the tide, slowly ebbing from its height, but there may be a peripheral progression resulting in the formation of circinate lesions. Subjective symptoms accompany all these lesions, in the form of itching, continuous or paroxysmal.

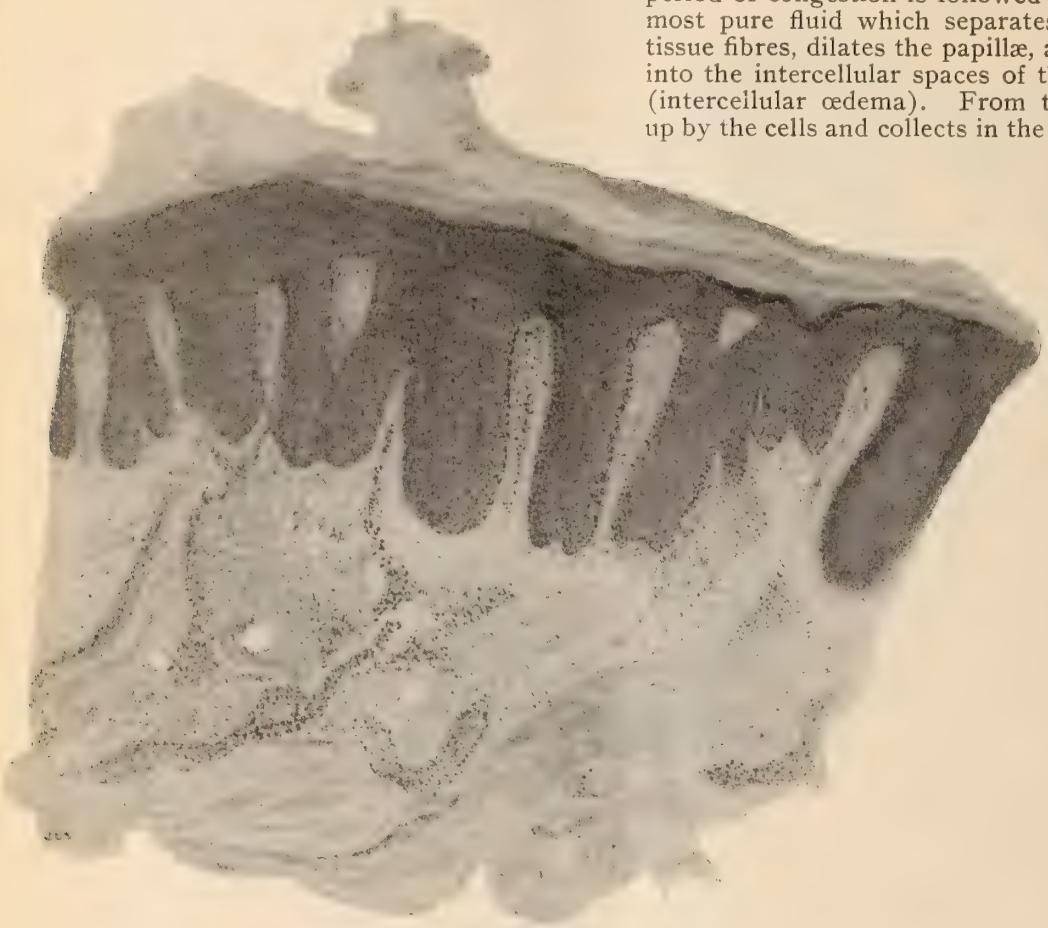


Fig. 2.—Subacute crusted eczema.

There is a rare expression of the eczematous process, which occurs on the back of the neck and extensor surfaces of the upper parts of the limb, in the shape of papules, rarely fusing into patches, and considerably larger than the pinhead efflorescences of an acute general outbreak. The eruption is refractory to treatment, persists often in its papular form, and itches furiously. These characters, however, are not pronounced enough to warrant its separation from the eczema complex. The onset of acute eczema may be heralded by various clinical evidences of systematic intoxication, headache, nausea, fever, urinary changes, lymphyocytosis.

Histopathology.—The papillary layer of the corium is the seat of the exudate, which is responsible for the changes in eczema. The amount poured out in a given period of time determines the lesional variety seen. A number of papillæ with their connecting plexus of underlying vessels are involved at once. In acute eczema, at its beginning, the period of congestion is followed by a flood of almost pure fluid which separates the connective tissue fibres, dilates the papillæ, and finds its way into the intercellular spaces of the mucous layer (intercellular œdema). From them it is taken up by the cells and collects in the form of vacuoles in their protoplasm. At the horny layer the influx is temporarily arrested, and larger fluid collections containing detritus and precipitated albumin, but no bacteria, results which are the vesicles of the clinic (Fig. 1). If the exudate continues, especially if it increases in amount, the intercellular cement substance is dissolved, and the horny cells are washed away. The serum trickles then down the surface; as fibrin is deposited from it and detritus, leucocytes, and bacteria are caught in the meshes of the fibrin a crust is formed (Fig. 2).

When the serous element is not so pronounced as in a subacute onset or in involution, lymphocytes appear everywhere, surrounding the vessels, filling the papillary body, and invading the epidermis. Their numbers may completely obliterate the dividing line between epithelium and connective tissue. At the time of their appearance an impulse common to growth in such inflammations is imparted to the tissues. Fibroblasts, endothelium, and epithelium all proliferate. The rete pegs increase in length and breadth. The mucous layer thickens (acanthosis) along with the rest of the skin (Fig. 2). Œdema has now disappeared to a considerable extent, and the vessels are only slightly dilated. The epidermic cells have still more serum sup-

plied to them than can be used in multiplication, and their granular protoplasm with their nuclei is retained almost up to the surface, instead of passing through the stage of keratohyalin into keratin. The normal conversion into horny and granular cells may be partly carried out in process of regression here and there so that the epidermis presents bizarre pictures of developmental failure. The whole process being a left handed keratinization is called parakeratosis, and is the anatomical basis for most scaling. Instead of the branny desquamation which is physiological, the parakeratotic cells in eczema stick together and are given off in masses.

In chronic eczema, the picture differs only in degree from the stage just described. There are new vessels, new connective tissue, and new epithelium formed, so that the thickness of the whole skin is notably increased. Parakeratosis may be seen in certain areas surrounded by normal horny epithelium. Fig. 3 shows a section from a chronic eczema of the palms. The epithelial overgrowth in mucous and horny layers, and the parakeratosis resulting in crumbling (scaling) of the corneous material are plainly evident. In short, eczema differs not at all from the other fibrinous, lymphocytic inflammations except in the histological peculiarities occasioned by its site.

Ætiology.—It has been established beyond reasonable doubt that the vesicle of eczema contains no bacteria, and that the microorganisms found later in its crusts and scales are those which have their habitat normally in the skin. Bacteria rubbed into its surface produce their characteristic reactions, not eczema. Seborrhœic dermatitis is, so far as our observation goes, heteroinoculable and autoinoculable, and may possibly, therefore, be of microbic origin. The agent has never been found. Before the disease can spread and produce a generalized outbreak there must be preparation of the soil, so that in the last analysis the hypothetical parasite of seborrhœic dermatitis plays exactly the same rôle, as cold or formalin, in other eczemas of external origin, an excitant only.

Among the eczemas whose direct excitant is external, the most important are those of occupation. They occur among workers in aniline dyes, in tobacco, sugar, and flour particularly, and among cleaners. The process and localization in the beginning are the same as in the formalin dermatitis so often seen in laboratories in these latter days, acute vesiculation on face and hands. Eczema from irritant applications, iodoform and sulphur, occurs more or less frequently. In these, as in others, the irritant may initiate a subacute disease.

Dermatitis hiemalis is, in the climate of the northeastern States at least, the commonest type of eczema of external causation. There is no question that cold is capable of producing a proc-

Fig. 3.—Chronic scaling eczema of the palm

ess truly catarrhal, but like other irritants only in a susceptible subject.

After elimination of the group due to external irritants, as well as those provoked reflexly whose existence remains to be proved, there remains a class by far the more numerous in which causation must be looked for elsewhere than in the skin. This is the eczema of internal origin. If the symptoms recounted before are recalled it becomes evident that the individual must suffer from intoxication which, since it is not bacterial, must be laid to fault in the chemistry of the body. (In this connection this is the real meaning of diathesis, if not of idiosyncrasy.) We are familiar to some extent now with the results of specific intoxications caused by failure or excess of the internal secretions from the thyreoid and

adrenal so that, while the facts have no bearing directly on the point at issue, it is not a violent stretch of the imagination to predicate a poison elaborated in the economy in the causation of such a disease as eczema. Whether the toxic agent is single and specific, or multiple is not a matter of such moment as its place of elaboration and method of elimination. Cases in immigrants and in infants, resulting from improper diet, point to the gastrointestinal apparatus as the point of origin.

Thorough uranalysis in eczema, by which is meant among other estimations determination of the percentages of the nitrogen compounds, is still too imperfectly developed for definite conclusions to be drawn from it, but the indications point strongly to a disturbance in the nitrogen metabolism. Results vary with the individual, his diet, habits, and the stage of his disease. Nevertheless, aside from an increase of certain products like kreatinin and calcium oxalate, which is at times indicative of excessive tissue waste and which may be laid to the disease itself, there are certain alterations in the nitrogen partition which are fairly common in the prodromal stage and at the beginning of the eruption, such as increase of the uric acid and "undetermined nitrogen" percentages. It is practically impossible to say whether there is change in the amount of urea excreted because of the difficulty of determining the normal for the individual. Later in the disease these changes are not marked, or are entirely absent. Indicanuria, a clear indication of gastrointestinal intoxication, is quite as common in eczema as in other autointoxications, such as pruritus and dermatitis herpetiformis.

Reduced to the last analysis, all eczemas must have a basis of failure of metabolism for their development, slight or great as the case is acute or subacute in type. Otherwise, all those exposed to formalin vapor, to cold, or to the irritant of seborrhœic dermatitis would be subject to constantly recurring attacks. This discovery of the nature of the process would by no means reveal the character of the specific poison or poisons of eczema. It is extremely unlikely that they are to be found among the known products resulting from failure of urea synthesis in the liver, for these by-products occur in too many intoxications unaccompanied by skin lesion.

Diagnosis.—No one with the slightest experience need fail in the diagnosis of acute eczema. Subacute and chronic cases are more difficult, but they can always be stimulated to the point of surface exudation when their nature becomes clear. It is impossible to enter at length into the differential diagnosis of eczema because it would involve consideration of the larger number of inflammatory diseases of the skin.

Far greater importance attaches to the recognition of the varieties of eczema itself, lesional, regional, especially ætiological. Occupational and winter eczema begin on exposed parts and spread by continuity; seborrhœic dermatitis begins on the scalp and is disseminated by way of the folds; acute eczema of internal origin begins in symmetrical patches chiefly on extensor surfaces with indeterminate borders dotted with vesicopapules, clean looking, generally showing serous exudate. Subacute or chronic eczema may not show the symmetry or distribution, but the border shades gradually into the surrounding skin and in place of vesicopapules it is covered with light, papery, easily loosened scales.

Prognosis in eczema is always good. Uncomplicated cases even in the cachetic may be expected to resolve under proper treatment. In complicated cases (e. g., with septicæmia), the outlook becomes that of the complication. The intoxication is not of the sort to prove fatal despite vital statistics.

Treatment.—If it is true that this disease has an internal basis of causation (and there seems hardly a reasonable doubt of that in spite of our inability to fasten on the specific agent) treatment should be directed in every instance to its removal. The fact is not to be disputed that eczema does get well under external measures alone, but, it seems to me, only after the intoxication has ceased. We can interfere in proteid metabolism only indirectly by increasing the oxidizing power and preventing congestion of the liver. Proteid intake should be strictly limited so far as individual need will permit. In no case should the patient be allowed meat more than once a day, and then only the more easily digested varieties, fowl particularly. Fats and carbohydrates do no harm practically, except when fermentation in the individual is caused by excess of the latter. Fresh air, exercise, and iron are necessary to increase oxidation. Main reliance is to be placed, however, on elimination by every avenue. A cholagogue followed by a saline to be repeated as often as necessary, saline diuretics and large quantities (two or three quarts daily) of plain water fulfill the indications. By these measures it is possible to cut short an outbreak of generalized acute eczema to five or six days. The probability of such an outcome is of course increased if the case is seen in the prodromal stage or at the beginning of the eruption.

There seems to be a good deal empiricism in vogue in the feeding of infants which may be merely adaptation to idiosyncrasy, but my experience leads me to the belief that many babies with eczema are sufferers from insufficient nourishment. Improvement commonly follows an increase in all of the solid constituents of the milk. Among the poor in New York it is the general custom apparently to feed infants after six months with anything the parents happen to have. It is hardly necessary to remark that alcohol in any form should be interdicted. In dermatitis hiemalis and occupation eczema, so far as the direction lies within reason, the external irritation should be removed. I have seen men who could not live in this climate in winter. A little extra precaution in the way of clothing over exposed areas combined with local treatment is, however, generally sufficient.

There are some general rules in external treatment of the disease:

1. The patient should be thoroughly examined

every two days, and the application changed to meet the requirements of the areas involved.

2. Ointments are contraindicated for all exuding surfaces.

3. Remove all detritus, crust, pus, or scales from the surface.

4. Kaposi's dictum. Soothe the acute and stimulate the chronic patches.

Cleansing is accomplished by softening with sweet oil, boric acid ointment, or starch poultice. Old patches may be washed away with soap and water, once only, for water is a powerful irritant to the catarrhal surface. The thickened horny layer in palmar or plantar disease should be removed with ten to twenty per cent. salicylic plaster kept on continuously for two days, soaked off in hot water and reapplied if necessary. There is no reducing agent for the lichenified areas of chronic eczema like tar. It is used in the form of pix liquida, oil of cade, oleum rusci. These are mixed with ointment bases or with olive oil, or the oil of cade may be painted on the surface. The proportions vary from three to twenty per cent. in ointment, depending on the degree of thickening of the patch. It is better to begin with the smaller proportions, because no man knows the personal reactive equation. These ointments should be thoroughly rubbed in. After a soothing application, if the thickening is not all gone, the tar should be reapplied.

If the eczema is seborrhœic, the scalp needs special attention. After cleansing, which should be very carefully done, a cold cream containing three to four per cent. of ammoniated mercury should be thoroughly rubbed in once a day for four or five applications, the course repeated if necessary after an interval. The scalp should be kept in condition by application of resorcin or betanaphthol in alcoholic solution of the same strength. On the body or head the seborrhœic eczema requires no different treatment from other varieties, except in the call for mild antiparasitics in its subacute and chronic forms.

By the elimination of external factors and of internal as far as possible, by the stimulation of chronic patches, eczema is reduced to one basis in treatment, that of acute disease. If acute exudation occurs side by side with infiltration it is best to soothe the active process before attempting any stimulation, particularly in easily irritated cuticles. The surface having been thoroughly cleansed in erythematous, weeping and crusted patches, application should take the form of powder, dry or in a "shake lotion." The powders which are all desiccant, astringent, and slightly antiseptic, are zinc oxide, oleate, stearate, calamin, bismuth oleate or suboxid, magnesium, thymol iodide (aristol). The lotions should be basic in reaction, because pure water is irritating, contain no glycerin or alcohol, and at first should contain a percentage of ichthyol proportioned to local needs, a good indication being the amount of redness present. This may serve as a type:

℞ Zinc oleate, } .....āā ʒi;
Magnesium carbonate, }
Ichthyol, ...℥ss;
Lime water, ...℥iv.
M.

The lotion is shaken, a little poured out and sopped on the surface and allowed to dry, when the entire area is dredged with powder, starch, talc, or best of all, thymol iodide. Repeat the performance at least every three hours. When the surface begins to dry from absorption of the serous exudate beneath, there is a disagreeable sensation of tension. This is the indication for a change of application which the pastes meet, the lotion and powder being held in reserve against an exudative relapse.

Lassar's is a good exemplar of the pastes:

℞ Salicylic acid, ...gr. 5-15;
Zinc oxide, } .....āā ʒii;
Starch, }
Petrolatum, ...ad ℥i.
M.

The proportions are naturally varied to meet indications. In general, it may be said that pastes are in order when the surface is only slightly swollen, surface exudation has ceased, and scaling begins. The petrolatum relieves the dryness and tension, salicylic acid in this strength is keratoplastic, zinc oxide is astringent, and with the starch aids in drawing off the water from the skin and disposing of it by evaporation. If, during its use, surface exudation begins again, recourse should be taken promptly to the lotions.

When the activity of the changes has subsided still further, the skin is no longer tumified, and scaling is pronounced, another modification of application becomes desirable, in the form of cold creams. They are themselves refrigerating by evaporation, and with them are incorporated various keratoplastics, tincture of benzoin, salicylic acid, tar, resorcin, all in small quantities, not more than three per cent. The best base is an equal part mixture of wool fat and rose water ointment. A weak astringent, ammoniated mercury, is often a necessary constituent of these applications which should be kept constantly smeared on the skin surface, application being renewed three times a day, oftener if necessary.

By far the best of all keratin makers is lead, which is commonly used in the form of diachylon ointment. This is also often too strong in the official preparation and so produces various untoward results which can be avoided by diluting it with olive oil up to seventy-five per cent. Even then it may irritate a delicate skin.

In treating chronic eczema of the palms and soles (by the way, it is of first importance to distinguish between this condition and the hyperkeratoses) lead finds its greatest usefulness after the exhibition of tar, strong salicylic acid, and other reducing agents.

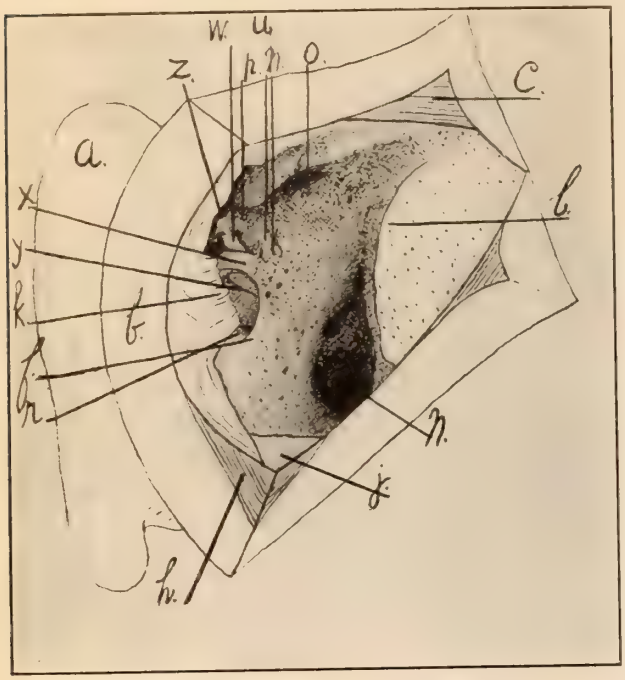
In case the progress of involution is arrested at any stage, and a subacute condition threatens to persist, it is only necessary to return for an application or two to the stimulants mentioned. Any eczema of moderate extent should disappear in four to six weeks, provided the patient follows directions, except in palmar and plantar disease when four months of expert handling may not be enough.

64 East Fifty-sixth Street.

THE RADICAL MASTOID OPERATION MODIFIED TO ALLOW THE PRESERVATION OF NORMAL HEARING.*

By W. Sohier Bryant, A. M., M. D.,
New York.

The hope of preserving the hearing led us to modify the technique of the radical mastoid operation in patients who had had good hearing up to a short time before the radical operation. These



are usually cases of acute extensive involvement of the temporal bone, more rarely cases of otitis media purulenta chronica, in which the sound conducting mechanism has been retained more or less intact.

Our object in these cases is to remove all the diseased bone and to produce perfect drainage, while at the same time preserving the auditory function of the middle ear. The ligamentous attachment and mucous membrane reduplications of the ossicular system lie between the epitympanum and the atrium, and prevent through drainage, though they allow drainage from both their upper and lower surfaces. To establish this drainage, we make a U-shaped myringotomy to drain the atrium, and open the mastoid antrum to drain the epitympanum. We must also remove all the diseased bone to arrest the progress of the infection and open all the cells of the middle ear system to throw them into one cavity leading to the epitympanum. The outer anterior wall of the antrum should be wholly taken away, except enough to support the annulus with the adjacent membrana tympani. Of course, the suspensory ligament of the malleus must be protected from injury, also the fan shaped ligament of the incus. By these procedures we are able to drain the upper and back part of the tympanum through the mastoid wound, and the lower anterior part through the meatus without permanent injury to the sound conducting mechanism.

A case in point is a lad, seventeen years old, who had had trouble off and on with otitis media purulenta of his left ear, and was suffering from an acute attack associated with headache lasting six weeks. Marked swelling of the temporal region lifted the auricle from its natural position. There was some mastoid tenderness. The patient was anæsthetized with ether. A complete U shaped section of the drum membrane was made, close to the cartilaginous ring, and the usual postaural incision was made down to the bone. Peeling back the periosteum exposed a discolored cortex and a granulating sinus in the bone. Curettage of the sinus freed a quantity of pus. The mastoid process was found completely disintegrated and it was wholly removed, together with all cellular structures. Special attention was given to the zygomatic cells on account of the temporal swelling. The dura mater was exposed over the tympanum, and the sinus was uncovered at the knee. It apppeared healthy. The posterior wall of the osseous meatus was removed close up to the annulus tympanicus. The upper wall of the meatus was also removed, until the outer and lower walls of the attic or floor of the nitch were taken away, and the body of the incus and the head of the malleus with its suspensory ligament and the fan shaped ligament of the incus were exposed. The ossicles and their attachments were not disturbed.

The carving about the ossicles was done with a front bent gouge. In the rest of the excavation most of the bone was soft and was removed with a curette. A rongeur was used to remove the harder bone. A flap of the membranous and cartilaginous meatus was made by a cut which extended along the floor and backward and upward at the outer margin of the canal. The wound was closed and allowed to fill with blood. The meatus was lightly packed with plain gauze, and a moist saline dressing applied over all. Bacteriological examination of the mastoid pus showed mixed infection, while the aural pus contained diplococci.

The after treatment was as follows: First day, posterior dressings which were soaked but sweet were changed. Second day, wound in good condition; gauze removed from the meatus. Third day, dressings changed; patient up, and dressed. Fifth day, canal dry and sweet; wound sweet and nearly dry. Eighth day, patient went home with a practically dry ear. Tenth day, wound practically dry. Eleventh day, both ear and wound dry. Fifteenth day, wound all epidermatized. Sixteenth day, watch was heard by the left ear at thirteen inches. There had been no pain since the operation. One hundred and seventy-third day, watch heard in the right ear at fifty inches; in the left ear at forty-six inches. The scar is linear and smooth except for a small keloid at the upper angle. The postaural surface is perfectly even. There has been no pain, tinnitus, nor stiff neck. A well developed mas-

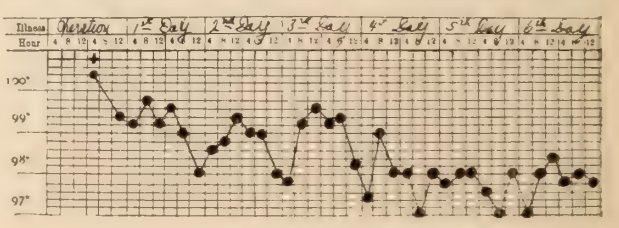


Chart showing course of temperature.

toid process, the counterpart of its fellow, can be seen and felt on the left side, where it had previously been ablated. Two hundred and fifty-third day, watch was heard in left ear at six feet; in right ear at ten feet.

The figure shows the operative field in an in-

* Read before a meeting of the American Otological Society.

dividual who had no occipital cells, a few superior petrosal cells, and large jugular cells. a, Auricle; b, skin flap; c, periosteum; f, posterior wall of osseous meatus; h, sternomastoid muscle; j, digastric muscle; k, posterior wall of membranous meatus; l, convexity of sigmoid sinus; m, mastoid antrum; n, jugular cells; o, superior petrosal cells; p, tegmen; r, anterior wall of osseous meatus; u, horizontal semicircular canal; w, incus; x, annulus tympanicus; y, membrana tympani; z, suspensory ligament of the malleus.

57 West Fifty-third Street.

THE DWARFED AND DEFORMED MASTOID A SEQUEL TO IMPERCEPTIBLE MASTOIDITIS COMPLICATING CHRONIC SUPPURATIVE OTITIS MEDIA.*

By W. E. Driver, M. D.,
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Surgeon in Charge of the Norfolk Eye, Ear, and Throat Infirmary.

In looking about for some ideas that might be in common with my hearers, I selected this subject because it seems to me a possibility of need, and I am certain that I will be more than gratified if any effort on my part will tend to level and straighten the road a bit in the progress of aural surgery, its teaching, and application. I now have in mind the student, the teacher, the general practitioner, and the aurist or specialist, and as I come to my theme, you will permit me to make known three questions I have already asked and answered to myself; they, of course, will deal only with the salient points:

First.—Is there a condition answering to the title of the paper?

Second.—If so, what is its ætiology, and how is it to be prevented?

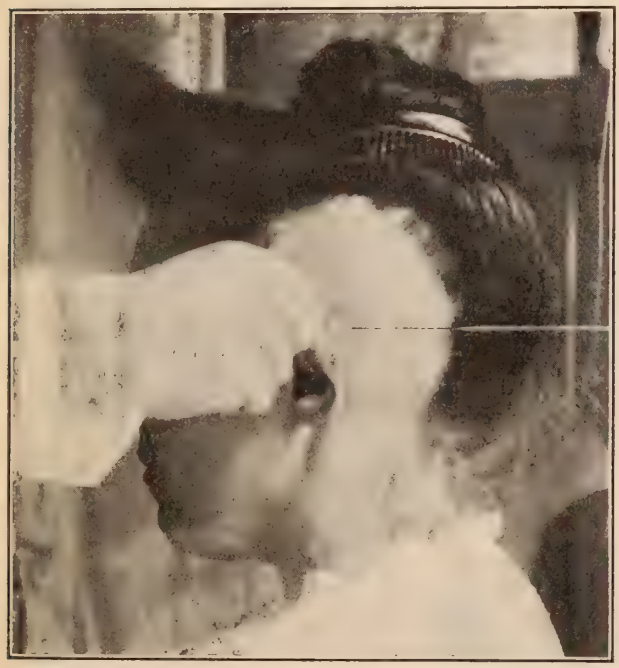

Fig. 1.—Discharging ear off and on since early childhood, sequel to scarlet fever. Marked depression over mastoid antrum. No evidence of previously existing sinus.

* Read before the Section in Otology at the eighth Tristate Medical Association of the Carolinas and Virginia, Whitestone Lithia Springs, S. C., February 28, 1906.

Fig. 2.—The opposite side of head in Fig. 1, showing no aural defect.

Third.—What is to be done with the cases that will go on to otorrhœa and its sequelæ, in spite of all effort? And lastly, with those cases that have already developed?

First.—I have found dwarfed and deformed mastoids of two varieties. By far the most common type is that in which the bone, together with the antrum, is dwarfed, and the antrum is apparently displaced upward (while in reality it has never descended to its normal position). The lateral sinus extends very much further forward, and lies just under the outer table of the mastoid portion of the temporal bone. The part of the bone formerly made up of mastoid cells is very much reduced, and is more or less converted into sclerotic tissue. There is usually a persistent discharge from the ear with exacerbations from time to time. In the second type the tympanic cavity, aditus, and antrum are more or less converted into one cavity, and apparently there is more space than there would ordinarily be between the two tables of bone; however, by actual measurements I have seen this only in one case. The disintegrating bone has been absorbed, and the cavities are enlarged at the expense of the mastoid cells, and they are more or less filled with cholesteatomatous masses. In both types the external table of bone seems to present a normal condition on first examination (see Fig. 1, in contrast to Figs. 2 and 3, which are normal. Fig. 2 is of the same person as Fig. 1, the other ear in which there is no discharge), but a more careful inspection will reveal a slightly irregular sulcus. However, the change in most patients is so slight that I do not care to emphasize its recognition in any way before the integument and periosteum are removed. In a recent series of these cases the last five consecutive ones were so characteristic that I could say with considerable assurance what I expected to find before I took off the outer table of bone.

In other words, the outer table, instead of having a decided convexity, possessed a sulcus or

FIG. 3.—Normal development of the mastoid.

irregular concavity from above downward, and a lessened convexity from side to side (see Fig. 1, which shows this condition very much exaggerated, even before the integument has been removed). The suprameatal triangle was not so well defined, but was situated more or less above the external auditory canal, instead of back of it (see Fig. 4, in contrast to Fig. 5, which is normal). In each of these cases the antrum was found dwarfed and displaced upward, in fact, was unusually small. In three of the cases the lateral sinus was exposed during the operation and was directly over, or occupied the usual location of the antrum. In other words, in these three cases, to have reached the normal antrum, it would have been necessary to cut through the lateral sinus.

Whenever a suppurative process, whether it be located in the bone or soft tissue, is of considerable duration, a certain amount of reparatory process goes hand in hand with it, and the wonderful mender, Nature, does not always produce a prototype of the original tissue. In fact, it is but seldom of its likeness. Here the most usual change we have and the one I have found most frequent is a commutation of the normal cancellous structure into sclerotic or ivory bone. As the process usually begins in childhood, it is not unreasonable to suppose that arrested development is almost *pari passu* with the onset of the disease (such as we often see in coxalgia). This arrested development is not always confined to the mastoid bone, but is sometimes extended to the bones, muscles of the face, and salivary glands of the affected side. A slow inflammatory process is promoted, the nature of which is only made manifest at some later period, usually many years afterwards.

It has fallen to my lot to have the specific care of many cases with landmarks gone and veins of a necrotic process coursing here and there through the hardened bone. It is in the early stages of the arrested development that the large bloodvessels located in this vicinity rob the mastoid portion of the temporal bone of its unique architecture, and make it the most formidable part of the human anatomy for the surgeon to explore. The surgeon finds himself very much in the same position as Hannibal's army: there is trouble both to the right and left; and, in fact, danger all around; and, as before stated, the paths of safety are completely overshadowed and occluded by new elements. To the anterior, or external auditory canal side, there is to be protected the aquæductus Falloppii containing the seventh nerve. To the posterior we have the lateral sinus. Superiorly, the parts are encroached upon by the middle cranial fossa, and internally the horizontal semicircular canal limits the depth of interference. If either of these structures is injured to any considerable extent the prognosis is rendered less favorable and the results may be far from what we would desire.

When operating we all have visions of facial paralysis, infected lateral sinus, meningeal complications, and disturbed equilibrium. Often the lateral sinus, together with the brain itself, crowd in and claim all for themselves, as it were, but the antrum, and the antrum itself, as before said, may be well displaced from its normal position.

In answer to the first of my trinity of questions, I can say dwarfed and deformed mastoids do exist, and cases are far too numerous. They are to be found in nearly every other family (see Figs. 4, 6, 7, and 8, in contrast to Figs. 5, 9, 10, and 11, which are normal).

Second.—Ætiology and Preventive Treatment.—In the wake of the exanthemata, for they play an important rôle, one finds case after case of discharging ear or ears, and still there are numerous other causes of a more topical nature, such as adenoids, diphtheria, successions of acute rhinitis, subacute rhinitis, atrophic catarrh, and others, from the early manifestations of nutritive disorders, such as gout and rheumatism. Diving

FIG. 4.—Dwarfed mastoid with suprameatal triangle above the external auditory canal. (Photographed from specimens in the Wistar Institute.)

FIG. 5.—Normal mastoid with suprameatal triangle in characteristic position.

in salt water is also responsible for its share of cases. The pus producing organism has for its normal habitat the surface of the mucous membrane of these parts, and when an opportunity presents itself by a lessened resistance or some unknown factor (and it seems a most favorable nidus for beginning trouble), a suppurative process is promoted, the early stage of which manifests itself usually in a most characteristic manner: the individual complains of earache. It is here a choice of methods in treatment shapes the destiny of the disease, whether it is to terminate in a speedy resolution or merge into a more chronic suppuration, dating the beginning of a lifelong source of care and menace to the health and life of the individual.

But before taking up the preventive treatment, which is really the treatment and preventive treatment of acute suppurative otitis media, I wish to say a word to the student I can now see preparing to take up the study of medicine. Most of the diseases and conditions considered under his domain as a family physician, at least their names, are already familiar to him. Appendicitis has had such widespread publicity that he is quite as familiar with McBurney's point as the abdominal surgeon. This enlightenment has been brought about by better educated and trained practitioners. He now in appendicitis recognizes the true condition, instead of pronouncing the death sentence of peritonitis, malignant gastritis, etc. What a great educator the family physician can be!

On the other hand, the membrana tympani, for some cause, Heaven only knows, is thought to be of such vital importance that it is almost a sacrilege to even mention its name, to say nothing of so much as getting a glimpse of it. To the shame of a large number of medical institutions of this country, he comes away with unchanged mind as to the nature and physiology of this organ—a good family doctor in other conditions, but here each and every pathological process is left to dame Nature. Specifically the drum is allowed to rupture. Picture then the contrast between the clean incision of the surgeon's knife with the edges of the wound left in juxtaposition ready to heal even too rapidly, to a round hole from a necrotic process brought about by pressure and infection.

Ask any one with common sense, which has done the most damage and which will heal with the least sequelæ? However, our lot by Nature is not always a bad thing, but here in the great majority of cases it is most disastrous. Again, it seems quite within the pale of possibility that every student who is eventually to become a general practitioner must, and I dare say will, have sooner or later adequate clinical instruction, together with dissection, giving him a good permanent mental picture of the anatomy and physiology of the drum, tympanic cavity, and contiguous parts, sufficient at least to enable him to practise and perform the minor surgery which necessarily makes up a part of his daily work. Every graduate so destined should have in his armamentarium adequate appliances to examine the drum intelligently, and to know when and where to incise it. That this procedure may be emphasized I trust you will bear with me for the repetition which will occur when my remarks become directed strictly to the general practitioner, who is, and has been, in practice for a number of years.

It is painful even to intimate, but is the teacher of aural surgery to become the cow's tail? Is he

FIG. 6.—Section showing antrum above tympanum and only one table of sclerotic bone covering the lateral sinus, the lateral sinus occupying most of the mastoid area. (Photographed from specimens in the Wistar Institute.)

to teach that suppuration is or may be promoted by clean cut incisions under modern asepsis? God forbid! For, as an established fact, every layman will soon know the true nature that tis-

FIG. 7.—Extreme type of dwarfed and sclerotic mastoid. Section showing only one table of bone. (Photographed from specimens in the Wistar Institute.)

sues are thus depleted and phlogistic phenomena dispersed.

Preventive Treatment.—In the course of other diseases, and especially those that carry with them such a large percentage of ear involvement, it behooves the medical attendant to have constantly in view the possibility of such a complication, and to make daily examinations. Here it may be of value to freshen your minds with statistics. Downey, of Glasgow, in five hundred and one cases of acute suppurative otitis media, found the proportion as follows:

Measles	131 cases,	26.1 per cent.
Mumps	3 cases,	0.6 per cent.
Scarlet fever	63 cases,	12.6 per cent.
Whooping cough	15 cases,	3.3 per cent.

Caigar, in 1 008 cases of scarlet fever, found that otitis media occurred in thirteen per cent. of them. In 51 cases of scarlet fever seen by Burkhardt thirty-three per cent. had ear trouble. Finlayson reports 4,397 cases of scarlet fever, and suppurative otitis media occurred in ten per cent. of them. Dr. May, of New York, collected 5,613 cases of deaf mutes, of whom 572 owed their condition to otitis media following scarlet fever. Bezold makes the following report of 185 cases showing the result of scarlatinal otitis. In thirty, there was entire destruction of the membrana tympani with loss of one or more bones. In fifty-nine, the perforation comprised half, or more of the membrane. In thirteen, there were smaller perforations. In forty-four, there were granulations or polypi. In fifteen, there was total loss of hearing on one side, and in six of the cases upon both sides. In seventy-seven of the cases, the hearing distance for low voices was less than twenty inches. These statistics were collected from Holt's book on *Diseases of Children.* So far as I know this is the first mention in literature of the dwarfed and deformed mastoid, a sequel to imperceptible mastoiditis complicating chronic suppurative otitis media.

As before said, besides these general febrile conditions, there are a host of other causes, some of which have already been mentioned, such as adenoids, hypertrophied tonsils, recurrent colds in the head, and diving in salt water, etc. People do not know, nor are they expected to know, when their anatomical make up is as it should be, and from the very beginning after birth the family doctor becomes the custodian. He enlightens himself as to whether there is an imperforated anus or whether there is a pin point or occluded prepuce. So, also, he should know whether there is a free or obstructed respiratory passage. If there are adenoids, or enlarged tonsils, or should they come on later, he is the person to know and to advise the parents accordingly. If one of his flock, who has been to the seashore diving in salt water, comes to him with pain in the ear, and after examining the drum he finds it red and bulging, he is to incise it, and under no circumstances to wait for it to rupture of its own accord.

I am thus tempted to say something about the very simple process of examining the drum of the ear. Having provided a candle, a head mirror, and an ear speculum, the procedure is as follows with children: The child is placed in a chair, high enough to bring the ear on a level with the

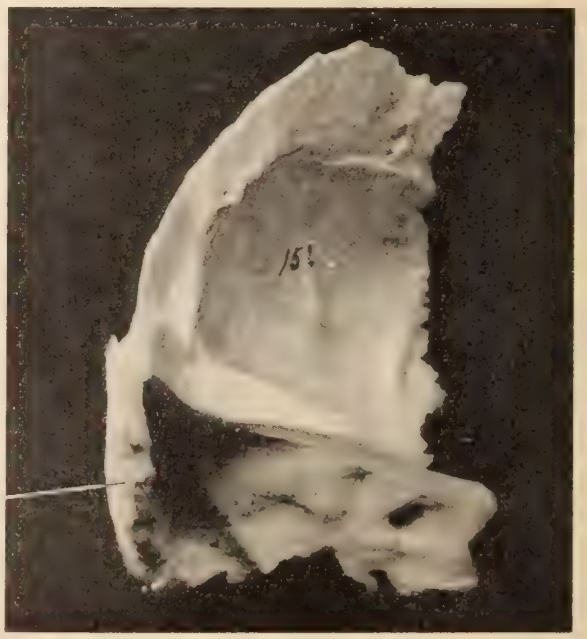

FIG. 8.—Dwarfed mastoid in which the lateral sinus extends very far forward.

surgeon's eye. An attendant holds the candle about six inches back of the head, and usually about four inches to the right. The auricle of the ear is then pulled backwards and downwards,

thus straightening the external canal. The speculum is then introduced, and the drum is plainly visible when the light is reflected down the canal. In adults the procedure is the same,

FIG. 9.—Normal temporal bone, mastoid well developed.

save the auricle is pulled backward and upward to straighten the canal. Again, I want to emphasize when a child has fever and there is no tangible cause you will not be doing an unwarrantable act to examine the ears.

I am not much of a believer in our power to abort suppurative processes in the middle ear, even in their very infancy, as the pathological process is too internal. We cannot use wet dressings of liquor Burow or other substances of similar nature and efficacy to advantage. I have had the stumbling block, but sufficient cases and observation have convinced me that too much stress is laid upon the abortive treatment, the efficacy of which is still doubtful, and notwithstanding all timely care, such as to bed with aconite internally, bundled up head, hot or cold applications, cleansing sprays, cocaine instilled into the external canal, etc., the suppuration usually progresses to be finally recognized by the discharge from the external ear. This method of treatment may relieve otalgia, but it is a question as to its benefit in a suppurative process, for it is not likely that the patient has been seen in time, even should it be of value when used early. Nearly every one of these cases when left to itself will discharge through the drum sooner or later, and this spontaneous rupture of all things should be avoided.

I beseech you to make careful examinations, and with advanced cleansing of the external canal of the ear be ready to incise the drum when it is indicated, and fear not to incise it freely. Do not make the simple puncture that was taught a few years ago, but start your incision at the very bottom of the inferior posterior quadrant, making a curvalinear incision as high up as you can until the knife impinges upon bone, and then slightly down the canal, and you will strike a death blow to the progress of the disease. Yea, you had better incise the drum a week too soon than a day too late, for when sufficient pressure has been engendered in the tympanic cavity to force a spontaneous rupture, the energy has been in all directions, and it is not an accident for pus or infected material to be forced through the aditus into the mastoid antrum, in this way making sure of beginning trouble, even should the aditus and antrum escape the disease of the tympanic cavity extending by continuity. Thus in this way is dated the very beginning of a mastoditis, which may or may not run an imperceptible course. If it be of the imperceptible type, the only recognizable evidence is the persistent discharge from the ear. Other pathognomonic symptoms do not exist.

What does freely opening the drum do? First, it does no harm even if the procedure is exploratory, and no pus is found. Under aseptic conditions the wound heals in twenty-four hours or less. If there is pus, serosanguineous fluid or putrid gas, they are allowed to escape. Absorption from the tympanic cavity is put an end to, and from the general depletion of the tissues the Eustachian tube soon rights itself and becomes

FIG. 10.—Type of pneumatic mastoid, normally developed bone.

pervious, making the drainage still better and almost complete.

Now is the time for proper syringing with suitable antiseptics, such as a mild solution of bi-

chloride of mercury, say, one to eight or ten thousand, at short intervals, probably not oftener than every two hours, and during the interim a piece of sterilized gauze is tucked well down to the

FIG. 11.—Type of pneumatic mastoid, normally developed bone.

drum to act as a wick for drainage. With this method my experience is that a speedy resolution is the rule. The ear gets well almost by crisis and stays well.

Do remember that the old idea as to the function of the drum, the part it plays in hearing, that it must not in any way be interfered with for fear of deafness, is as much relegated to the past as the past itself, and that there is not the slightest harm in making a clean incision in the drum adequate for all drainage. Depletion, whether by natural or artificial leach, is by far the most potent method, if there be any reliable one of aborting the condition. Spontaneous rupture bringing relief to the patient, comfort to the family and family doctor, is not as ideal as it seems, when we come to analyze and know its shortcomings, to see how incomplete Nature is in depriving the disease of its foothold. In the first place, the drum ruptures at a point of least resistance; this is nearly always high up and very often in Schrapnell's membrane. That part of the drum membrane below the opening is left to act as a dam retaining pus in the tympanic cavity the discharge through the external canal being merely the overflow.

The hole is rendered in the drum by a certain portion of the drum membrane becoming necrotic, finally sloughing through. The drum at the same time is infected. This, however, is not so serious a condition as the shape of the opening, a round hole that does not allow the edges to become in juxtaposition for ideal healing. We therefore have, when union takes place, much scar tissue, with puckering and an irregularly shaped drum, even if the case terminates most favorably. The usual course, however, is for most of the drum to slough away, leaving a permanent opening for air, dust, and organisms to enter the tympanic cavity. The retained pus, after a sufficient time, causes the mucus membrane lining the tympanic cavity, and especially the floor, to become deeply diseased, so much so that occasionally infection occurs through the dome of the jugular fossa infecting the vein direct (see Fig. 12).

Some contend that infection through the dome is most frequent in acute cases, that is, the infecting organism, lymph spaces, etc., have much to do with it. Of this point I am not quite certain, since the bones I have seen with perforations through the dome have all been dwarfed and deformed, showing that there had existed for a long time a pathological process (see Fig. 12). Clinically, the only cases I have seen and recognized were in children with acute suppurative otitis media, following one of the exanthemata. However, this would not have much to do with the subject in hand were it not for the fact that infection extends upwards through the aditus into the antrum, setting up in the majority of cases an inflammatory process, the fountain head for pus, the very bourne of a continued discharge, that persists off and on through life.

Of course, acute mastoiditis from a similar cause is much more readily recognized, and usually has the proper treatment, but the imperceptible mastoiditis is allowed to run an indefinite course, until some more vital part has become involved, thrusting our patient into the perils of a speedy termination.

FIG. 12.—Dwarfed mastoid. Dome of jugular fossa perforated. (Drawing from a specimen in Dr. B. Alexander Randall's collection.)

Third.—What percentage of cases will go on to the chronic condition, under the best treatment, I am not prepared to say. However, I believe the percentage will be comparatively small, and this leaves for consideration: What shall be done with them and the cases that have already developed? I am thoroughly convinced that what is known as the radical operation, when skillfully done and under later day methods, is one of the greatest boons to modern surgery. The patient is not only relieved of the daily annoyance, but also of the immense danger of extension to deeper parts, and often fatal complications.

Macewen, in his admirable book on *Pathogenic Diseases of the Brain and Spinal Cord,* gives the proportion of brain involvement from otitic origin as ninety-five per cent. However, we must not forget the position of the aural surgeon. His advice is here to a patient otherwise in good health and usually able to attend to business. The patient has only a persistent discharge from the ear with occasional pain, and at times cachexia that dates from infancy or childhood. This individual is to be told of the dangers of anæsthesia, of the vital parts that lie about the field to be explored, and of the nature of the disease, and is allowed to choose for himself. With lessened danger from anæsthesia by improved methods of experts, with perfected technique, etc., I strongly commend the operation. Panse's modification of the old Stacky-Schwartz operation is the one I usually do.

I am much indebted to Dr. H. O. Reik, of the Johns Hopkins University; Dr. B. Alexander Randall, of the University of Pennsylvania; and Dr. Greenman, of the Wistar Institute, for their kindness in assisting me in procuring a sufficient number of temporal bones to substantiate without question the existence of dwarfed and deformed mastoids.

275 Freemason Street.

THE IMPROVED UNITED STATES INSPECTION OF ANIMALS, MEAT, AND MEAT FOOD PRODUCTS.

By D. Arthur Hughes, Ph. D., D. V. M.,
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Meat inspection is the talk of the day. Never before in the history of federal supervision of American meat food supplies has so much prominence been given to the engaging question: Are our meats and meat products clean and harmless for human consumption? In an article written for this *Journal* (LXXXII, No. 24, December 9, 1905) entitled The Value of Meat Inspection to the Public Health, I gave a brief account of the American system of meat inspection, as it was then conducted, pointing out the dangers of animal disease to the public health, the methods of meeting the danger employed by the government, and what protection the federal inspection assured to the people. As that article was widely read and favorably commented upon by medical men, I wish to say, before launching into the present subject, that I did not therein pronounce the American system of inspection perfect, nor did I intentionally gloss any of its defects. I gave a simple account of the system as it was. The inspection regulations, based on the law of 1891, which were effective until August 1, 1906, made use of every part of the limited power allowed by the statute. The regulations were a credit to the men of the Bureau of Animal Industry, United States Department of Agriculture, who made them and administered them. During the violence of the movement which brought into existence the new law, when everybody was investigation mad, the Department of Agriculture escaped practically scott free from serious, vitally hurtful criticism. The reason is obvious: The department had done sufficiently well all that the meat inspection law of 1891 permitted it to do.

Yet it may be well, in the present article, to consider, first, the necessary imperfections in the system of federal inspection as conducted under the law of 1891; and, second, the change in the system brought about by the laws, approved June 30, 1906.

I. The Necessary Imperfections in the System of Inspection as Conducted under the Law of 1891.

What Conditions were Found in the Abattoirs of the Packing Companies.—Reasons for the Conditions Found.—Defects in the Law.—The Remedy. In an editorial printed in this *Journal,* (LXXXIII No. 3, January 20, 1906), commenting on accusations made by the *Lancet* on revolting conditions said to exist in the meat industry of the United States, we read, "Its (*Lancet's*) strictures relate mainly to the uncleanliness which is said to accompany the work—uncleanliness of a sort to favor the contamination of food products with pathogenic germs. The accusation is a grave one, and, whether or not it is more sweeping than the facts justify, it should lead us to put forth all possible efforts to do away with the objectionable feature." Further on, "*It is to be hoped that the regulations will be made so stringent as may be found necessary to insure the wholesomeness of all the products marketed.*"

This was a long while before there was any Federal inquiry into the conditions said to exist in the Chicago packing industry. What faulty conditions, we may now ask, were found when the investigation took place? At this late date there is no need to deny that some of the criticisms of the American packing houses had foundation in fact. There could never have been any chance for the movement to have effectiveness in legislation if there were no truth in the Neill-Reynolds report. There would be no need to rear such a system of regulations as will go into effect October 1st to do away with grossly unsanitary conditions, or prevent their recurrence, if there never had existed the conditions they are meant to forbid. Just as every officer inspecting animals, meats, or meat food products for the government knows, the movement for a better inspection produced the most sickening exaggeration, so also he knows in his own mind that there was some show of reason for criticism. What were these unsanitary conditions that needed to be reformed?

The manner that the facts were brought out does not matter. The question is was there any truth in the report made public. The statements in the *Lancet* were much the same as those made in the Neill-Reynolds report. The facts are, there were

certain unsanitary conditions in very many of the abattoirs throughout the country, doing an interstate and foreign trade, which needed to be righted, in the direction of cleanliness, light, and ventilation; there were abuses in the canning industry which should be done away with, as well as faults in preparatory processes, or parts of processes, which ought to be bettered; there were, as is to be expected among ignorant foreign employees, and particularly in the more or less necessarily uncleanly conditions of a slaughter house, unsanitary appearance of the workers, and numerous instances of filthy acts which would bear supervision and control.

We may give as reasons for these things that in part they were due to the immense growth of the trade. The rush of work and inability to keep pace with the demand upon the departments of the houses left less time for that care for the condition of the houses, which would be given otherwise. Many of the abattoirs were built piecemeal, usually in a hurry, to keep pace with the trade. This, however, does not explain away the evils that existed; it only accounts for them.

That such conditions existed at all was due to omissions in the fundamental law which founded the Inspection Division of the Bureau of Animal Industry, United States Department of Agriculture, in 1891. In the first place, under the law, the federal inspection had to stop with examination of carcasses on the killing beds. There was no prerogative calling for inspection during the processes of the preparation of meat food products granted. In the second place, no power was given to require sanitary conditions in the abattoirs nor to require personal cleanliness in the employees. In the third place, as there was no federal pure food law, there was no power given the federal inspector to prevent misbranding nor to prevent adulteration, so he had no right to say what should go into cans, nor to prevent deceit in labelling tins or other receptacles. In the fourth place, the law of 1891 was defective in that the inspection service was dependent for existence on the *annual* appropriation of Congress. There was no *permanent* fund to defray the expenses. The fund was always too small to meet the rapid growth of the trade. Of recent years the appropriation had been gradually declining rather than increasing. Just at the time when the Bureau of Animal Industry was getting calls for inspectors in numerous small houses wishing to do an export trade, none could be given them because of deficiency of the appropriation, which, last year, was just about $800,000 for the fiscal year. At that time there came a crisis in the affairs of the Inspection Division of the bureau of the government which conducted the work. Instead of advancing, by placing inspectors in new centres, the force had to be cut down and inspectors withdrawn from older official stations. In the fifth place, the chief protection given under the old law was to foreign people rather than to our own people. There was no power granted to compel animals and meats to be inspected for all the interstate trade, whereas animals and meats for foreign trade had to be inspected. As a matter of fact, because of deficiency of appropriation, even the privilege of inspection was not granted for much meat going into interstate traffic.

If there were defects in the law of 1891, and the need of a remedy, what form should it take? The form that the remedy should take, whatever it was to be, should go deep into the root or things; should take cognizance of the limitations of the prerogatives of that part of the executive branch of the Department of Agriculture, the Bureau of Animal Industry, upon which the new work, if it came, should fall. From the first everybody saw that the only safeguard against possible evils must be in strong federal law recognizing all the past rights of the Meat Inspection Division of the Bureau of Animal Industry, and extending its prerogatives to cover all the defects in the law of 1891. Nor would an inspection law alone suffice, a concomitant of it must be a pure food law to prevent evils in the canning industry.

II. The Changes in the System Brought about by the Federal Laws Approved June 30, 1906.

The new Meat Inspection Law and the Pure Food Law.—The Regulations Based on the Law, what they are.—What is now to be Expected.—Overhauling of Abattoirs.—Greater Protection of Health. In speaking of the new meat inspection law of June 30, 1906, we may inquire what are the main points in which it differs from the old law of 1891. Conservatism has always been an element in executive federal administration. The belief in 1891 was that the inspection at time of slaughter would very largely protect the public health. This was true enough, as disease is easiest detected at that time. The time was not ripe for so complete an inspection as is at present desired. To make a start at the inspection of the bulk of the nation's live stock and carcasses was no doubt the plan of the department. The perfection of a plan to protect the public health against maladies set up by the consumption of improper meats must come gradually, when the public had become educated to a knowledge of the dangers therefrom. The old meat inspection law of 1891 concerned itself chiefly with examination of animals before slaughter, and of carcasses after death of the animals on the killing beds. As far as definite inspection for disease went, the work was done then, and then only.

The prerogatives of the inspectors, under the meat inspection law of June 30, 1906, are greatly extended. First, the inspection is required of animals and meats for export; but, in addition, all animals and meats, except those prepared and put on the market by retail dealers or butchers for their own trade, not only may, but must be inspected if they are to pass into the interstate trade. This is made not a privilege but an obligation. All houses wheresoever doing an interstate trade must have inspection. Second, the kinds of animals and their meats to be inspected are cattle, sheep, swine and goats. Though goats at the great centres have been inspected since 1891, they were not expressly mentioned in the old law. Third, the inspection covers all animals, carcasses, parts of carcasses, meats, and meat food products. This means that there must be an antemortem inspection, a postmortem inspection on the killing beds, a reinspection at the docks when carcasses or their parts are to be placed in refrigerator cars or when meats are to pass into rooms for preparation for food, an inspection also

of all stages of the preparation of meats, or meat food products. Fourth, the inspection concerns itself with sanitation in the abattoirs and in the pens and adjoining buildings used for animals, or the preparation of meat foods. This means that there is no question touching the sanitary condition of buildings, the contents of buildings used in preparation of meat foods, the personal appearance of laborers, which is not under supervision of federal officers. Fifth, right is given the inspectors to dispose of, by tanking, all condemned meats. This lifts any doubt as to the authority of the Department of Agriculture to dispose of condemned animals, their carcasses or parts, meats, or meat food products. Sixth, the system of labelling, stamping, and branding is greatly extended so that government marks, or words required by the government, are placed on every package of meat or meat food product coming from packing houses. All this marking is to be done directly under federal supervision.

The federal pure food law of June 30, 1906, supplements the new meat inspection law and adds much power to the Department of Agriculture not granted by the Beveridge bill. Its provision on misbranding strengthens the hands of the inspectors in their authority over trade labels to be used by the companies on packages of meats or meat food products of any kind. The declarations in that law against false or deceitful labels, which are defined, absolutely forbid misrepresentation of the contents of cans or packages. Besides forbidding dyes, chemicals, or preservatives in meat foods deleterious to health the law also reads, "food products are declared adulterated if they consist in whole or in part of a filthy, decomposed, or putrid animal or vegetable substance or any portion of an animal unfit for food, whether manufactured or not, or if it is the product of a diseased animal or one that died otherwise than by slaughter," Thus we see that the pure food law aids the meat inspection law in that it forbids the contents of a can or package to be other than represented to be, while at the same time it shuts out the possibility of the can containing drugs hurtful to human health, or that the contents should be in whole or in part composed of forbidden animal substances.

We may now see how the prerogatives granted in these laws are taken advantage of by the Department of Agriculture. In other words we may exhibit how the rules and regulations recently set forth, August 1, 1906, in Order No. 137, cover every reasonable demand made in the press during the course of the movement for better meat inspection. Besides, we may add every weakness in the system of inspection discoverable by experience in the operation of the inspection between 1891 and 1906 has been made good.

First, the regulations, following the law, provide for the extension of the inspection to every house doing an interstate business. Last autumn the newspapers drew attention to the need of federal inspection in numerous small houses throughout the country, particularly west of the Mississippi. These, with all others of the same kind, are given inspection under the regulations. The regulations provide for as strict, indeed stricter, inspection for all meat food products to go into the interstate trade, as formerly was given for meats for the export trade. Second, the regulations on goats. The business of raising goats is increasing rapidly in this country. It appears in the law that it is illegal to sell these animals, their carcasses or parts, except under their proper name. In recent years there has been a large business in goat meat from the great packing centres, and the carcasses and parts have often been sold as mutton. Goats under the new regulations will be given the same inspection as sheep, but under the pure food law their meat cannot be misbranded as mutton. Third, there are some modifications in the ante mortem inspection. The evil of conniving to make money on animals with a *U. S. Reject* tag in their ear, placed there at time of antemortem inspection, is done away with. No animals are now *rejected* in antemortem inspection. A *U. S. Suspect* tag is placed in the ear of a suspected animal and it is sold to the companies as suspected. If, on the killing beds, the animal is found to be without blemish the full market price must be paid for it. Fourth, the postmortem inspection is made much more strict. Animals may be condemned for diseases or noxious conditions not mentioned previously in the regulations. For instance, hogs which have been carelessly allowed to get into a scalding vat alive must be condemned. Not only dead hogs must be condemned, but those in a dying condition. This prevents the sticking of prostrated animals, and claiming, as they were alive, no lesions showing, they are fit for human food. Fifth, the right to reinspect carcasses or parts, passed at the killing beds, at any time, and to condemn if found necessary, is taken full advantage of. Previously when a carcass was passed that was an end of the inspection. The packer could do what he pleased with it. By the new regulation the inspectors may take a carcass, side or quarter in the refrigerator room, or the loading dock, or after the meats are cut up to go to the sausage or canning rooms. Furthermore they can reinspect at any time or place deemed fit by the department.

If we were to continue our observations on the regulations we would say, sixth, they make ample provision for supervision of all departments where meat is prepared for food; canning, pickling, curing, smoking, cooking, sausage making, lard preparation, and that of oleomargarine. That there may be no doubt how far this supervision goes we read "if at any time during the handling of any meat or meat food product, or at any time after the packing or canning of any such product, any portion or package shall be found to be unwholesome, unhealthful, or otherwise unfit for human food, such portions or packages shall be condemned and disposed of in the manner described in Regulation 18," that is it shall be tagged as condemned, held for tankage, and tanked under supervision of a government employé.

Seventh, nothing could be more complete than the regulations on sanitation. They give explicit orders on the cleanly appearance of the buildings in general and rooms in particular; of the trucks, trays, and other receptacles for meats; of tools and machinery; of the aprons, smocks, and other clothing of employés of the companies; of toilet rooms, urinals and dressing rooms. They state what the lighting and ventilation of rooms where food is pre-

pared shall be like, and give order that no toilet rooms will be allowed to ventilate into them. They forbid persons inflicted with infectious diseases to be employed in the abattoirs. They read, that no part of a building may be used for purposes incompatible with proper sanitation; that butchers must cleanse and disinfect their hands and arms after killing diseased animals, together with the tools used in killing, and that the killing of animals suspected of diseases must be done before or after the regular killing; that plans for new plants, or old ones to be renovated, must be submitted beforehand to the Secretary of Agriculture.

Eighth, careful rules are laid down on condemnation, tanks, and tanking of the condemned meat, about which there can be no misunderstanding. The following is the method of disposition of condemned meats. They are placed in a government *condemned room* under official lock. At definite times they are followed to the tanks by an inspector. The tanks are sealed at the bottom. Condemned meats or meat products are placed therein under the inspector's eye, then the upper part of the tank is also put under government seal. The steam is then turned on and kept up for twelve hours, finally the seals are broken by the inspector. Ninth, an elaborate system of labelling, stamping, and branding has been devised. Under the old law the government stamp for passed meats appeared only on barrels, boxes, firkins, and the like. Now the government carries its supervision of meats and meat food products so far as to keep its eye on every can or package coming out of an abattoir. The stencils to be used by the packers, the brands, and other devices for designation of meats are to be first approved by the department. When, in addition to this, the pure food law empowers the department with the right to pass on trade labels before they can be placed on packages of any sort by the packers, that even these cannot be placed upon packages without the supervision of a department employé, and that the constituents of a food product "shall not contain any substance which lessens its wholesomeness, nor any drug, chemical or dye (unless specifically provided for by federal statute) or preservative other than common salt, sugar, wood smoke, vinegar, pure spices, and, pending further inquiry, saltpetre," it looks as if the regulations are nearly perfect. Time alone will bring out any deficiencies in the law.

Certainly during the oncoming and after the passage of such laws as those of June 30, 1906, reforms were likely to come in the appearance of the packing houses. The right is granted the Secretary of Agriculture to require a particular grade of sanitary perfection before full inspection under the new law could be allowed. All abattoirs desiring this inspection, and all are really required to have it, must make application *de novo* for the inspection, and agree to live up to the regulations. The Secretary reserved the right to pass upon old abattoirs before the inspection would be granted, and required that plans for alterations should be submitted to him, and that plans for new abattoirs should take the same course. The regulations definitely specify that they are to go into full force on October 1, 1906. Time was therefore given the companies to come up in a reasonable manner to the demands of the regulations, before the right and privilege of complete inspection would be allowed. The result has been an overhauling of many abattoirs. Many changes went on during the storm and stress of the movement for a better inspection, under the pressure, perhaps, of public revolt. Much is at present being done, and more will be done under the full enforcement of the regulations.

We may well rejoice in the institution of the inspection I have attempted carefully to describe. Yet, in simple justice it should be said that the American consumers are marked off by the new legislation into two classes—the unprotected and the protected. For there is a sanitary question involved in the limitation of the federal power to goods which are to pass into the interstate trade.

The unprotected are the people of the countryside, the rural villagers, or those in small towns or even cities where meats and meat food supplies are constantly consumed without federal or any other inspection. The nefarious traffic, within State confines, can still go on in diseased, spoiled, or uncleanly meat. Where there is no strict municipal inspection there can come in from the environs into the city untold tons of questionable meats for consumption in the cities and towns. The new federal statute makes the provision that the heavy federal hand may fall on any such meats which may pass into minor interstate trade. Even a novice can see though that there is still grave danger in places where the federal statute cannot reach the evil. In such places municipal or State law is imperative.

Thanks to the new statute the number of the protected is vastly increased. Ever and ever there is a tendency to centralization of the beef industry in places and under conditions where the full force of the federal law holds good. The bulk of the supply comes from the large companies. The hundreds of small houses doing an interstate business will in time have federal inspection. The former always have had inspection; the latter now will have it. We understand that the federal government proposes to extend its official supervision, under the power granted it in the new law, to the lesser interstate traffic in animal foods along the rivers which make State lines where a good deal of iniquity probably exists. The Bureau of Animal Industry may be depended upon to exercise a strong hand here. In the several ways mentioned the federal inspection will cover a very large share of the meat and meat food supply. Immediately we may expect great results. The protection of the majority of American consumers is now far greater by reason of the superiority of the new inspection and the extent to which it is to be carried.

ARMY BUILDING.

"LA MEDECINE" AND "LE MEDECIN" IN MOLIERE.*

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To his family folk and to his town folk by birth and baptism he *was* Jean Baptiste Poquelin; to humanity and to humanity's planet he *is* Molière. As

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with Voltaire, the *nom de plume* has extinguished the patronymic; the immortal has enveloped and hidden the mortal. The world's greatest writer of comic drama; the keenest, the clearest sighted limner of man's faults and follies and foibles—that is the verdict of literary criticism. Greater than Aristophanes; greater than Plautus or Terence; in his own domain greater than Shakespeare. Unlike Shakespeare, who paid equal court to Melpomene and Thalia, Molière wooed alone the muse of comedy. Like Shakespeare he was both playwright and player.

In 1800, says Auger, the famous English actor Kemble, while visiting Paris was given a splendid dinner by the comedians of the Théatre francais. During a spirited discussion of the relative merits of the dramatists of either side of the Channel, in which the Briton up to a certain point was at least yielding no ground, Michot abruptly exclaimed, "Very well, my dear sir, very well; but Molière? what do you say of him?" "Oh, as for Molière," coolly replied the Englishman, "that is another matter. Molière is not a Frenchman." This bold proposition rather nonplussed Kemble's entertainers. "How!" retorted Michot, "what do you mean to say? Molière is an Englishman, perhaps." After another *saille* of French wit, Kemble thus explained his thought—"I figure to myself that God, in his goodness, wishing to give to the human species the pleasure of the comedy, one of the most delectable that it is possible to enjoy, created Molière, and let him fall upon the earth, saying to him, 'Go forth, man, to paint, to amuse, and, if thou canst, to correct thy similars.' It was, indeed, necessary that he should descend upon some point of the globe, this side of the Strait, or perchance on the other side, or perchance elsewhere. We have not been favored; it is on your side that he has fallen. But what does that import? I maintain that he is ours as well as yours. Is it you only that he has depicted? Is it you alone that he amuses? No; he has painted all men, all take delight in his works, and all are proud of his genius. The little divisions of kingdoms and ages fade before him. Such or such country, such or such epoch, have not the right to appropriate him. He belongs to the universe; he belongs to eternity." This, then, is our artist, from whose vast and varied *salon* I beg leave to bring to you some portraitures of medicine and of doctors.

Reasonably it might be surmised that the all discerning, minutely scrutinizing mind which found so much in medicine to ridicule would assume toward it personally an attitude of practical distrust. To a certain degree such was the case. Though not favored with robust health, Molière, as it seems, was decidedly loath to resort to medical expedients. And, yet, while pronouncedly skeptical concerning their systems and their practices, he nevertheless lived on good terms with the doctors themselves. Mauvilian was the name of his physician. Voltaire narrates that at dinner one day the grand monarch speaking of Mauvilain said to Molière, "You have a doctor; what does he do to you?" "Sire," replied the humorist, "we chat together; he orders remedies for me; I do not take them, and I get well." In that he differed from Montaigne, who belonged to the century preceding, and who, as Geoffroi piquantly states the fact, "made sport of medicine, and made use of doctors."

Molière's good will toward his physician is strikingly evinced by a petition addressed to Louis asking for a clerical office for Mauvilian's son. The petition is peculiarly Molièresque, however. It begins thus—" Sire, a very upright doctor, of whom I have the honor to be the patient, promises me, and is willing to obligate himself before a notary, to make me live yet thirty years, if I can obtain for him a favor from your Majesty. I have said to him, regarding his promise, that I did not demand so much of him, and that I should be satisfied with him provided he would obligate himself not to kill me."

To intelligently judge, or to adequately appreciate, the truthfulness, the faithfulness of Molière's pictures of medicine and of doctors we must cast a glance at the status of medical science at the epoch involved. The dates 1620 and 1673 mark the limits of Molière's life. The era of medicine immediately prior to and merging into that span, has great significance and importance. Lord Bacon had discovered, or restored, as you please, the true instrument or method of scientific progress. Kepler and Galilei had extended contemplation and speculation from a world to a universe. Anatomy had won the right to be called a science. Harvey had fought his battle and received the laurel. But the foundations of medicine as a science were only being laid. Beyond anatomy, the various medical systems, encrusted by the rust of ages, tinctured throughout with the dye of scholasticism, were well nigh all that stood for the healing art. These systems rigidly and consistently applied gave rise to practices preposterous and grotesque.

The great names of the period thereto pertaining do not save the medicine of the period from this reproach. There was a Van Helmont; a good Brahman would call him a refined reincarnation of Paracelsus. There was a Le Böe; it has been charged to him that his system cost as many lives as the whole thirty years' war. There was a Sydenham; but he measured the action of mercury by the amount of saliva discharged. There was a Sir Thomas Browne; he wrote *Inquiries into Vulgar and Common Errors,* but, notwithstanding, testified on oath to the actuality of witchcraft. Indeed so fantastic and absurd were the medical systems then in vogue, and so futile or pernicious the consequent practice, that even a half century later Boerhaave, colossal intellect that he possessed, epitomized his convictions as to medicine's rational and reliable resources in his classical injunction to "keep the feet warm, the head cool, and the bowels open."

With chaos therein thus dominant, with hypothesis and sophistry and superstition therein thus rampant, is it strange that medicine became a mark for the shafts of the forceful and luminous lay minds of the times? The literary genius of France has always been characterized by brilliancy of wit and incisiveness of criticism. Here was a field that this genius might not pass by. Montaigne had made incursions into it as we have indicated. Pascal, the cogent, the intense Pascal, a contemporary of Molière, dealt this stunning stroke; I find it in the *Pensées*—"If physicians had not cossacks and mules, and if doctors of medicine were not to have square caps, and robes too ample by four times, they would never have duped the world, which was not able to resist this showing so authentic. If physicians had the true art to cure, they would have

no use for square caps; the majesty of these sciences would be venerable enough of itself. But having only imaginary sciences, it is necessary that they take these vain instruments, which strike the imagination, the point to be gained; and through that, in effect, they attract toward themselves respect."

Le Sage coming some decades later, introduced, inevitably, as a simple matter of course, sketches of medicine in the *Gil Blas* universal collection; and the immortal Dr. Sangrado, with his astounding bleedings and prodigious potions of warm water, walks upon the stage of world characters. Then farther down, a century beyond Molière, came Voltaire, and Rousseau, and Diderot. You will recall readily Voltaire's famous fling representing physicians administering to a body concerning which they knew little, remedies, concerning whose action they knew less, for the cure of diseases concerning which they knew nothing at all.

In Rousseau's *Emile* I find these passages—"The wise Locke, who had passed part of his life in the study of medicine, strongly recommends never to drug children, neither through precaution, nor for slight ailments. I shall go further; and I declare that, never calling a doctor for myself, I shall never call one for my Emile unless his life should be in evident danger; in that case he could not do worse to him than to kill him. I well know that the doctor would not fail to draw advantage from this delay. If the child died, he would have been called too late; if it escaped, it would be he who saved him. . . . The sole useful part of medicine is hygiene; yet hygiene is less a science than a virtue."

In his *Conversations of a Father With His Children* the tender hearted, great souled Diderot levels a good natured taunt at the old vogue medicine by a reference to the inscription which the Romans, after the death of Adrian VI., placed over the door of his doctor—"To the liberator of the country;" and by a reference, also, to the appeal of a wag to the cart drivers, when, after Mazarin's death, that minister's physician was crossing the street—"Comrades, let us allow the doctor to pass; it is he who has done us the favor to kill the cardinal."

The errors, and impostures, and crudities, and abuses of the medicine of his day, which then and afterward provoked attack so commonly, were sure to challenge some home thrusts from the very prince of literary caricature—"the noblest Roman of them all." La Harpe says most pertinently; "The pedantry which, with the doctors of the last century, was the token of the science, lent itself easily to ridicule; and we know how much Molière turned it to account." Beginning his sallies in *The Love Doctor,* Molière, in fact, continued his war against the faculty until the end of his life; his last work, *The Hypochondriac,* being directed against the followers of physic.

Taking up the pieces of our author bearing special relevancy to our theme, the writer would bespeak your indulgence for his translations of the texts of Molière; parenthetically, he would express the wish that the same grace be extended to his translations of the several other French authors previously cited.

Matters medical constitute an essential part of four of the Molièrian dramas—These are *The Love Doctor, The Doctor in Spite of Himself, Mr. de Pourceaugnac,* and *The Hypochondriac.* Permit me to quote from them in this order, which is the order of their creation. To compass them within the space of minutes we must move rapidly. Much must be slighted, however, condense as we may.

In *The Love Doctor* a daughter is supposed to be very sick; and the father says. "Quick!—let somebody go for me to bring doctors!—a number of them." Four doctors are forthwith summoned. A housemaid says, "What do you wish to do, sir, with four doctors? Is not one enough to kill a person?". The father asks if doctors make people die. The maid replies, "Without doubt; and I have known a man who proved by good reasons that one should not say, such a person is dead of a fever and of a fluxion upon the chest; but, he is dead of four doctors and two apothecaries." She says further, "My faith, sir, our cat has escaped lately of a leap that he made from the top of the house into the street; and he was three days without eating, and without being able to move either foot or paw; but he is very fortunate that there are no cat doctors, for his case would have been done for, and they would not have lacked to purge him and to bleed him." The doctors are in sight, and she says, "Take care! You are going to be edified. They will say to you in Latin that your daughter is sick."

After an examination of the case, one of the doctors says to the father, "We have looked the patient over sufficiently, and without doubt there are many impurities in her." "My daughter impure?" responds the father. Says the doctor, "I mean to say that there are many impurities in her body, a quantity of corrupt humors."

One of the doctors inquires about one of the maid's acquaintances who had been sick. She tells him that he is dead, dead and buried. "You deceive yourself," replies the doctor; "that is impossible. Hippocrates says that these sorts of maladies terminate only on the fourteenth and twenty-first days, and it is only six days since he has fallen sick."

During a conversation between two of the doctors they mutually insist that it is necessary to observe the formalities in practice whatever may occur. Continues one of them, "As for me, I am devilishly severe in these matters, unless it may be among friends; and we were assembled one day, three of us with a doctor from the outside, for a consultation where I directed the whole affair; and was not willing to allow that anybody should venture an opinion if not brought forth in proper order. The people of the house were doing all they could, and the sickness was pressing; but I would not yield in the least! and the patient died bravely during this discussion." He adds, "A dead man is only a dead man, and is not of any consequence; but a formality neglected bears a notable prejudice to the whole body of doctors."

These two doctors finally lock horns on the treatment of the case, the one advising an emetic, the other a bleeding. Hot words are passed, and they finally depart in high dudgeon, the one saying to the father, "If you do not have your daughter bled at once, she is a dead person;" and the other, "If you allow her to be bled, she will not be alive in a quarter of an hour." Then a consultation follows between a drawling doctor and a snappy one. The father remarks that "The one goes like a tortoise

and the other runs post haste." The consultation over, the drawler informs the father that now if his daughter dies, he "will have the consolation that she shall be dead in due form;" the fussy one remarking, "It is better to die according to the rules than to recover against the rules." The maid takes leave of the doctors by telling them that they should look to a great wrong which has just been done to medicine. To their query as to who had done this wrong, she retorts, "An insolent fellow, who has had the effrontery to infringe upon your trade, and who, without your ordinance, has killed a man by a great sword cut through the body."

In *The Doctor in Spite of Himself* the practitioner is a vulgar ignoramus. A rustic introduces him by saying, "There is a doctor who pleases me; I think that he will succeed, for he is a buffoon." A girl has suddenly lost the power of speech. The fool of a quack says to her father, "I am delighted, Sir, that your daughter needs me; and I should desire with all my heart that you might need me, also,—you and all your family; that I might show the eagerness I have to serve you."

A piece of raillery causes the patient to laugh. The father says, "You have caused her to laugh, Sir." Rejoins the clown, "So much the better; when the doctor makes the patient laugh it is the best sign in the world." Taking the girl's wrist, he comments, "There is a pulse which marks that your daughter is mute." This brilliant diagnosis astonishes a domestic who exclaims, "See how he has divined her ailment!" He replies, "We great physicians, we comprehend things at once. An ignorant doctor would have been embarrassed, and would likely have said to you—It is this, it is that; but me, I reach the end the first stroke, and I apprise you that your daughter is mute." The father asks the cause of the trouble. The answer is, "There is nothing easier; it comes from the fact that she has lost the power to pronounce words." The father wishes to know, why she cannot pronounce words. The doctor says, "All our best authors will tell you that it is a hindrance of the action of the tongue." The father wishes his opinion upon this fault of the tongue. He replies, "Upon that subject Aristotle says . . . . some very beautiful things." In a later attempt to elucidate the case he wrings in a lot of pedantic jargon, finally, getting himself badly tangled in his anatomy. The father is impressed with his erudition; but is staggered by his reversal of the location respectively of the liver and the heart, and reminds him that the liver is on the right side and the heart on the left. He rejoins, "Yes; that was formerly so; but we have changed all that, and we practice medicine now by a wholly new method." The father says he did not know that, and demands pardon for his lack of information. Replies the doctor, "There is no harm done; and you are not obliged to be as able as we are."

To a buxom robust nurse who boasts of her health the doctor says, "So much the worse, nurse; so much the worse. This great health is to be feared; and it would not be bad to perform upon you some little, mild bleeding, and to give you some little, mollifying clyster." The *pater familias* expresses doubt as to the benefit of being bled when one is not sick. The doctor answers, "It doesn't make any difference, the mode is salutary; and as one drinks for the thirst to come, so it is proper to have one's self bled for sickness to come." The nurse retorts that "she will not have her body made into an apothecary's shop."

Let us take leave of *The Doctor in Spite of Himself* with our clown doctor's deliberate estimate of medicine. Says he, "I find that it is the best of all trades; for, whether one does right, or whether one does wrong, one is always paid just the same. The bad job never refalls upon your back; and we cut as we please the stuff on which we work. A cobbler in making shoes cannot spoil a piece of leather unless he pays for the broken pots; here one can spoil a man without its costing him anything. The blunders are not laid to our account; they are always the fault of the one who dies. Indeed, the good of this profession is that there is among the dead a civility, a discretion the greatest in the world; and it is never seen that one of them complains of the doctor who killed him."

In *Mr. de Pourceaugnac* medicine is introduced in the way of a colloquy between a gentleman who is seeking a certain physician, and an apothecary. The layman asks the man of drugs whether he is the doctor. He is informed that the doctor himself is at present occupied at "expediting" some sick people. While awaiting his appearance the apothecary extols the merits of his superior in rank, proving himself a leal henchman. He says of him, "Yes, he always follows the highway, the highway, and does not go seeking noon at 2 o'clock in the afternoon; and, for all the gold of the world, he would not wish to have cured a person with other remedies than those the faculty permits." The other admits that "a patient ought not to want to be cured unless the faculty consents to it." Continues the apothecary, "It is not because we are close friends that I speak of it; but there is pleasure in being his patient; and I would rather die by his remedies than to get well from those of another. For, whatever happens, one is assured that everything is according to rule; and when one dies under his care, your heirs have nothing with which to reproach you." "That is a great consolation for a dead man," comments the other. The eulogist resumes, "Moreover, he is none of these physicians who draw cases out; he is an expeditious man, expeditious, who likes to hurry his patients along; and when one has to die, that is accomplished with him the most quickly possible." The gentleman agrees that "There is nothing like getting promptly through with matters." "That is true," rejoins the man of the mortar and pestle, "of what good is it to haggle so much, and to go round the pot so much? It is well to know quickly the short or the long of a sickness." Corroboratively, he continues, "There have been three of my children already of which he has done me the honor to conduct the sickness, who were dead in less than four days, and who, in the hands of another, would have languished more than three months."

The doctor appears on the scene. Somebody reports that a patient has excruciating pains in the head. "The patient is a fool," says the doctor; "so much the more so that, in the disease of which he is attacked, it is not the head, according to Galen, but the spleen, which ought to give him pain." Somebody else reports that another patient is getting worse and worse. Replies the doctor, "That

is not my fault. I give him remedies; why doesn't he let himself get well? How many times has he been bled?" "Fifteen times in twenty days," it is stated. "Bled fifteen times?" "Yes." "And he doesn't get well?" "No, sir." Concludes the doctor, "It is a sign that the trouble is not in the blood. We shall have him purged as many times, to see if it is not in the humors; and if nothing we do succeeds, we will send him to the baths." The apothecary reverently comments, "Behold there the limit; behold the limit of medicine!"

This act of *Mr. de Paurceaugnac* ends with a ballet which satirizes to the degree of extreme farce the prevalent immoderate and indiscriminate use of *lavements*. The apothecary, with a syringe, follows up a refractory patient who tries to elude him and his instrument; all deaf to the appeal of the would be operator, "Take it, Sir; take it; it will do you no harm; just a little clyster, a little benign clyster." Apothecary, doctors, stage clowns dance about the terrified victim, still singing, "Take it, Sir; take it; it will do you no harm." The poor fellow dodges, places his hat as a guard to the threatened parts, takes refuge in a chair, and finally flees the stage, holding the chair behind him; and still pursued by his importunate persecutors.

In *The Hypochondriac* the doctor is announced as a "man having eight thousand good pounds of income." The spicy soubrette remarks, "He must have killed lots of people to be so rich."

The doctor extols the fine qualities of his son, who is an advanced student of medicine, in this style—"He is firm in dispute, inflexible as a Turk in his principles, never relaxes his opinion, and pursues an argument to the last recesses of logic. But, above everything, that in him which pleases me, and in which he follows my example, is that he is blindly attached to the opinions of our ancients, and that he has never wished to comprehend or hear the reasons and the experiments of the pretended discoveries of our age, concerning the circulation of the blood, and other opinions of like stripe."

The brother of the hypochondriac, a sober philosopher, speaks thus—"My brother, the springs of our organism are mysteries, up to the present, where men grope in darkness; and Nature has placed before our eyes veils too thick for us to know anything beyond. . . . . Doctors know the most beautiful classics, know how to speak in fine Latin, know how to name in Greek all the various diseases, how to define and divide them; but as for curing them, that is something which they do not know at all. . . . . All the excellence of their art consists in a pompous gibberish, in a specious babble, which gives you words for reasons, and promises for effects. . . . . Of doctors there are some who are themselves in the popular error by which they profit; and there are others who profit by it without participating in it. Your Dr. Purgon, for example, knows nothing of *finesse* in medicine; he is a man, all doctor from the head to the foot; a man who believes in his rules more than in all the demonstrations of mathematics, and who would hold it a crime to wish to examine them; who sees nothing obscure in medicine, nothing doubtful, nothing difficult; and who, with an impetuosity of prejudice, a rigidness of confidence, a brutality of common sense and of reason, gives at random purgations and bleedings, and balances nothing. You should not think harshly of him for the harm he is likely to do you; it is with the best faith in the world that he would help you depart this life; and he would do no more in killing you than what he has done to his wife and children, and what in an emergency he would do to himself."

The last scene of this drama of Molière is a burlesque of the conferring of a medical degree, the matchless caricature of which, as Aimé Martin maintains, does no violence to the truth. We have square caps and robes galore; and of technical Latin a very deluge. An examiner asks the candidate what is proper to do in such and such a case. The bachelor answers, in rhymed Latin, "To give a clyster, afterward to bleed, then to purge." A second and a third state other conditions, likewise asking what is the right thing to do. The bachelor uniformly responds, "To give a clyster, afterward to bleed, then to purge." He is then asked the thing to do if these measures fail. He replies, "To bleed again, to purge again, to give another clyster." His answers are lauded; and he is declared worthy to be received within the body. The oath is then administered—"Do you swear to guard the statutes prescribed by the faculty with sense and judgment?" He replies, "Juro"—"I swear."

On that fatal day, February 17, 1673, Molière was himself playing the rôle of the bachelor. As he prounced the word, "Juro," he was seized with severe pains in the chest. He was carried home. A violent hæmorrhage from the lungs ensued. A few hours later his soul soared away from *la rue de Richelieu* to the abode of all great souls. And his name passed from its place at the head of *La Troupe de Monsieur* to a tablet large and fair in Fame's everlasting temple.

POST MORTEM FINDINGS IN GASTRIC ULCER.

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The post mortem findings of the stomach in those patients who have died as a direct result of gastric ulcer are not widely different. A difference in degree, however, exists in these post mortem findings between those patients who die as a direct result of gastric ulcer and those patients who have gastric ulcer, but have died of some intercurrent malady, as, for instance, pneumonia.

The post mortem findings in either class of cases, which are of greatest importance, are those connected with the mucous membrane of the pylorus and the pyloric outlet or orifice. In that class of cases wherein ulcer has been the direct cause of death, the mucous membrane of the pylorus is swollen and deeply hyperæmic, while the mucous membrane of the fundus of the stomach still retains its normal gray or pearl color and is not swollen. In other words, it does not show abnormal conditions.

The hyperæmia of the mucous membrane of the pylorus is not uniform. It is deepest at the pyloric orifice and about the ulcers, and fades out as it reaches the wider portions of the stomach. This condition is always true, whether the site of the ulcer is at the pyloric orifice or at a little distance removed from it, as is the usual case. The

rugæ, or folds, which are always present in the mucous membrane of the stomach, and which are closer together at the pylorus than elsewhere, for reason of the pylorus being narrow and the folds the same in number as at the fundus, and for reason of the hyperæmia and swelling of these folds in gastric ulcer, occupy much more room than normal, hence reduce the calibre of the pylorus. This condition is always present in varying degrees, sometimes the orifice being almost closed. The greater the swelling of the mucous membrane, the greater is the hyperæmia at the orifice. Sometimes the color of the tissues changes to almost blue. The same changes are noted in the tissues immediately surrounding the ulcers.

Seventy-five per cent. of all gastric ulcers are found on the posterior wall of the pylorus within an inch and a half to two inches and a half of the pyloric orifice. This small space in this particular area then may be termed the ulcer bearing area of the stomach. Twenty per cent. of the gastric ulcers which are not found directly in this area are found so closely to it, or on the border of it, as to really be within it, so far as ætiology and diagnoses are concerned; leaving five per cent. of gastric ulcers situated somewhat remotely from this area.

Post mortem findings usually show but one ulcer present, though three or four have been found in the same stomach at the same time. These ulcers vary in size from a split pea to two inches in diameter, either of which are extremes, their usual size varying from a silver dime to a silver quarter. The post mortem findings indicate, when the ulcers are very large, that there has been a coalescence of several smaller ulcers into the large one.

The post mortem appearance of gastric ulcers differ according to their age. If the ulcer is recent its walls are not elevated, they are soft to the touch and somewhat ragged in appearance. In the older ulcers the walls are cicatricial tissue, firm and resisting to the touch and slightly elevated above the surrounding tissues. The microscope shows the wall of the recent ulcer and also its base infiltrated with round cells, while in the older ulcers a good deal of fibrous tissue is found in the walls. The walls of the gastric ulcer slope towards the centre of the ulcer, showing that the deeper structures involved are not so widely involved as the superficial structures, and when these ulcers extend deeply into the tissues they have the appearance of a cone, the base of which is on the surface, with the apex deep in the tissues. In addition to the foregoing post mortem findings on the mucous membrane of the pylorus, cicatrices are sometimes found, marking the location of the former ulcers which have healed.

In that class of cases in which gastric ulcer exists, but the patients have died of some intercurrent disease, the post mortem findings have varied with the age of the ulcer. In some of the cases, where the ulcer was small and superficial, the mucous membrane of the pylorus was but slightly hyperæmic, with no noticeable swelling. Between this mild condition, which seems to be just the beginning of gastric ulcer, and that extreme condition found after death directly due to gastric ulcer, all degrees of hyperæmia and swelling of the mucous membrane of the pylorus exists.

The post mortem findings of the musculature of the stomach are frequently *nil*, though, if there has existed a marked pyloric stenosis, the muscular coats are found hypertrophied, this being a natural result of the excessive work done by the muscles, in forcing the contents of the stomach through the stenosed orifice. The post mortem findings in peptic ulcer of the duodenum do not differ specially from those of peptic or gastric ulcer in the stomach.

Since the introduction of gastroenterostomy as a treatment for gastric ulcer, the post mortem findings have been increased by the appearance of ulcers at the site of the anastomosis. This has only been observed in a few cases, but is interesting, however, tending to show that the site of gastric ulcer changes to the foci of greatest irritation. Another interesting fact is, that gastric or peptic ulcers are never found in tissues outside the influence of the gastric juice. These two facts are ætiologically significant and speak with no uncertain sound as to two very important factors in the ætiology of gastric ulcer.

The post mortem findings of the tissues about the stomach are sometimes very marked. If the ulcer penetrates the stomach wall and involves the peritonæum, adhesions form at once between the involved portion of the peritonæum and any perigastric tissues that are in contact with it; these may be the liver, pancreas, spleen, pericardium, or anterior abdominal parietes. A perigastritis is set up, and well marked indurations are found in some cases, which, from external examinations, simulate very closely new growths. The adhesions may be so strong that perforations do not take place, hence the gastric contents does not escape. The adhesions, however, do not prevent the spread of infection in the perigastric tissues, hence post mortem examinations sometimes reveal large infected areas in the perigastric tissues. These cases, however, do not always terminate as stated. The involved peritonæum may not come in contact with any other tissues, or adhesions may not form, for reason of the movable character of some of these organs, or the adhesions, if formed, may not be sufficiently strong; in which cases perforations take place and the gastric contents escape into the free peritoneal cavity. Hence the post mortem findings in these cases may be perigastric adhesions, walled in areas of infection, or diffuse or general peritonitis. Probably the most common cause of subphrenic abscess of the left side is perigastric infection.

The post mortem findings of the gastric contents in gastric ulcer are not marked, except for their absence, this being due to the fact that the stomach is usually found empty. It is a significant fact, at least ætiologically, that in cases of hyperchlorhydria the stomach ejects its contents very soon after they have been deposited in it, not because the food is digested, but because an abnormal stimulus of the nerve centres, controlling the muscular mechanisms in the stomach wall is produced by the abnormal conditions in the stomach,

causing the expulsion of the undigested mass from the stomach soon after it is ingested. Hence, in gastric ulcer the post mortem findings of the gastric contents are usually *nil*. I may add that gastric hyperkinesis may not always accompany hyperchlorhydria, but in my judgment it always exists in those cases that terminate in gastric ulcer.

As to the size of the stomach, post mortem findings do not indicate that it is changed in ulceration, unless very exceptionally. Some cases of ectasia, due to stenosis of the pylorus, have been reported, but in gastric ulcer this condition is rare. Local contractions are more frequently found, due to cicatrices which mark the sites of ulcers that have healed. All degrees of these have been found, some of which so extensive as to form the so called hour glass contracture of the stomach. Ulcers involving only the mucous membrane of the stomach heal without forming cicatrices, only the ulcers involving the deeper structures heal with the formation of scars. Hence, these post mortem findings teach that deep and wide ulcers of the stomach heal, but that in some cases, as in hour glass contraction, the healing of the ulcer has in no way benefited the case, as the contracture formed is as great a menace as the disease which produced it. In other cases, distortions of the stomach have been found which have so changed the relations of one part of the stomach to other parts of it, and to the organs about it, that it could not functionate normally. Hence, the conditions caused by the healing of ulcers are sometimes as vicious as the ulcers themselves.

Some interesting questions have arisen, as we have studied the post mortem findings in gastric ulcer, that may be discussed in this connection better than elsewhere. One of which is: Why do we have a certain, isolated, well defined, ulcer bearing area in the gastric wall, in which practically ninety-five per cent. of all gastric ulcers are found? That we may advance a reasonable theory for this, let us review for a moment the stomach wall and what really happens when the contents of the stomach is ready for digestion? There are three muscular coats that form in part the stomach wall. This muscular mechanism has two functions to perform in digestion; first, to mix the stomach contents with the gastric juice, and, second, when this is sufficiently performed to expel the mass from the stomach.

The stomach when at rest lies in the body with its posterior surface towards the posterior abdominal parietes, and its anterior wall surface towards the anterior abdominal parietes. When the stomach, however, is full and actively engaged in digestion the position of the stomach changes. Now the greater curvature of the stomach is towards the anterior abdominal parietes, the lesser curvature towards the posterior abdominal parietes, and the posterior surface becomes the most dependent portion of the stomach. In normal digestion the muscular mechanism thoroughly mixes the gastric contents with the gastric juice, and the mass is reduced to a liquid state and is then ejected from the stomach.

In cases of hyperchlorhydria, as we have before noted, the stomach is so acted upon by abnormal conditions in it that the muscular mechanism does not perform its first function of mixing its contents with the gastric juice. but performs its second function, and ejects its contents before they have become reduced to a liquid. In consequence of which a semisolid mass instead of a liquid is forced through the pylorus. At what point on the mucous membrane of the pylorus would we expect the greatest amount of irritation from this mass in hyperchlorhydria? Evidently on the floor of the pylorus, at that point first struck by the moving mass. This would naturally be the point of greatest irritation. This point corresponds to a small area on the posterior surface of the pylorus, which we know is the ulcer bearing area. In a few cases the ulcers have been near this area, but not in it, in which cases it is probable the stomach was not tipped so far forward or perhaps a little more forward than usual, bringing the point of greatest irritation at one side or the other of the ulcer bearing area.

Another interesting question concerning the post mortem findings is the hyperæmia of the pylorus. The first perceptible pathology in the gastric wall, in gastric ulcer, is hyperæmia of the mucous membrane of the pylorus. What causes this hyperæmia? The mechanical irritation caused by this undigested mass being forced over the tissues, is an element, we believe, but it is not the only element. If by any measure the excessive acidity of the gastric juice can be removed, the hyperæmia will disappear, but the removal of the excessive acidity also removes the cause of the undigested mass and the premature expulsion of it from the stomach, hence removes the irritation or friction above the pylorus. Hence, it seems the excessive hydrochloric acid is the more important factor in the ætiology of the hyperæmia.

But again, if the excessive acidity remains unchanged and the irritation of the mucous membrane of the pylorus is removed by any measures, the hyperæmia subsides. This is proved by the surgical treatment of gastroenterostomy. In the first instance the excessive acidity and the irritation are both removed, and the hyperæmia subsides. In the second instance the irritation alone is removed and the hyperæmia subsides. From these facts, what are the conclusions? That the vicious influence of the excessive hydrochloric acid present are evidenced more by its abnormal action upon the gastric juice, causing indigestion, and its effects upon the motor activity of the stomach, causing the expulsion of the gastric contents prematurely than by its chemical action upon the tissues of the stomach. In other words, the excessive hydrochloric acid by its vicious influence, causes the undigested mass in the stomach and its premature expulsion from the stomach, which causes the irritation resulting in hyperæmia, which terminates in those pathological conditions in ulcer. It is, however, doubtless true that after the tissues have been devitalized by the long continued irritation, that the corroding influences of the excessive hydrochloric acid, by directly attacking the tissues, adds much to the formation of the ulcers.

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THE GASTROINTESTINAL DISTURBANCES ASSOCIATED WITH MIGRAINE.*

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In a paper read before this association at Washington in May, 1903 (*American Medicine*, November 14, 1903), I reported seventy-three cases of migraine studied with reference to the associated digestive disturbances. The conclusions drawn from that paper were, in the main, as follows:

First.—A large majority (sixty out of seventy) of patients afflicted with migraine have some disturbances of the digestive system apart from the disturbances associated with the migrainous paroxysm.

Second.—While most or nearly all patients refer to an excessive acidity of the stomach during or even between the attacks, the majority (twenty out of thirty-one whose stomach contents were examined) had a subacidity.

Third.—Ptosis of one, or more, or all of the abdominal organs is frequently present (thirty-eight out of seventy-three).

Fourth.—A rational consideration of the digestive disturbances in migraine is of some advantage in treating these patients.

Since May, 1903, I have been able to add one hundred and eight cases of migraine to my list, and I am now ready to give the deductions and results from my study and treatment of these cases.

I wish again to refer briefly to the definition of migraine, hemicrania, paroxysmal headaches, or the commonly so called "sick headache." It is a periodical neurosis occurring most frequently in women, and is characterized by paroxysmal attacks of severe pain, usually confined to one side of the head, chiefly in the course of the fifth nerve. At times it is preceded by a variety of transient visual disturbances and parasthesiæ, and followed by nausea and vomiting (Leszynsky). The headache is often preceded a day or so by an unusual feeling of well being. This affords the patient an incentive for a day of unusual activity. On the following morning she may awake with prodromal symptoms with which she is quite familiar. There may be visual disturbances, photophobia, hemianopsia, blurring of vision, zig-zag shapes of light, or there may be pain and stiffness in certain groups of muscles of the neck or shoulders. These prodromal symptoms often are not present, but nearly every patient has some certain sign which assures her that a headache is due. During the height of the headache light increases the pain, as does also the recumbent position. The characteristic position of these patients is sitting propped up in bed in a darkened room, with eyes closed. Nausea is an early symptom, and vomiting usually heralds the approaching sleep, which ends the attack. Both nausea and vomiting may be absent.

It is decidedly an inherited disease. Of the one hundred and eighty-one cases tabulated, one hundred and sixteen gave a definite hereditary history, while of the remaining sixty-five some gave a doubtful history, and less no hereditary history at all.

It is interesting to note the peculiar type of family to which the migrainous patients belong. They are plainly neurotic: chorea, epilepsy, neurasthenia, hysteria, and other neuroses abound. They are small eaters, are below the average weight, have an abundance of nervous energy, but are deficient in physical strength and endurance. In a crisis they put forth a surprising amount of physical and mental effort, but always collapse with an attack of migraine. Ptosis of one or more of the abdominal organs is frequently found. These families fortunately show the evidences of decay, since a large proportion do not marry, those who do marry often have no children, or have below the average number. Of the ninety-six females in my last list, the age ranged from nineteen to sixty-five years, the average age being 36.2 years, and yet only fifty-two were married and only twenty-four of these had children. There are, of course, some remarkable exceptions. One patient, with terrific headaches, at the age of thirty has had seven children.

Migraine occurs more frequently than is generally supposed. Many cases are overlooked, because the patient in giving her history may refer to attacks of neuralgia or biliousness in such a matter of fact way that no further inquiry is made. A few well directed questions may reveal a trail of sick headaches leading back through two or three generations. The one hundred and eighty-one cases I have tabulated have been selected from slightly over six thousand patients examined—about three per cent. of all patients seen. These figures are all the more striking when the gravity of the disease is fully appreciated.

Migraine usually begins with the establishment of the menses or soon after, and may end with the menopause or soon after; a period of twenty-five to thirty years, which includes the years in which a woman is in her prime. The attacks come every week or two, or every month, and sometimes twice a week. They last from one to two or three days. During the attacks the patient is entirely incapacitated. The number of engagements cancelled, the amount of work left undone on account of sick headache is scarcely appreciated. When one adds to this the additional fact that very little has been accomplished thus far in overcoming or modifying the attacks, the importance of a consideration of migraine from any reasonable standpoint cannot be overestimated.

It is scarcely profitable to discuss in detail the several theories which have been advanced to explain the cause and symptoms of migraine. The vasomotor theory, the purely nervous theory, the uric acid theory, and the autointoxication theory have all had their advocates and times of ascendence. Some contend that there must be a persistent pathological condition to account for such a decided phenomenon. I agree with those who hold that migraine is of purely nervous origin, and that the symptoms are due to a primary functional disturbance of the nerves themselves. Some of the disturbances, such as vasomotor, may be the result rather than the cause of migraine; others, such as uric acid, autointoxication, digestive, ocular, nasopharyngeal, and menstrual are simply coincidental conditions. Either condition may precipitate an attack of

* Read before the American Gastroenterological Association, at Boston, June 4 and 5, 1906.

migraine, and thus become an important factor in a case.

In this paper I wish again to call particular attention to the presence and influence of the digestive disturbances. Before doing this I shall give the summary of the cases I have studied and tabulated.

Sex.—Of the one hundred and eighty-one patients, one hundred and fifty-five were females and twenty-six males.

Heredity.—One hundred and sixteen gave a distinct hereditary history. This figure is lower than the actual condition indicates, because many patients were unable to give a satisfactory history, their parents having died when they were in their infancy. In nearly all cases the headaches seem to have been inherited from the mother's side of the family. Occasionally both parents were afflicted, and in such case the patient usually suffered from a most severe and obstinate type of the disease. Rarely the father alone was afflicted.

Ptosis.—Ninety had prolapse of one or more of the abdominal organs. Most frequently it was the right kidney; next in order, the right kidney and the stomach; occasionally both kidneys and the stomach, and in a few cases all of the abdominal organs. That half of the cases of migraine have ptosis is of some significance and not a mere coincidence. It is another characteristic which marks the type of family in which migraine prevails. From the fact that patients suffering from migraine are almost without exception under fed and under weight it might be concluded that the large percentage of cases of ptosis is a direct result of the disease. The ætiology of ptosis is still obscure, and opinions differ.

Digestive Disturbances.—One hundred and thirty-seven cases gave a definite history of digestive disturbances between the attacks. The symptoms were definite, such as heaviness after eating, pyrosis, fermentation, and gas, constipation or diarrhœa; in fact, any or all of the symptoms which make the symptom complex of what is ordinarily called indigestion. In one hundred and one of these cases gastric analyses were made. Twenty-five had normal secretion of gastric juice, thirty-two had an excessive secretion (hyperacid) and forty-four had deficient secretion (hypoacid). Many showed the evidences of chronic gastritis and enteritis. A few gave the history and had the clinical evidences of chronic ulceration of the stomach.

I stated in my former paper that the opinion usually prevails with both patient and physician that these cases suffer almost without exception from a hyperacid stomach. This opinion is based upon the patient's own experience and statement that what she vomits during the attack is excessively sour. That the stomach contents in the large majority of cases is not excessively acid is shown by my statistics. In my first series, however, I found a larger proportion of subacidities than in my last series:

First Series.—Thirty-one gastric analyses; eight hyperacid, twenty hypoacid, and three normal.

Second Series.—Seventy gastric analyses; twenty-four hyperacid, twenty-four hypoacid, and twenty-two normal.

Migraine patients sooner or later place themselves on a very strict diet, frequently on a starvation diet. They discard certain foods because of a supposed hyperacidity. They are encouraged in this by their physicians, who too often accept the patient's statement without any investigation. The diet becomes monotonous and the patient is continually in a state of subnutrition, which favors more frequent attacks of headache. It is the recognition and correction of this mistake which has given me great encouragement in the treatment of these cases.

With our very limited knowledge of the true cause of migraine, we cannot look for a specific treatment. But a great deal can be done for these unfortunate sufferers by a rational symptomatic treatment. Such coincidental abnormal conditions as may be found in the eyes, nose, and pharynx, heart, kidneys, digestive organs, pelvic organs, and, in fact, in any organ, should, if possible, be corrected. It is often surprising to see how the slightest abnormality in any of these organs will affect the number and character of the headaches.

In correcting these abnormities, very satisfactory results are often experienced. Especially is this true of the digestive disturbances. Since many of these patients are underfed and upon an unnecessarily strict diet, I have accomplished much in "leveling up" the digestive organs to a higher plane of endurance. The patient thus gains in weight, becomes stronger, physically, does not experience fatigue so readily, and avoids many attacks. To do this "leveling up" process it is, of course, necessary to be thoroughly acquainted with the condition of the digestive system. This is as important as it is to know the errors of refraction or the muscular difficulties of the eye, before any correction is attempted with lenses.

It is not necessary to go into the details of the various lines of treatment which may be established. I have for some years abandoned all so called specific treatment of migraine. There are two remedies, however, which I have used almost routinely when the removal of reflex and exciting causes was impossible or did not accomplish the desired results. They are the bromides and the various preparations of cannabis indica.

It is impossible in such a series of cases of migraine as this paper is based upon, to give an accurate idea of the results. It cannot be expressed in definite percentages of cures and failures. All that I can say is that many patients experienced relief in the frequency and severity of the attacks, and some seem to have recovered entirely. Of this last class I wish to report one case.

Miss E. M. P., æt. twenty-three years, a stenographer, consulted me first June 21, 1904. She complained of sick headaches, which occurred every third week. The attacks were typical. Her mother and a sister were similarly afflicted. The digestive symptoms between the attacks were, a variable appetite, pain and distress about fifteen minutes after eating, pyrosis and constipation. The patient had been in a street car accident some time previously, and since that time the attacks were more frequent and severe. She had never had her eyes examined. The tongue was coated; the heart and lungs were normal; the stomach was dilated to the umbilicus; the right kidney was movable; the urine was normal; the gastric contents showed a total acidity of seventy and the presence of free hydrochloric acid. She weighed twelve pounds less than her usual weight. I prescribed a suitable diet and an alkaline treatment. In three months the attacks gradually disappeared.

April 30, 1906. The patient seems well, no headaches of any consequence. The bowels are regular. The stomach is normal, and the right kidney is not palpable.

4634 Fifth Avenue.

A FATAL CASE OF SCOPOLAMINE POISONING.

By George W. Ely, M. D.,
Pittsburgh, Pa.,
Surgeon to St. Francis Hospital.

Mrs. G. T., age twenty-nine years, suffered from carcinoma of the larynx. Her heart and lungs were normal, and the urine showed no evidences of any renal lesion. She was in fairly good physical condition, not noticeably emaciated, as the disease dated back only six months and was slowly progressive. There was but little disturbance of the respiratory function from pressure, as the tumor was small. She was admitted to St. Francis Hospital on June 7th, and was prepared in the usual manner for extirpation of the larynx.

Dr. J. K. Sterrett had been called in consultation and had decided upon the operation, and we had agreed that she was a suitable subject for the administration of scopolamine. Dr. Sterrett, as well as myself, had found the anæsthetic to be of advantage in similar cases, that is, cases for operation in or about the mouth or upper air passages. At 6:30 a. m., on June 8th, she was given hypodermically one eighth of a grain of morphine and one one hundredth of a grain of scopolamine with the intention of repeating the doses after the usual manner of administration. Contrary to instructions she got out of bed and put on her clothes and went out upon the veranda. She returned in about a half hour and laid down again. Soon the nurse noticed that she was sleeping soundly, the respirations becoming stertorous. At about the same time it was noted that she was a little cyanotic. The nurse tried to arouse her, but to no avail. The house surgeon, Dr. G. M. Stuart, was hastily summoned and found the following conditions present: The patient was in coma and could not be aroused, the pupils were moderately dilated, but reacted to light, the tongue, mouth, and pharynx were extremely dry, the surface of the body was also dry and pale. The superficial reflexes were abolished. The pulse and respirations were practically normal, but soon the respirations became shallow and less frequent. This latter condition was progressive in spite of the treatment, and the patient finally died from paralysis of respiration about two hours after the administration of the drug.

Dr. Stuart reports that when he saw her, there was no cyanosis, for which he looked particularly, as he had been previously instructed that in case of cyanosis he was to do an immediate tracheotomy if he thought it necessary. As he deemed the trouble of central origin he did not perform the tracheotomy.

On the two nights previous to the time of death she had had a little cyanosis and difficulty in breathing, but as soon as she assumed the upright position it disappeared.

The heart continued to pulsate for at least two minutes after the cessation of respiration, and at the time of the cessation of the respiratory act the heart was in fairly good condition, excepting that the pulse was a little accelerated. The treatment given was: Hypodermics of atropine, strychnine, and the administration of oxygen. At the same time external heat was applied with friction to the surface of the body.

While it was not possible to obtain an autopsy, it is certain that death was due to the scopolamine alone, as her organs had been very carefully examined by several physicians and found to be normal.

7105 Frankstown Avenue.

Our Readers' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LIV.—How do you treat spasmodic croup? (Closed September 15, 1906.)

LV.—How do you treat acute articular rheumatism? (Closed October 15, 1906.)

LVI.—How do you treat sciatica? (Answers due not later than November 15, 1906.)

Whoever answers one of these questions in the manner most satisfactory to the editors and their advisors will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short; if practicable, no one answer to contain more than six hundred words.*

All persons will be entitled to compete under the regulations laid down by the postal authorities. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the Journal.

The prize of $25 for the best essay submitted in answer to question LIII, has been awarded to Dr. L. S. Oppenheimer, of Tampa, Fla., whose article appeared on page 646.

PRIZE QUESTION NO. LIII.

THE TREATMENT OF BURNS.

(*Concluded from page 749.*)

Dr. J. A. Ceconi, of Boston, remarks:

Treatment of burns varies in accordance with the severity of the injury and with the degree of the burn, and a thorough knowledge of these conditions is necessary for proper and adequate treatment, prospective of good results.

Burns are injuries caused by fire or dry heat, and are divided into three stages viz.: (a) Burns of the first degree; (b) burns of the second degree; (c) burns of the third degree.

The conditions in these three degrees manifest themselves as follows: (a) Burns of the first degree are those where the injury is mild and characterized by erythema, irritation, and the cardinal symptoms of an acute inflammatory process of the skin without the formation of vesicles. (b) Burns of the second degree are more serious, and are characterized by vesication, the formation of vesicles and bullæ, together with the symptoms of an acute inflammation. (c) Burns of the third degree are those characterized by eschars, gangrene (local or deep), and by hæmorrhage when the slough separates.

In burns of the first degree the treatment is mainly directed to the alleviation of the pain by local applications, such as the ice bag, olive oil, or a lead water compress, and by elevation, if the part affected is a limb, an ointment containing equal parts of boric acid and petrolatum spread upon lint or muslin, and laid upon the burnt surface aids greatly in reducing the local heat and adding to the comfort of the patient. It is well to envelop the parts in layers of cotton batting, and then all should be held in

place with a roller bandage. Sometimes the pain becomes so excessive that a morphine injection is necessary.

In burns of the second degree thorough antiseptic procedures should be carried out both in relation to the patient and the attendant. The blebs should be punctured at their dependent parts, and the contents evacuated, care being taken not to remove the cuticle. The burnt surface should then be bathed in a weak solution of bichloride of mercury (1-5,000), or a one per cent. solution of carbolic acid, and then washed off with warm sterilized water or a decinormal saline solution. After this an application of a sedative dusting powder as zinc oxide or bismuth subnitrate will aid materially. Ointments of zinc oxide and boric acid are excellent adjuncts. The less often redressing is done the better. If the burn is extensive the warm bath may be employed with advantage and is given as follows: The patient is placed in a tub of decinormal salt solution at a temperature of 100° F., which is reduced gradually to 98.6° F. This renders great relief to the patient, who may be propped up on rubber air pillows and sleep without danger. The temperature of the bath and the proper saline proportions should be maintained by the attendant. If the bath becomes foul it can easily be drawn off and renewed. Shocks can be prevented by raising the temperature of the bath on the first symptoms.

Burns of the third degree. In burns of this nature, the sloughs should be removed as soon as possible, and this is accelerated by hot applications over the site of the sloughs. A solution of borosalicylic acid should be used for a moist dressing and simple salicylic gauze for dry dressing in these burns. The rest of the treatment should be guided by the same rules as in the treatment of a simple ulcer. Measures should be taken to prevent the resulting cicatrix from causing deformity; these will vary in individual cases. Compression and extension usually overcome this serious complication. Amputation is indicated if the patient's condition is good, or where the resulting cicatrix renders the member useless. Skin grafting is at times of great service in the ulcerative stage where indolent ulcers are hard to heal.

Following the course of most severe burns, the stages of prostration, reaction, and suppuration follow and demand a supporting plan of treatment such as the following: Thirst should be allayed by the ingestion of cracked ice, barley water, siphon sodæ, and a liquid diet. Potassium bromide should be given during the reaction, and rest in bed should be enforced. The heart should receive proper attention and if weak, stimulants, such as caffeine and strychnine, should be used. The constitutional treatment calls for a generous stimulating diet, beginning first with light liquid and nutritive ingredients, as beef tea, kumyss, malted milk, etc., and gradually increasing to a semi-solid diet as custards, milk, toast, etc.

It is well, as in all cases where there has been cell destruction and loss of tissue, to finish the treatment by advising a change of climate, and the prescribing of good tonic to counteract the degenerative processes which necessarily have occurred from the injury.

Dr. M. Kennedy, of Jacksonville, Fla., notes:

Burns require to be treated by systemic and local remedies. The systemic remedies should depend on the extent of the injuries and on the effect produced on the system. Shock requires arterial stimulants, whisky, opium, strychnine, and local application of heat. The injury should be dressed without delay, and the epidermis preserved intact if possible. The serum should be allowed to escape by inserting the point of a bistoury or needle into the sack at its margin. The burn now should be gently douched with warm sterilized water in which sodium bicarbonate has been dissolved and two and one half per cent. of phenol added. This wash is antiseptic and analgesic, and acts in reducing local inflammation; a thick layer of absorbent cotton, sterilized if not already so, is now applied and retained by a bandage. As long as the burn is not painful and no suppuration exists the dressing should not be disturbed. If, however, the injury should become painful or suppuration set in the dressing should be removed by thoroughly saturating the cotton with the solution I have mentioned, without the phenol. If time is taken to thoroughly saturate the cotton there will be no trouble in removing every fibre of it. The part is now well cleansed with the phenol and soda solution, and, should suppuration have commenced, the area should be dusted through a small wire sieve with a powder composed of the following: Bismuth subnitrate, zinc oxide, magnesium lime, each one part; powdered starch, two parts. Over this place the cotton and bandage. This dressing should not be disturbed for several days, as the powder will absorb the pus, should there be any, and the wound will heal beneath the dressing. Indeed it should not be removed until it becomes detachable in mass from the wound. But if the antiseptic solution mentioned is thoroughly used, and dressing properly applied so as to exclude completely the atmosphere there will be no suppuration unless the tissues are deeply devitalized. Absorbent cotton is, according to my experience, preferable, because more soothing on the raw and intensely sensitive surface of a burn, to antiseptic gauze.

When there is no fever the patient should be allowed a full diet, substituting milk and eggs for meat. But when fever is present, as it will be in all severe burns, and the bowels have not been acted on sufficiently the patient should have a saline purge, or calomel and soda sufficient to produce the desired effect. Liquor ammonii acetatis or liquor potassii citratis with spiritus ætheris nitrosi and aconite will be indicated in this condition, and possibly a few doses of quinine if malarial trouble is suspected, after due consideration is given to the tendency to brain complication in burns. The diet in this condition should be light, liquid, and nourishing. The eliminating organs should be maintained in good condition. The tendency to organize complication in burns should be always present to the mind of the practitioner. The kidneys when functionating properly should not, I think, be overstimulated. The bowels and skin should be kept in good condition. Should the patient be restless, unable to get restful sleep compound acetanilide powder (U. S. P.) may be given with good effect. But should pain be added to restlessness morphine and atropine should

be given in as small a quantity, however, as will quiet the patient, and induce sleep at night. Quinine, iron, strychnine, alcohol, etc., may be needed in the exhaustive stage of severe burns.

Correction.—In our Readers' Discussions of September 29, 1906, Dr. George P. Dale, of Dayton, Ohio, gives two prescriptions which should read as follows:

℞ Lead acetate, ...ʒss;
Water, ...℥viii.

or

℞ Aluminum sulphate, ...ʒj;
Water, ...℥viii.

Correspondence.

LETTER FROM MONTREAL.

Medical Inspection of Schools.—Proposed Additions to the General Hospital.—The Work of the Hospital.—The Medical School of McGill University.—Personal Items.

MONTREAL, *October 6, 1906.*

The medical inspection of schools is now on trial in Montreal. Forty medical practitioners have been appointed for this work, and the trial is to extend over a period of three months. It was given some attention last winter, and later on an appropriation of $3,000 was set apart by the City Council for the purpose. This allows of each of the forty inspectors' receiving the sum of $25.00 a month for the work. The amount is insufficient, but it is altogether likely, owing to the startling conditions revealed in some schools, that the service will be continued and the pay of the inspectors increased according to their work. There are in Montreal 175 schools attended by upwards of 150,000 pupils, so the task of a systematic inspection is no inconsiderable one. So far as the inspection has proceeded, it shows that the state of affairs in certain private schools certainly needs reformation. One inspector reports: "Thirty-three pupils out of a class of sixty-six attacked by measles as the result of one pupil suffering from measles attending that class;" and "fifteen per cent. of pupils at one school suffering from defective eyesight." Large numbers of pupils showed some signs of tuberculosis. It is likely that a deputation of inspectors will shortly be sent to visit American cities where the inspection of schools has been in vogue for some time.

The Montreal General Hospital is discussing the question of the erection of a new wing, which is to contain the heating, lighting, and laundry plants. A new property for the purpose has been purchased containing 18,000 square feet, the price being $18,000. Additional accommodation will also be provided for about twenty nurses. The contracts for both extensions at a cost of about $15,000 have been let out, and are to be completed in three months' time. During the quarter ending June 30th there were treated in the institution 881 patients. There were fifty-nine deaths, twenty-eight being within three days of the patient's admission, making the mortality of ordinary hospital cases 3.5 per cent. In the out door departments there were 10.893 consultations. The income for the quarter amounted to $18,196, and the expenditure to $24,924. A legacy of $100 000 was received from the estate of the late Mr. E. H. King and one from the late Mrs. E. H. King of $2,500, which amounts were added to the reserve fund. The endowment fund was augmented to the extent of $2,000, thus bringing that fund up to $93,500. Dr. Francis J. Shepherd was unanimously elected to fill the vacancy on the Management Committee in succession to the late Dr. Robert Craik. New medical officers were appointed as follows: Dr. A. S. Hillman, Dr. G. E. Gillies, Dr. F. B. Gurd, Dr. C. P. Holden, Dr. P. A. Macdonald, Dr. C. F. Covernton, Dr. R. C. Weldon, and Dr. W. B. Gourley.

The opening lecture of the medical faculty of McGill University was delivered this year by Dr. R. F. Ruttan, professor of chemistry, and it began the seventy-fifth session. Dr. Francis J. Shepherd occupied the chair in the absence of Principal Peterson in Europe. In opening his address Dr. Ruttan referred to the founding of the school, three quarters of a century ago, by Dr. Robertson, Dr. Holmes, Dr. Stevenson, and Dr. Caldwell, whose portraits now adorn the faculty room of the medical department. He stated that the first introductory lecture in connection with medical education in Canada was given in the committee room of the Montreal General Hospital on Monday, the 7th of October, 1822, by Dr. John Stevenson, one of the founders. Through the instrumentality of this noted quartet the Montreal General Hospital had some time previously been founded. Later on this proprietary school became the medical faculty of McGill University, and it was then the activity and energy of the young faculty which first brought McGill prominently before educationists and launched it on a successful career. Thus were fulfilled the conditions in the will of Mr. James McGill, the founder of the university. Dr. Ruttan then went on to advocate a higher standard in medical degrees. He pleaded for an extension of the course to five years and for a degree in arts, with a special training in science, as a prematriculation education. There is an increase in the attendance in the school over last year, so that the numbers may be put down as over four hundred.

Dr. Charles Monod, the distinguished Parisian surgeon, has been visiting in Montreal. He has been the guest of Dr. E. P. Lachapelle, president of the Quebec board of health. Among others who have shown him marked attention are Sir William Hingston, Mr. Justice Mathieu, dean of the law faculty of Laval University, and the Lafontaine Club. The many friends of Dr. James Stewart, professor of medicine in McGill University, both in the United States and Canada, will learn with regret that this gentleman, one of the leading members of our profession on this continent, is suffering from the effects of a stroke of paralysis sustained last week.

A Peculiar Prescription.—A Chicago druggist submits the following as a curiosity in the prescription line: Ten cents permanganate of potash, to make a solution two shades lighter than beer and use as directed.—*The American Druggist and Pharmaceutical Record,* August 13, 1906.

Therapeutical Notes.

Fissure of the Nipples.—Scarff praises the following:

℞ Balsam Peru, } .....āā 2.0 grammes;
Tinct. arnicæ, }
Ol. amygdalæ dulcis,.....30.0 grammes;
Aqua calcis, ...15.0 grammes.
M.

Journal de médecine, September 9, 1906.

Extemporaneous Preparation of Collodion.—Chevreau suggests that when collodion is wanted it can be extemporaneously prepared by placing the proper quantity of gun cotton in a bottle and adding to it ether and alcohol (95 per cent.) to make a solution corresponding in strength with the pharmacopœial formula. The ether is first poured on the cotton and the bottle well shaken, the alcohol is added, at the last, to complete the solution.—*Journal de médecine*, September 2, 1906.

Methylene Blue in Purulent Dacrocystitis.—Wicherkiewicz (*Norving Lekarskie* and *Le Bulletin médical*, September 8, 1906) declares that the profession should not abandon methylene blue entirely, since it yields remarkable results in cases of chronic purulent dacrocystitis. In these cases he recommends after washing out the sac with a solution of boric acid to inject a 0.2 to 0.5 per cent. solution of methylene blue, followed by the application of a bandage, so as to make light compression. If there are vegetations obstructing the lacrymal duct these should be removed with a sharp curette; then the lacrymal sac is washed with hydrogen dioxide and methylene blue is injected. The author has had excellent results from this treatment, even in several cases in which it had been previously decided that extirpation of the lacrymal sac would be necessary.

Intravenous Injection of Salt Solution in a Case of Poisoning by Male Fern.—Konoplev (*Vratchnebnaya Gazeta*, 1906, No. 18, through *Revue de thérapeutique*, August 15, 1906) reports a case of poisoning by an overdose of extract of filix-mas. The symptoms were principally nervous; there was delirium with excitement alternating with periods of unconsciousness. The reporter had recourse to a massive dose of normal salt solution (400 grammes). As he had with him a syringe of only 10 c.cm. capacity, he made the injection slowly and with many interruptions. He was able to observe, however, that after each injection the amelioration became more marked. Following the injection of the entire quantity named, the patient was nearly well, and soon afterward entirely recovered.

The Solanaceæ in the Treatment of Hyperchlorhydria.—For some time atropine has been the favorite remedy for the relief of the gastric crises attending hyperchlorhydria, principally because on account of its inhibitory action upon all the other secretions, it was thought that it would also diminish that of the stomach. Rabizzi (*Gazzetta degli ospedali e delle cliniche*, August 19, 1906) claims that there is a real advantage gained in these cases by substituting for the atropine a mixture of the tinctures of several of the solanaceæ, as introduced by Professor Rummo. The formula is as follows:

℞ Tincturæ Stramonii, }
Tincturæ belladonnæ foliæ, } āā 4.0 grammes (or ʒi).
Tincturæ hyoscyami, }
M.

Take twenty drops in the morning and also in the evening, daily.

Chaulmoogra Oil.—In a case of inveterate pustular eczema of five years standing, March (*Journal de médecine*, September 9, 1906) used chaulmoogra oil on compresses, applied twice daily; and he also gave tonics internally. At the end of five weeks the eruption had completely disappeared, leaving the skin flexible and soft. The natives of India use the oil in scrofula, leprosy, and syphilis. They give it internally in doses of 30 to 40 c.c., twice daily. To infants they give three drops in milk or cod liver oil. In the tropics, the islands of Mauritius and of Réunion, this remedy is used in all forms of leprosy, both tuberculous and anæsthetic. In sloughing wounds it also brings about a rapid cure. The oil is applied on compresses to the lesions and also administered internally. The doses may be increased to 3 to 5 grammes a day, but such large doses should never be given at the beginning, and only in cases of grave character. The patient's strength should be built up by tonics and good food. Among the articles prohibited are eggplant, pork, and salt meats and fish.

Medical Treatment of Uterine Fibroids.—Lamendeau reports (*Le Journal de médecine et de chirurgie*, Montreal, September 8, 1906) an interesting case of a woman, thirty-eight years of age, who suffered with carcinoma of the breast and with uterine fibromyoma. She was very anæmic on account of the great loss of blood at her menstrual periods. The breast was removed by Dr. Mercier, but the operation of hysterectomy was deferred for six months on account of her poor general condition. She came under the care of Dr. Lamendeau, who gave her tablets of arsenic and strychnine (0.2 grain after each meal) and fifteen or twenty grains of quinine, in one dose, each morning during her menstrual period, and she was directed to remain in bed while the flow continued. After five or six months of treatment she was again examined, and the fibroids were found to have almost entirely disappeared. At this time the menses were regular, there was no longer any pains, and the general condition had greatly improved, so that there was no longer any question of operation.

Administration of Potassium Iodide by the Rectum.—Tueyrat, at a recent meeting of the Société médicale des hôpitaux, stated that he had been using iodized enemata in tertiary syphilis where the patient's stomach would not tolerate iodides, and where the lesions had been unsuccessfully treated by mercury. He gave, daily, one injection of marshmallow water (or starch water) containing at first two grammes (30 grains), which was progressively increased to eight grammes (or two drachms) of potassium iodide.—*Le Progrès médical*, June 16, 1906.

Tincture of Capsicum in the Pneumonia of Alcoholic Subjects.—The method of treatment of pneumonia by capsicum is of American origin. The *Journal de médecine* (September 9, 1906) states that it is valuable in those cases which are marked by intense delirium. A decoction of capsicum annum may be used, or a tincture, diluted with water (1 to 30 or 45). A dessertspoonful of this is to be given every two or three hours; or the tincture may be prescribed in doses of twenty drops several times a day. When the action of the heart becomes weak and the nervous phenomena are marked, the dose may be increased to a quantity sufficient to control them. The patient's condition improves and he is enabled to sleep quietly.

Treatment of Herpes Zoster.—Ingelnans formulates the following treatment for zona: In simple herpes zoster the patient is to be given a purgative, followed by intestinal antiseptics, such as benzonaphthol or phenyl salicylate. He is kept upon a milk diet. To relieve the neuralgic pain he takes a pill of quinine sulphate (0.25 gramme or gr. iv) and extract of opium (0.01 gramme or gr. $^1/_6$) as required. Or, he may take fifteen to twenty drops of the tincture of gelsemium during the day. The following ointment may be applied to the lesions: Cerate, 20.0 grammes; olive oil, 40.0 grammes; extract of belladonna, 0.06 gramme. Hemlock plaster containing four per cent. of powdered opium may be substituted. If the ulcerations spread and become gangrenous, antiseptic absorbent powders or dressings are substituted, such as charcoal or cinchoma, with iodoform or phenyl salicylate. If the pains are severe, hypodermic injections of morphine may be given, or the actual cautery may be applied at the point of emergence of the perforating nerves. Fowler's solution may be given in increasing doses for the neuralgia. In ophthalmic zona, antiseptic solutions are used for the eyes, followed by an ointment of boric acid and zinc oxide (of each 2.0 grammes), or thymol iodide (1.15 grammes), cocaine (0.26 gramme), in petrolatum (20.0 grammes).—*Journal de médecine*, September 9, 1906.

Filmarose, the Active Principle of Male Fern.—Jacquet, in the *Gazzetta degli ospedali e delle cliniche*, No. 84, claims that in Felixmas the only active principle is filmarose. When injected into frogs it produces irregular paralysis and death from heart arrest in diastole. Rabbits die in five hours after swallowing 0.60 to 0.75 gramme (gr. x-xii), with weakness and diarrhœa. Intravenous injection produces paralysis, accelerated respiration, augmentation of deflexes, and general convulsions with opisthotonos, death being due to failure of respiration. The symptoms resemble those produced by ospidine. Jacquet administered filmarose in thirty-eight cases of *Tænia solium* in the human adult in doses of 0.70 gramme (gr. vi) dissolved in 1.0 to 2.0 grammes (m. xv-xxx) of chloroform. These were followed by a dose of castor oil, 20 to 30 grammes (ʒv-℥i), morning and night. In twenty-eight cases the worm was expelled with the head; in six cases without the head. In four cases the dose was apparently too small to produce any result. No ill effects were observed beyond insignificant nausea and pains in the abdomen. As regards the other principles, he found filicic acid inactive; albaspirine appeared to act better, but its feeble percentage in male fern forbids the entertainment of the hypothesis that to this body is to be attributed an active part in the elimination of the parasites.

Spirits of Camphor Causes Necrosis of a Crushed Finger.—Leroy reported the case of a sixteen year old youth who had his ring finger caught in a machine, which did not, however, break the skin. The power of voluntary motion was preserved, but movements were painful (*Le Nord médical*, Lille, August 5, 1906). He applied tincture of camphor on a compress, and two days later the finger became livid and commenced to dry. He continued the camphor dressing. At the end of six weeks he applied at the hospital for treatment, with the finger absolutely black, with a marked line of demarcation. The phalanx was found to be fractured at its superior third. The gangrenous portion of the finger was removed. The gangrene was attributed to the nature of the accident and to the dressing employed.

A Simple Emergency Dressing for Wounds on the Field of Battle.—In the Russo-Japanese war a very simple method of dressing wounds was used, by the Russian army, according to Walter von Ettingen (*Archives médicales belges*, No. 5; *La Tribune médicale*, September 1, 1906). Before each battle small compresses of gauze (10 cm. by 10 cm.) were enveloped in parchment paper, sterilized in large numbers, and given to the troops. When a soldier was wounded and brought to the lazaret, an attendant, without waiting to wash the wound or shave the skin, applied a piece of gauze over an area as large as the palm of the hand and poured on the following solution of mastic, so that the gauze immediately adhered, which was then covered with a roller bandage:

℞ Mastichis, ...20.0 grammes;
Chloroformi, ...50.0 grammes;
Ol. lini, ...20 drops.
M.

This can also be made extemporaneously by taking one spoonful of mastic, three spoonfuls of chloroform, and twenty drops of linseed oil. In many cases splints were also applied, so that the man could be conveyed to the hospital. This simple treatment gave the best results. Besides its efficacy and simplicity, it has other advantages; it can be applied by orderlies or others without danger of contaminating the wound; the application of the mastic solution by a piece of cotton or a brush avoids the contact of the fingers, and the compresses of wadding or gauze are rolled in such a way that they need only be touched on one side. This solution can also be employed to make strips of muslin or cloth adhere to the skin in applying extension to fracture of the leg, the clavicle, the radius, or the ribs. The author believes that this solution may have its uses in peace as well as in war.

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THE RELIEF FUND OF A GREAT CITY.

Few persons, we imagine, would suspect that a subject for comment in a medical journal could be found in a tax bill. But on the back of the bill for the year 1906 there is printed a list of the principal purposes for which the funds of the City of New York are appropriated, with the amount apportioned for each of them. The total expenditure for the year is set down as $116,805,490.37. This vast sum of money is for the "running" expenses only, having nothing to do with the enormous undertakings for the cost of which the city is bonded. The city's indebtedness may be estimated in the light of the fact that $18,459,015.38 (exclusive of amounts paid from the sinking fund and from special and trust accounts) is to go to pay interest. It is gratifying to find that, in spite of this colossal payment of interest, $7,430,992.03 (exclusive of amounts canceled by the commissioners of the sinking fund and amounts paid from the sinking funds and from special and trust accounts) goes toward the extinguishment of the city debt.

We mention these amounts in order that the reader may appreciate the proportion devoted to purposes of relief and estimate the city's ability to meet its expenses. The Department of Public Charities is maintained at the cost of $2,048,740.16; in addition, the charitable institutions not otherwise provided for require $3,456,056.44. Bellevue and the allied hospitals call for the expenditure of $648,480.78. They include only the hospitals owned by the municipality, so that the cost of their maintenance is to be added to the hospital benefactions administered by private societies, but provided for almost entirely by individual contributions—that is to say, all the great hospitals except Bellevue. The Department of Health is to cost $1,344,396.66, and the Tenement House Department $618,433.08. Both these departments are essentially agencies of relief. In general terms, then, we may reckon that this year the city is paying the sum of $8,116,107.12 for the maintenance of the public health and the relief of the sick, the injured, the disabled, and the poor. Surely this is no mean amount, but it is devoted to purposes that must be fulfilled. We believe that it is judiciously spent. Doubtless many of the recipients of public charity are unworthy, but it is not wise to discriminate too closely. It is better to spend money on the undeserving than to withhold succor on any other than the most palpable grounds.

THE ZOOLOGICAL DISTRIBUTION OF INFECTIOUS DISEASES.

Attention has been called in a previous article to the unexplained and, if explicable, significant fact that an infection, serious and perhaps virulently contagious for one or more animals, fails to attack others. In other words, immunity and susceptibility depend to a large degree upon the place of an animal in the zoological scale. Even the study of gross parasites reveals an analogous condition. The mistletoe clings by preference to the oak; certain insects infest one or a few trees, whether attacking the leaves as fodder, nesting in the bark, tunneling in the wood, or making those peculiar imitations of fruits commonly called galls. Certain intestinal parasites select one or more animals as hosts, though undoubtedly passing harmlessly through various others.

When the parasites are of comparatively high rank in the zoological scale, like insects, it is reasonable to suppose that something akin to intelligence causes the selection of hosts whose anatomy and chemistry afford a comfortable residence and a suitable nutriment. Restricting ourselves to minute, mainly unicellular infectious germs, whether bacterial, schizomycetic, or protozoan, the lack of locomotor power, at least of such degree as would enable the parasite to pass by its own action from one potential host to another within its own short lifetime, and the lack of special sense organs and of a nervous system preclude any research for hosts actuated by intelli-

gence, instinct, or whatever we choose to call the impulse. At the same time, it is unquestionably true that differences in anatomy and chemistry determine that one animal to which the potential parasite is conveyed shall escape the lodgment of the parasite, as a cause of disease, while another animal provides the necessary environment. To what degree insusceptibility is a passive process, involving merely the lack of suitable environment, and to what degree it depends upon active resistance, are difficult problems. We allude, of course, merely to insusceptibility of an entire species or larger group of animals, not to the occasional insusceptibility of an individual as determined by previous service as a host or other causes.

A priori, it would seem to be a comparatively simple matter to determine the laws, if not the ultimate reasons, governing the distribution of parasites throughout the animal and vegetable kingdoms or, to limit the problem somewhat, the distribution of infections among animals. A logical procedure would be, first of all, to compile a check list of the animals susceptible or immune, respectively, to the various infectious germs. We should expect that mere inspection of such a list would at least favor the induction of general laws governing the distribution of infections. Then, by studying the comparative physiology of the various animals, we should expect to be able to deduce at least partially satisfactory reasons for such distribution. As a matter of fact, the student essaying such a problem encounters insuperable difficulties. First, the bare facts at our command are very meagre; surprisingly few definite statements are on record to show what infections involve or regularly fail to involve certain animals, and there are even direct contradictions by different observers; little is known of comparative physiology in regard to such chemical details as must have a bearing upon the efficient lodgment of parasites. Secondly, such facts as are available do not suggest any obvious law, but, on the contrary, rather the absence of any general law, and yet the inherent probability that such a law exists and that it will prove of practical sanitary and economic value should act only as an incentive to the securing of further empirical knowledge.

It seems to be true that there is no disease germ which is absolutely confined to one species of host. Until a very few years ago syphilis was supposed to affect man alone. It is now definitely proved that monkeys can be typically infected, and even that the virus may be bred, although without the production of typical general lesions, in rabbits, etc., intermediate between the human source and monkeys. Ocular lesions of gonorrhœa can be produced in practically all animals, and the disease has even been inoculated into the urethra of dogs. To a very large degree, infections known in man occur among the lower animals only when they are in a state of captivity or domestication, and many are extended to them only by direct experimental implantation. Now, while captivity and domestication obviously tend to reduce the general resistance of the organism and to increase the opportunities of infection, it is obvious that a genuine susceptibility to disease, depending upon position in the zoological scale, must affect wild animals.

DIETARY FADS AND FADDISTS.

The question of eating is no new problem. Since the Biblical days when the Hebrews were told to "take no thought" of "what ye shall eat," to the present time, the records of history show that the pleasant exercise of eating has been the subject of much discussion. Fads and faddists have had their little day and have passed, and the student of contemporary medicine cannot fail to be struck with the amazing wealth of suggestions concerning what we should eat and how we should eat it.

For some years past the Yale School of Dietetics has stood in the lime light of publicity, and Professor Chittenden and his students have told us how gluttonous we all are, and how wasteful it has been to eat as our forefathers ate. Recent dispatches indicate that new developments are heralded from New Haven, for the *Yale Alumni Weekly*, according to the *Sun*, says that Professor Fisher, of the Department of Economics, has out-Fletchered Fletcher, and laid down the principle, not of forty chews alone, but of the great value that will accrue from an active thinking of the good things that one has in one's mouth. As a result we shall be able to get along on less food, the meats being reduced to one sixth of their previous amount, and the energy and physical endurance will be increased fifty per cent. Surely this would be a great gain, and the subject is worthy of the consideration of a professor of economics. As to the additional principle laid down by Professor Fisher, we are in hearty accord with him. We have to thank him for the novelty of his suggestion that we should enjoy our food in order to keep well and gain in strength.

The serenity of the followers of the Yale School of Dietetics, however, has not been allowed to

remain undisturbed, for F. G. Benedict, of Wesleyan University (*American Journal of Physiology*, August), has presented a critical and searching review which goes to show that the deductions of Professor Chittenden and Mr. Fletcher contain some noteworthy flaws, and their example cannot be accepted as a reliable guide to conduct. Benedict shows that the results of digestion experiments on soldiers with reduced protein diet disastrously affect the absorption of nitrogenous material from the alimentary canal; that animals fed on diets poor in protein do not thrive so well as on liberal quantities; and, further, that dietary studies all over the world have shown that in communities where productive power, enterprise, and civilization are at their highest man has instinctively and independently selected liberal rather than small quantities of protein.

In discussing the subject of the energy requirements of the body, Benedict, also experimenting on Mr. Fletcher, comes to conclusions at variance with those of Dr. Chittenden, and he holds it as a demonstrated fact that a normally retained bodily weight during a comparatively short metabolism experiment is a deceptive guide as to the food requirements of the individual. He very pertinently maintains as a result of his own experiments and of those of others that the evidence thus far presented by the investigators mentioned is far from sufficient to show that the amounts of protein ordinarily consumed should be permanently and materially diminished. On the contrary, the evidence set forth favors the view that permanent reductions are decidedly disadvantageous and, indeed, not without possible danger.

AN ENGLISH SPEAKING SOCIETY IN MEXICO.

Medical societies whose proceedings are conducted in some other than the language predominant in the countries in which they exist are getting to be fairly numerous. Among the pioneers, we suppose, is the excellent and long established Deutsche medicinische Gesellschaft der Stadt New York. In Canada there is a society of French speaking physicians, but that is not very remarkable in view of the very general employment of the French language in the Province of Quebec, in which the society has its headquarters. If we are not mistaken, there is an Anglo-American Medical Society in Berlin, our British brethren have their own organizations in India, and we have ours in the Philippines. Nevertheless, the formation of an English speaking medical society in Mexico is noteworthy.

We are indebted to Dr. Eugene Stadelman, of Santa Maria del Oro. for a copy of the *Proceedings of the International Medical Association of Mexico* at the first annual meeting, held in January of the present year in Torreón, in the State of Coahuila, a pamphlet of eighty-seven octavo pages. The pamphlet opens with a brief address by the temporary president, Dr. R. D. Robinson, of Torreón. The address is so good that we may well imagine that Dr. Robinson was regularly made president. The truly international character of the association is manifested in the fact that papers were presented by Dr. Hugh Crouse, of El Paso, Texas, and Dr. Ramon Guiteras, of New York. Besides Dr. Robinson, the contributors resident in Mexico were Dr. W. W. Ashurst, of Chihuahua, Dr. W. R. Jamieson, of Torreón, Dr. H. D. Eaton, of Chihuahua, Dr. J. S. Steele, of Monterey, Dr. R. H. L. Bibb, of Saltillo, Dr. C. E. Husk, of Santa Barbara, Dr. D. Rios Zertuche, of Torreón, Dr. A. F. Higgins, of Cuatro Cienegas, Dr. Walter Neumann, of Torreón, Dr. J. A. King, of Santiago Papasquiaro, and Dr. S. H. Hodgson, of Vera Cruz.

All these communications are interesting and valuable. One of them, Dr. Husk's, entitled Experiences in Ranch Obstetrics, gives a graphic picture of the practice of midwifery under trying conditions. Not only were the circumstances often embarrassing to the physician, but also, one would think, highly dangerous to the parturient woman; we must therefore wonder that Dr. Husk "never saw a case of true puerperal infection in ranch practice in Mexico." Much practical good may be expected of the International Medical Association of Mexico, including, it is to be hoped, authoritative contributions to our knowledge of the medicinal plants of Mexico and their therapeutical properties.

"SAVORY DUCK."

Surely this is an attractive name for a cheap article of food. The product is known also as "Yorkshire duck" and "faggot." It may be savory, but it is not duck; on the contrary, it seems to be a compound of diseased livers and sheep's lungs. According to the *Manchester Courier's* summary (cited in the *Lancet* for September 29th) of a paper read by Mr. James McPhail, M. R. C. V. S., chief food inspector at Hull, at a recent conference of sanitary inspectors held in Blackpool, the butcher who caters for the poor in England resorts to such tricks as are indicated in the following passage: "If a liver had an abscess in it the general way was to cut it out and

use the remainder. Immature tapeworm cysts were called blebs. These were burst, but the heads, which developed into tapeworms, were allowed to remain." The account goes on to say that livers loaded with flukes were used, and the sheep's lungs contained, without exception, "thousands of microscopic worms and their eggs."

The *Lancet* declares—and we readily believe—that an expensive system of food inspection is maintained in England, but it can only deplore the fact that in spite of that system the conditions described are those "under which the public are permitted, or rather are compelled, to purchase their food." The results of eating such articles of diet, says our contemporary, are "neither so immediate nor so readily traced to their source as to cause any urgent demand for reform on the part of those most affected," and it seems inclined to favor the municipal ownership of slaughter houses. We are by no means confident that such ownership would work a thorough and lasting reform in butchers' methods, but it does seem as if inspection might prove adequate.

The practices that Mr. McPhail exposed are probably not confined to the field of his activities or, indeed, to any one country. They are quite as repulsive as anything that has been alleged concerning the Chicago packing establishments, and doubtless even more calculated to give rise to diseases in human beings, for the products must sometimes escape the thorough cooking that would perhaps render them innocuous. Possibly, after all, "savory duck" is no more unwholesome than many of the sausages that are to be found in the markets of the world, but Mr. McPhail's exposures ought to lead to renewed vigilance everywhere in connection with the preparation of table "delicacies."

ENDOTRACHEAL GOITRE.

The occurrence of a goitrous growth within the larynx or trachea is apt to present some practical problems, but it is chiefly of interest from the anatomical point of view. At a recent meeting of the Basle Society of Medicine (*Presse médicale*, September 15th) Professor Enderlen showed a patient who had been the subject of such a growth, and took occasion to present a summary of the recorded instances of similar goitres so far as he had been able to find the histories, fifteen in number.

It appears from Enderlen's study that these tumors are far more common in females than in males; twelve of the fifteen cases were in women or young girls and only three in individuals of the male sex. In age the patients ranged from fifteen to forty years. The known duration of the growth varied from a few weeks to fifteen years, but, as the author remarks, it is very difficult to fix the date of the tumor's appearance, for it may be a long time before the symptoms are sufficiently pronounced to attract the patient's attention. He thinks, however, that the majority of the cases developed at the age of puberty.

In five instances the growth was seated exclusively on the posterior wall of the larynx or trachea, in six its attachment extended thence to one or both lateral walls, in two it was limited to one side, and in one it was attached to the anterior wall alone. There remains a case in which Radestock observed such a growth at the entrance to the right bronchus, but doubt has been cast upon that case by Paltauf. The tumor is generally rounded or cylindrical, the base of implantation is broad, and the surface is smooth and consists of intact mucous membrane. In eleven of the fifteen cases the thyreoid gland itself was enlarged. Almost all the specimens of endotracheal goitre examined microscopically have been found to be of the colloid variety.

The only symptom recorded is dyspnœa, slight at first and increasing very gradually until it becomes so urgent as to require operative intervention. Dyspnœa following such a course, especially if observed in a young person, is almost enough in itself to establish the diagnosis, but laryngoscopic examination suffices to set any doubt at rest. If the tumor is small, enduring relief may sometimes be secured by means of thyreoid feeding. The proper operative treatment is by ablation of the tumor after tracheotomy or laryngotracheotomy; an endolaryngeal operation is fraught with many dangers.

As was remarked at the outset, the pathogeny of these tumors is their main point of interest. It has been supposed that they are outgrowths of the thyreoid gland which by some means have made their way into the trachea, but this conjecture is not supported by the discovery of any defect in the trachea by which the entrance could have been effected. The theory of proliferation of included embryonic thyreoid tissue seems therefore to be justified, as has been maintained by Bruns, Wölfler, and others. According to this view, then, these growths are the product of a pathological process grafted on a congenital malformation.

News Items.

NEW YORK CITY AND STATE.

Changes of Address.—Dr. Albert S. Morrow, to 151 West Seventy-second Street, New York.

The Falkirk Sanatorium at Central Valley, N. Y.—We are informed that this sanatorium, for several years under the management of the late Dr. James F. Ferguson, has been purchased by Dr. Carlos F. MacDonald.

Personal.—Dr. Theodore I. Townsend, for several years an assistant physician at the Utica State Hospital for the Insane, has resigned to accept a position as first assistant in the insane department at the Dannemora State Hospital.

The Quiz Medical Society of New York.—The twenty-ninth regular meeting of the Quiz Medical Society will be held at the University Club, on Saturday, October 27, 1906, at 7 p.m. Dr. William A. Downes will read a paper on the subject, The Surgical Treatment of Exophthalmic Goître.

The Medical Society of the County of Jefferson, N. Y.—At a meeting of this society held at Watertown, on Thursday, October 11th, Dr. Henry L. Elsner, of Syracuse, read a paper on Heart Syphilis, Vascular Spasms and Anomalous Conditions Associated with Cardiac Vascular Lesions. Dr. Gilbert Cannon, of Watertown, presented an interesting paper on Squint.

The Medical Society of the County of Oneida, N. Y.—The programme for the quarterly meeting of this society, held at Rome, on Tuesday, October 9th, included the following papers: Renal Irritation and Insufficiency, by Dr. A. A. Gillette, Rome; Tetanus, by Dr. M. C. Montgomery, Rome; Double Mastoiditis with Infection of Jugular Bulb on One Side, by Dr. J. E. Gage, Utica; Librarian's Report, by Dr. Smith Baker, Utica.

The Medical Society of the County of Seneca, N. Y.—At the annual meeting of this society, held at the Willard State Hospital, Willard, on Thursday, October 11th, the election of officers resulted as follows: President, Dr. Thomas J. Currie, Willard; vice-president, Dr. Lester W. Bellows, Waterloo; secretary, Dr. R. E. Doran, Willard; treasurer, Dr. Frederick W. Lester, Seneca Falls; board of censors, Dr. Robert Knight, Seneca Falls; Dr. John F. Crosby, Seneca Falls; and Dr. Charles S. Barnes, Ovid.

The Medical Association of the Greater City of New York.—The following programme was arranged for a meeting of this association held on Monday, October 15th: The Therapeutic Uses of Thyreoid, by Dr. Oliver T. Osborne, Yale University; Parathyreoids, by Dr. James J. Walsh, New York; Uses of the Adrenal Extractives, by Dr. C. E. de M. Sajous, Philadelphia; Organotherapy from a European Point of View, by Dr. Arnold Lorand, Carlsbad. Discussion by Dr. Egbert Le Fevre, Dr. S. P. Beebe, Dr. C. Am Ende, and others.

The Medical Society of the County of Kings.—The programme for a meeting of the society held on Tuesday, October 16th, included the presentation of the medical library (4,000 volumes) of the late Dr. Willard Parker, a gift to the library of the Medical Society of the County of Kings from his son, Dr. Willard Parker, of New York city, by Dr. James Peter Warbasse, directing librarian; and a paper on The Treatment of Certain Chronic Infectious Processes, by Dr. Lewellys F. Barker, professor of medicine, Johns Hopkins University.

The New York Academy of Medicine.—At a meeting held on Thursday, October 18th, the programme consisted of the presentation by Dr. A. Jacobi of a portrait of the late Dr. Paul F Mundé and the Wesley M. Carpenter lecture by Dr. Harvey G. Cushing, of Baltimore. The following programme was prepared for a meeting of the *Section in Ophthalmology*, held on Monday evening, October 15th: Presentation of patients. Case of High Myopia. Operation with Very Excellent Result, by Dr. W. E. Lambert; Presentation of new instruments: A New Gas Ether Inhaler, by Dr. Victor C. Pedersen; Presentation of specimens: (a) Foreign Body (Piece of Percussion Cap) in the Globe, by Dr. J. Herbert Claiborne; (b) Sarcoma of Choroid, in which Transillumination was Successfully Employed, by Dr. W. B. Marple; Reports of Cases: Case of Infection After Cataract Extraction, by Dr. T. R. Pooley; Some Observations on Ophthalmic Hospitals and Ophthalmic Work in Europe, by Dr. E. Gruening; Paper: The Eye Symptoms of Trichinosis, by Dr. Frank J. Parker; Discussion by Dr. George A. Tuttle, Dr. David Bovaird, Jr., and others.

The programme arranged for a meeting of the *Section in Medicine*, held on October 16th, was as follows: Clinical Reports; A Note on the Treatment of Pseudomembranous Colitis, by Dr. H. S. Carter; Papers: Comparative Actions of Digitalis and Strophanthus, by Dr. R. A. Hatcher; Discussion by Dr. E. P. Shelby, Dr. George B. Wallace, and others; The Bacteriology of Gonococcus Infections, by Dr. T. Flournoy; Discussion by Dr. Charles Norris, Dr. E. Libman, and others; Gonococcus Endocarditis, with Report of a Case and Exhibition of Specimens, by Dr. Morris Manges.

The following was the order for a meeting of the *Section in Genitourinary Diseases*, held on October 17th: Presentation of Patients: Two Cases of Unilateral Septic Hæmorrhagic Nephritis, by Dr. Joseph Wiener; One Case of Hæmaturia (Filariasis), by Dr. F. Tilden Brown; Paper: Urine Separation from the Two Kidneys with Luy's Apparatus, by Dr. E. Dunning Barringer; Presentation of Instruments: New Ether Inhaler, by Dr. V. C. Pedersen; New Instruments, by Dr. F. Tilden Brown.

The *Section in Laryngology and Rhinology* will hold a meeting on Wednesday, October 24th, with the following programme: Presentation of Patients: A Case of Rhinoscleroma Treated by the X Ray, by Dr. M. J. Ballin; An Obscure Case of Frontal Sinus Disease for Diagnosis, by Dr. S. McCullagh; Unilateral Empyema of the Accessory Sinuses of the Nose Complicated by Orbital Abscess, by Dr. John Guttman; Paper: The Cold Wire Snare in the Removal of Faucial Tonsils, by Dr. H. P. Moseley; New Instruments and Specimens: A New Tonsil Snare, by Dr. H. P. Moseley.

The following is the order for a meeting of the *Section in Obstetrics and Gynæcology*, to be held on Thursday, October 25th: Presentation of Patients; Demonstration of Specimens; Paper: Description, with Stereopticon Views, of Special Features of New Woman's Hospital, by Dr. Le Roy Broun: General Discussion on The Pyelitis of Pregnancy, introduced by Dr. E. D. Cragin, and continued by Dr. Sondern, Dr. Smith, Dr. Lobenstein, Dr. Taylor, Dr. Marx, Dr. Brodhead, Dr. Edgar, and others; New Instruments: A New Gas and Ether Inhaler, by Dr. Victor Pedersen.

Society Meetings for the Coming Week:

MONDAY, *October 22nd.*—Medical Society of the County of New York (annual); Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement; Baltimore Medical Association.

TUESDAY, *October 23rd.*—New York Dermatological Society (private); New York Medical Union (private); Metropolitan Medical Society of New York (private); Buffalo Academy of Medicine (Section in Obstetrics and Gynæcology); Richmond, Va., Academy of Medicine and Surgery.

WEDNESDAY, *October 24th.*—New York Academy of Medicine (Section in Larynology and Rhinology); New York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Philadelphia County Medical Society.

THURSDAY, *October 25th.*—New York Academy of Medicine (Section in Obstetrics and Gynæcology); New York Orthopædic Society; Brooklyn Pathological Society; New York Celtic Medical Society (private); Roxbury, Mass., Society for Medical Improvement (private); Pathological Society of Philadelphia; Church Hill Medical Society of Richmond, Va.; Brooklyn Society for Neurology.

FRIDAY, *October 26th.*—New York Clinical Society (private); New York Society of German Physicians; Academy of Pathological Science, New York; Yorkville Medical Association, New York (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

SATURDAY, *October 27th.*—New York Medical and Surgical Society (private); Harvard Medical Society, New York (private); Lenox Medical and Surgical Society, New York (private); West End Medical Society, New York (private).

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending October 13, 1906:

	October 13. Cases.	October 13. Deaths.	October 6. Cases.	October 6. Deaths.
Typhoid fever	113	15	121	25
Smallpox	..	..	..	..
Varicella	9	..	11	..
Measles	50	2	30	2
Scarlet fever	73	1	49	3
Whooping cough	33	11	32	15
Diphtheria	205	22	199	22
Tuberculosis pulmonalis	390	169	346	154
Cerebrospinal meningitis	5	4	12	11
Totals	878	224	800	232

PHILADELPHIA AND THE MIDDLE STATES.

Saint Agnes' Hospital.—Dr. H. Augustus Wilson has been appointed orthopædic surgeon to Saint Agnes' Hospital, and will immediately organize a department of orthopædics in that institution.

The Reading, Pa., Sanatorium for the Treatment of Tuberculosis, which has been doing ward and dispensary work for two years, has appointed a committee to select a site and procure plans for the erection of buildings for an outdoor hospital for the treatment of tuberculosis.

The University of Pennsylvania.—The opening exercises of the Medical Department of the University of Pennsylvania were held on Friday evening, September 28, 1906. Dr. Edward Martin delivered the introductory address. Light refreshments were served. There are about one hundred and eighty members of the freshman class.

St. Luke's Hospital, South Bethlehem, Pa.—The programme for the celebration of Hospital Day, held on Thursday, October 18th, consisted of the annual address by Professor Charles Baskerville, of the College of the City of New York, and the graduating exercises of the class of 1906 of the training school for nurses.

The Union County (N. J.) Medical Society.—The regular quarterly meeting of this society was held at Plainfield, N. J., on Wednesday, October 10th. After the presentation of several clinical cases the society discussed at some length the subject of Insurance Examination Fees, and finally endorsed the stand taken by the State society in this matter in demanding from old line companies a minimum fee of $5.

Charitable Bequests.—In adjudicating the estate of Jacob U. Freed, the Orphans' Court of Philadelphia made the following awards: Old Men's Home, $1,000; Protestant Episcopal Home of Rest for the Aged, $1,000; Protestant Episcopal Hospital, $500; Baptist Home, $500. By the will of Marx Wineland, of Frostburg, Md., the Jewish Foster Home, the National Farm School, at Doylestown, Pa., and the Jewish Hospital of Philadelphia, each receive $500.

The Cumberland County (N. J.) Medical Society held its semiannual meeting at Bridgeton, on Tuesday, October 9th. The following papers were read: The Repair of Cervical and Perineal Lacerations, by Dr. C. W. Wilson; The Treatment of Acute General Peritonitis, by Dr. E. S. Fogg; and Uterine Hæmorrhage, by Dr. Theodore Erek, of the Philadelphia Polyclinic. Dr. E. S. Corson, in a paper entitled Reminiscenses of My Medicine Case, gave some of his experiences as a medical missionary in Burmah.

Scientific Society Meetings in Philadelphia for the Week Ending October 27, 1906.—Monday, October 22nd, Mineralogical and Geological Section, Academy of Natural Sciences. Tuesday, October 23rd, Philadelphia Neurological Society. Wednesday, October 24th, Philadelphia County Medical Society. Thursday, October 25th, Pathological Society; Entomological Section, Academy of Natural Sciences; Section Meeting, Franklin Institute. Friday, October 26th, South Branch, Philadelphia County Medical Society; Northern Medical Association.

The Berks County (Pa.) Medical Society.—At the October meeting of this society, held at Reading, Dr. S. G. Burkholder read a paper advocating an organization of physicians which should collect the names of all persons who refuse to pay the physician for his services. Dr. Burkholder was requested by the society to prepare a plan for such an organization and present it at the November meeting of the society. Dr. James R. Gerhard reported a gun shot injury in which the tendo Achillis was completely severed. Reunion of the ends of the tendon was secured by absolute immobilization of the parts. Dr. F. W. Frankhauser read a report of the meeting of the Medical Society of the State of Pennsylvania. As the State society is to hold its annual meeting in 1907, at Reading, Dr. Frankhauser was elected chairman of the committee of arrangements for that occasion.

Medicochirurgical College of Philadelphia.—The opening exercises for the session of 1906-1907 of the Medical, Dental, and Pharmaceutical Departments of the Medicochirurgical College of Philadelphia, were held on Monday evening, September 24th. Dr. John V. Shoemaker delivered the introductory address on The Scientific Foundation of Modern Treatment of Disease. The Medicochirurgical Hospital has just awarded the contract for a seven story addition, to be situated on the east side of Eighteenth Street, north of Cherry Street. The estimated cost is $36,000.

The College of Physicians.—At the meeting of the College of Physicians of Philadelphia, held Wednesday evening, October 3, 1906, Dr. Charles P. Noble read a paper entitled Hospital Management, Certain Questions of Interest to the Medical Profession, Hospital Superintendents, Superintendents of Training Schools, Head Nurses and Directors of Hospitals. Dr. W. W. Keen and Dr. W. M. L. Coplin read a paper entitled Sacrococcygeal Tumor (Teratoma), with a Sinus Having the Structure of the Trachea Communicating with the Rectum. Mr. Jonathan Hutchinson, of London, England, was elected an associate fellow. The honorary librarian reported the addition of 128 volumes to the library during the summer months. The following programme was offered at the meeting of the *Section in General Medicine,* held on Monday, October 8, 1906: Dr. Henry D. Jump, A Case of Typhoid Fever with Unusual Enlargement of the Spleen; Dr. J. Dutton Steele, The Muscle Nucleus Test in Pancreatic Disease; Dr. Joseph Sailer and Dr. Clifford B. Farr, Methods of Altering the Secretion of Pepsin; Dr. Frederick Fraley, A Study of Five Hundred Cases of Pleurisy Occurring at the Pennsylvania Hospital; Dr. Herman B. Allyn, The Treatment of Acute Gastritis; Dr. Judson Daland, Some Clinical Aspects of Indicanuria.

The Health of Philadelphia.—During the week ending October 6, 1906, the following cases of transmissible disease were reported to the Bureau of Health:

	Cases.	Deaths.
Malarial fever	1	0
Typhoid fever	87	9
Scarlet fever	24	1
Chickenpox	4	0
Diphtheria	72	9
Cerebrospinal meningitis	1	1
Measles	8	0
Whooping cough	16	7
Tuberculosis of the lungs	69	45
Pneumonia	35	27
Erysipelas	1	0
Septicæmia	2	0
Cancer	6	18

The total mortality was 402, in an estimated population of 1,469,126, corresponding to an annual death rate of 13.48 in a thousand of population. The total infant mortality was 96; under one year of age, 74; between one and two years of age, 22. There were 40 stillbirths, 25 males and 15 females. The following deaths from other transmissible diseases were reported: Tuberculosis, other than tuberculosis of the lungs, 11; diarrhœa and enteritis, under two years of age, 22; puerperal fever, 5. The temperatures as recorded by the weather bureau were rather high, as was the relative humidity. There was no clear day during the week. The total precipitation was 2.65 inches.

BOSTON AND NEW ENGLAND.

Personal.—Dr. George V. N. Dearborn, professor of physiology in Tufts College Medical School, has been appointed lecturer and instructor in the relations of body and mind in the Sargent School of Physical Education at Cambridge, Mass.

The Vermont State Medical Society.—The election of officers at the annual meeting held at Barre on October 11th and 12th, resulted as follows: President, Dr. D. C. Hawley, of Burlington; vice-president, Dr. C. W. Strobell, of Rutland; secretary, Dr. George H. Gorham, Bellows Falls; treasurer, Dr. B. H. Stone, of Burlington; auditor, Dr. J. H. Blodgett, Saxton's River. Before adjourning the delegates put themselves on record as being opposed to physicians doing contract work for fraternal or insurance organizations at rates less than those received in private practice.

The Tolland County (Conn.) Medical Association.—The programme arranged for the one hundred and fourteenth semiannual meeting, held at Stafford Springs, on Tuesday, October 16th, included an essay by Dr. W. L. Higgins, of South Coventry, and remarks on The Care and Treatment of Epileptics, by Dr. Edwin A. Down, of Hartford. The officers of the society are: President, Dr. F. W. Walsh, Rockville; vice-president, Dr. Thomas F. Rockwell, Rockville; secretary, Dr. T. F. O'Loughlin, Rockville.

BALTIMORE AND THE SOUTH.

The George Washington University, in the City of Washington.—At the autumn convocation of this university, held on Wednesday, October 17th, Dr. Carl Beck, of New York, delivered an address, on The Influence of American Surgery.

Johns Hopkins Hospital.—The trustees have accepted the resignation of Dr. C. H. Bunting, assistant resident pathologist, who has accepted the chair of pathology at the University of Virginia. Dr. G. H. Whipple was appointed to the vacancy. The resignation of Miss E. Blanche Stirling, assistant in medical gymnastics, was also accepted.

The Cabell County (W. Va.) Medical Society.—The programme for a meeting of this society, held at Huntington, on Thursday, October 11th, included a paper entitled: Some Remarks on the Management of Labor, by Dr. William C. McGuire, of Huntington, and report of clicinal cases by Dr. I. R. LeSage.

West Virginia Personals.—Dr. J. M. Lovett has moved from Rock Cave, W. Va., to Huntington. Dr. Oscar A. Kent is in New York, where he will remain for three months, taking a postgraduate course. Dr. C. D. Rawson has recently located in Huntington, and formed a partnership with Dr. R. E. Vickers.

The Kentucky State Medical Association.—At the annual meeting of this association, held at Owensboro, on October 11th and 12th, the election of officers resulted as follows: Dr. D. M. Griffith, of Owensboro, president; Dr. A. T. McCormick, of Bowling Green, secretary; Dr. W. B. McClure, of Lexington, treasurer; Dr. J. P. Vaught, of Richmond, orator in medicine; and Dr. J. C. Quinn, of Henderson, orator in surgery. The next annual meeting will be held at Louisville.

Personal.—Dr. Albert S. Priddy, of Bristol, Tenn., has been appointed superintendent of the Southwestern State Hospital for the Insane, at Marion, Va., to succeed Dr. Robert J. Preston.

A dinner was tendered the eminent anatomist, Dr. Franz Keibel, of the University of Freiburg, Germany, on Friday evening, October 12th, at the Johns Hopkins Club, Baltimore, by seven students of the Johns Hopkins Medical School who have been his students in Germany during one of the summer vacations within the last few years. Dr. Keibel is studying the laboratory methods in use at the medical schools of this country.

Dr. Henry M. Hurd, Superintendent of Johns Hopkins Hospital and Professor of Psychiatry at the Johns Hopkins Medical School, has been granted by the trustees leave of absence for one year. Dr. Hurd will, it is understood, travel on the continent of Europe for his health, which has of late been somewhat impaired. During his absence Dr. Rupert Norton will assume Dr. Hurd's duties. Dr. Norton was at one time for a period of two years house physician at Johns Hopkins Hospital.

The Medical Society of Virginia.—At the annual meeting, held at Charlottesville, on October 9th-12th, the election of officers resulted as follows: President, Dr. Paul Brandon Barringer, Charlottesville; vice-presidents, Dr. B. Brown Bagly, Bruington; Dr. Frank Horace Hancock, Norfolk; Dr. Charles Frederick Rinker, Upperville; recording secretary, Dr. Landon B. Edwards, Richmond; corresponding secretary, Dr. John F. Winn, Richmond; treasurer, Dr. R. M. Slaughter, Theological Seminary; chairman executive committee, Dr. Paulus A. Irving, Richmond; chairman committee on nomination of applicants for fellowship, Mr. William D. Turner, Shoalbay. The report on medical examiners' fees for life insurance companies and benevolent associations, submitted by a committee appointed at the Norfolk meeting last year, was adopted. This report fixes the minimum fee at $5 by members of the society where uranalysis is required, on policies of $5,000 or less; a minimum fee of $3 on all policies of $3,000 or less, where this analysis is not required.

CHICAGO AND THE WEST.

The Hennepin County (Minn.) Medical Society.—The programme for a meeting held at Minneapolis, on Monday evening, October 15th, included a paper on The Prevention and Treatment of Cancer, by Dr. R. E. Farr, and an illustrated lecture on The Early Diagnosis of Cancer, by Dr. Frank Corbett.

The Detroit Academy of Medicine.—After an entertainment given on October 9th, by the retiring president, Dr. Wadsworth Warren, the academy elected the following officers: President, Dr. Delos L. Parker; vice-president, Dr. Andrew P. Biddle; secretary, Dr. Harrison D. Jenks; director for three years, Dr. Arthur H. Rigg.

The Clermont County (Ohio) Medical Society.—The programme for the annual meeting of this society, held at Batavia, on Wednesday, October 10th, included papers by Dr. E. M. Brown, of Amelia, and Dr. T. A. Mitchell, of Owensville, and addresses by Dr. J. D. Abbott, of Bethel, and Dr. J. L. Formorin, of Marathon. Dr. Philip Kennedy, of Laurel, president; Dr. G. S. Van Horn, of Batavia, secretary.

Personal.—Dr. Ernst Wertheim, professor of gynæcology at the University of Vienna, was in Chicago last week, as the guest of the Chicago Gynæcological Society. On Wednesday evening he was to read a paper before the Chicago Medical Society, on the Radical Abdominal Operation in Carcinoma of the Cervix Uteri, which was to be discussed by Dr. Thomas S. Cullen and Dr. John C. Clark, of Baltimore, and Dr. X. O. Werder, of Pittsburgh, Pa. On Thursday morning he was to demonstrate, at the Presbyterian Hospital, his methods of operating in cases of advanced cancer.

Statement of Mortality of Chicago for the Week Ending October 6, 1906, compared with the preceding week and with the corresponding week of 1905. Death rates computed on United States Census Bureau's figures of midyear population—2,049,185 for 1906, 1,990,750 for 1905:

	Oct. 6, 1906.	Sept. 29, 1906.	Oct. 7, 1905.
Total deaths, all causes	566	538	472
Annual death rate in 1,000	14.40	13.69	12.36
Sexes—			
Males	321	322	275
Females	245	216	197
Ages—			
Under 1 year of age	142	148	105
Between 1 and 5 years of age	63	45	31
Between 5 and 20 years of age	44	32	39
Between 20 and 60 years of age	223	216	204
Over 60 years of age	94	97	93
Important causes of death—			
Apoplexy	8	6	10
Bright's disease	27	47	34
Bronchitis	11	7	7
Consumption	55	57	52
Cancer	26	22	27
Convulsions	7	3	9
Diphtheria	11	7	8
Heart diseases	61	34	33
Intestinal diseases, acute	103	99	65
Measles	1	1	0
Nervous diseases	18	16	22
Pneumonia	51	37	46
Scarlet fever	3	8	2
Suicide	6	12	6
Violence (other than suicide)	34	42	41
Whooping cough	2	9	1
All other causes	134	122	103

October, the most healthful of all the months, shows the effects of the September heat this year. The total, 566 deaths, reported during the week are 28 in excess of those of the previous week and 94 more than those of the corresponding week of 1905. The principal increases are in deaths from heart disease—61, as against 34 the week previous—and in pneumonia deaths, 51 against 37. The all-causes mortality rate of the week, 14.4 in a thousand, is 12.3 per cent higher than the average October rate of the last decade, which was 12.82 in a thousand.

GENERAL.

A Military Hospital Burned.—On the night of October 13th, the military hospital at the presidio in Monterey, Cal., was consumed by fire. Although the building, a large two story structure, was crowded with patients, some of whom were critically ill, all were removed safely. The fire was caused by the explosion of a gasolene tank at the rear of the building.

Pith of Current Literature.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

October 13, 1906

1. Hæmorrhage in the Newborn, By H. McClanahan.
2. Benign Cystic Epithelioma, By John V. Shoemaker and L. Napoleon Boston.
3. A Study of the Blood in Banti's Disease Before and After Splenectomy, By Walter L. Biering and Enfin Egdahl.
4. Vital Points in the Technics of Suprapubic Enucleation of the Prostate for Benign Enlargement of that Gland, By E. Henry Fenwick.
5. Indications for Prostatectomy and the Results of the Operation, By Alexander Ferguson.
6. Gangosa, By O. J. Mink and N. T. McLean.
7. The Bacteria in Scarlatinal and Normal Throats, By Gustav Ruediger.
8. The System of Personal Identification by Finger Prints Recently Adopted for the U. S. Army, By J. R. Kean.
9. The Treatment of Fractures of the Medulla, By Joseph Ransohoff.
10. The Open Air Treatment of Pneumonia, By W. P. Northrup.
11. Acute Nonsuppurative Encephalitis in Children, By Isaac A. Abt.

1. Hæmorrhage in the New Born.—McClanahan reminds us that hæmorrhage in the new born is either traumatic or spontaneous. When it occurs during the first twenty-four hours after delivery it is usually traumatic, and this class includes cephal chæmatomata, hæmatomata of the sternocleidomastoid muscle, hæmorrhage beneath the skin, intracranial, intraabdominal, and intrathoracic. In spontaneous hæmorrhage the blood may be from any mucous surface or beneath the skin, and almost all cases begin within the first ten days of life. They consist of hæmorrhage from the umbilical cord, intestinal, from the mouth, stomach, conjunctiva, ears, nose, ecchymosis, lungs, vagina. The prognosis is very grave. The hæmorrhage does not appear to bear any relation to hæmophilia, and is a comparatively rare disease. The ætiology is obscure, and hereditary syphilis is considered an important predisposing cause. But the real important cause seems to be probably some change in the blood or bloodvessels, a specific condition. The important principles of treatment consist in control of the hæmorrhage, as far as this is possible, in aiding the nutrition of the child in every way, and in maintaining the body heat.

2. Benign Cystic Epithelioma.—Shoemaker and Boston state that they have collected from the literature references to but twenty-four reported cases and special articles discussing benign cystic epithelioma. They report a case of their own, the growths occupying the right arm, while the general condition was that of moderate secondary anæmia which improved under treatment.

3. A Study of the Blood in Banti's Disease Before and After Splenectomy.—Biering and Egdahl report a case of Banti's disease in which splenectomy was performed. The results obtained in the study of the blood of the patient before operation showed anæmia of secondary type, with a low proportion of hæmoglobin and leucopenia. After operation there was first a slight fall in red cells, then a rise, a leucocytosis reaching its maximum twelve days after operation and characterized by a relative increase in the mononuclear leucocytes, especially the large mononuclears. There was before and after splenectomy an absence of myelocytes and a scarcity of nucleated red cells.

4. Vital Points in the Technics of Suprapubic Enucleation of the Prostate for Benign Enlargement of That Gland.—Fenwick suggests that if a medium or large projecting lateral lobe be present, that it be separately enucleated by an anteroposterior incision, and that the remainder of the prostate be removed by a method described by him in 1904, which consists in starting the separation from the prostatic urethra. Thus the forefinger is inserted into the prostatic urethra up to the first joint, the point of the finger is then bent and plunged sideways through the mucous membrane, which in the soft elastic prostate gives readily before the pressure. At once the finger finds itself between the tough capsule of the prostate and the contained adenomatous masses; traveling on without much opposition, the entire lobe is enucleated and generally stripped off the urethra. Especial care is taken with the floor of the urethra and with the opening of the ejaculatory ducts to leave the former intact and attached to its bed. Usually the adhesions between the lateral walls of the urethra and the lateral lobe are very dense; that part of the canal comes away with the lobe, but the floor is preserved. The lobe is now very gently detached from the triangular ligament, so as not to tear or bruise the membranous urethra, and the lobe being free, it is pushed or pulled into the bladder; the opposite lobe is removed in a similar way. The finger finally smooths down the mucous membrane in the prostatic urethra, leaving the vesical ring clear and free from projecting tags. It heals by the structure being lined with part of the original prostatic urethra.

5. Indications for Prostatectomy and the Results of the Operation.—Ferguson says that the indications for removal of the prostate are based on the pathological conditions present in the gland as manifested by symptoms and signs relative to obstruction to urination. This obstruction may be in any part of the course of the prostatic urethra by hypertrophy of the prostate gland so as to prevent the free exit of urine from the bladder, resulting finally in deleterious results on the bladder, kidneys, and rectum. Prostatectomy is not always called for on account of the large size of the gland, for it may be very large and still offer no obstruction to micturition. After reviewing the literature and giving detailed statistic facts the author describes his method of operation through the perinæum, with the postoperative treatment of drainage which, the author advocates, should be through the penis.

6. Gangosa.—Mink and McLean describe a disease endemic in the Ladrone and Caroline islands, called gangosa, which is characterized by a destructive ulceration, usually beginning on the soft palate pillars, or mouth, and extending by continuity to the hard palate and nasal cavity, larynx, and even the face. Such active ulceration is followed after a variable period by cicatrization or chronic ulceration, while mutilation always results. No cases have been observed in whites, cases in persons of united white and native blood are infrequent, while the pure blood natives suffer much. There is no evidence showing that heredity plays any part, and the theory of eating decomposed or very salty fish is disproved by the authors, nor do they believe it to be a late manifestation of syphilis, or yaws. But they believe that there is a specific infecting agent, the nature of which is as yet undetermined, and it is believed that in the transmission of the disease flies are an important factor. The contagiousness had been recognized by the Spaniards in Guam, who had established a colony for the segregation of these patients, which was discontinued by the Americans. There seems to be good evidence that this abandonment of segregation has increased the prevalence of the disease. There is little doubt that treatment in the early stages limits the progress of the disease, and such treatment is essentially local and should aim to destroy the affected area: Tincture of iodine, lunar caustic, phenol and chromic acid have been used, together with an aseptic mouth wash; potassium permanganate has proved the most advantageous deodorants.

8. **The System of Personal Identification by Finger Prints Recently Adopted for the United States Army.**—Kean describes this new system of identification by finger prints which will be put in operation in the very near future. It will be very valuable in obviating the necessity of much correspondence and collection of evidence at present required to prove identity in cases coming before the War Department and the Pension Bureau. Unknown dead, brought from battlefields or who die in hospitals, can in this way give a record which will lead to their identification.

9. **The Treatment of Fracture of the Patella.**—Ransohoff sums up his paper as follows: 1. Fractures of the patella are often partial and subperiosteal and require no operative treatment, even if recognized. 2. A master of aseptic surgery may operate in every case of patella fracture, where separation of the fragments can easily be recognized. 3. Where the diastesis indicates the involvement of the lateral expansions of the quadriceps, the indications for operations are plain, unless contraindicated by age, impossibility of securing perfect asepsis, skilled assistance, etc. 4. The proper time for operation is the first week. 5. The operation ordinarily indicated is the open operation with suture of the lateral tears and fixation of the fragments with one or other method. 6. In old standing cases with very wide diastasis of the fragments, excision of the latter and suitable tendon plastic will probably give better results than bone suture. 7. The knee joint will always remain for a physician who only occasionally does surgery a most dangerous field for operative interference. For him a fracture of the patella should remain a *noli me tangere.*

10. **The Open Air Treatment of Pneumonia.**—Northrup gives as his opinion that the patients most favorably affected by open air treatment are those with severe poisoning, with delirium, partial cyanosis, or deep stupor. In his experience all patients fare better in cool fresh air, which can be secured by screening off a portion of a room by an open window. None have been injured, in his observation, and a few have been much aided and possibly saved by the cold air treatment. If pneumonia, due to an infecting agent, is benefited by the treatment one may be easily led to try it for other infectious diseases. As a matter of fact, he has tried it for many others, including typhoid and severe bronchitis, whooping cough with bronchitis and convulsions, with excellent results. It seems to him the ideal treatment for all forms of septic fevers. The only regulation is to make the patients comfortable and especially to keep their feet warm. The ears, nose, and hands may get cold without harm.

MEDICAL RECORD.

October 13, 1906

1. The Bath Treatment of Typhoid Fever of Private Practice, By SIMON BARUCH.
2. The Pathogenesis and Therapeutics of Cancer, By ROBERT BELL.
3. The Operative Treatment of Acute Gonorrhœal Epididymitis, By FRANCIS R. HAGNER.
4. The Effects of Absinthe, By EMMA E. WALKER.
5. Röntgenography of the Stomach, By MAX EINHORN and L. G. COLE.
6. Report of Three Cases of Potts' Disease and One Case of Coxalgia Occurring in Adults and Presenting Unique Features, By J. TORRANCE RUGH.

1. **The Bath Treatment of Typhoid Fever in Private Practice.**—Baruch reviews the history of the use of cold baths in the treatment of typhoid fever as advocated by Brand, of Stettin, Germany. The writer states that the ideal cold bath as devised by Brand is a preventive measure and not a symptomatic one. Cold baths should not be regarded as cooling procedures, a fallacy arising from regarding hyperpyrexia a prominent cause of death in typhoid fever, but which is due to toxæmia. Cold baths prevent lethal complications by reason of their sustaining effects upon the central nervous and circulatory systems. Let this truth become the ruling idea in typhoid fever, says the author, and let the accepted truth that therapeutic results are in proportion to the dosage of the remedial agent be added, and the aggregate outcome of this much to be desired consummation will be a rational application and consequent cessation of disputes about modes of bathing. Whether the ideal Brand bath is to be adopted in the concrete case, or some milder method, whether so called sponging, ablution, affusion, compresses, packs, whole baths or half baths, brief or prolonged, higher or lower temperatures are to be applied, must depend upon the individual case.

2. **The Pathogenesis and Therapeutics of Cancer.**—Bell thinks that we may now assume that cancer is not due to a parasite, and we have to search for an explanation of the incidence of cancer. If, therefore, a person is a gross feeder, and more so if he indulges to excess in animal food, and if there is superadded a constipated habit, which has such a pernicious effect upon the thyreoid gland, we may conclude there are present the three most important factors whose combined influence is sufficient to provoke a tendency to the development of cancer. The first principle, then, is in the treatment of cancer to insist upon a complete daily evacuation of the bowels. Second, the diet must be restricted to the actual requirements of the body and the capabilities of the digestive organs; butcher meat must be barred and a vegetarian diet be relied upon to a large extent. Thirdly, the defective action of the thyreoid gland must be supplemented by the administration of the gland of healthy animals, or the active principle of the gland, at least three times daily. Fourthly, as saccharomyces are invariably present in the blood in cancer subjects, and as these act injuriously in inducing fermentive changes upon the absorbed enterotoxines, they should be destroyed by giving ten to fifteen grains of sodium salicylate thrice daily along with a thyreoid preparation. If the uterus is the seat of disease, the parts should be kept scrupulously clean by douching, after which a tampon, saturated in a ten per cent. solution of ichthyol in glycerin, should be introduced, and renewed every twenty-four hours for a week or two, and afterwards at longer intervals. In scirrhus of the mamma, considerable assistance may be derived by the inunction of an ointment of cocaine and morphine hydrochloride, each 10 grains in half an ounce each of wool fat and petrolatum. A piece about the size of a pea should be rubbed well in over the tumor and surrounding skin night and morning.

4. **The Effects of Absinthe.**—Walker describes the effect of absinthe upon man, and compares it with the effect of alcohol. He says that absinthism differs in various ways from alcoholism. In the former are manifested hallucinations and terrible dreams, enfeeblement of the intellect, and stupor, all of which may develop rapidly without any muscular tremor. If this tremor does exist, it is usually confined to the upper extremities. Absintheurs are restless at night. They suffer from nightmare, nausea, lack of appetite, vomiting, mental dulness, and sometimes delirium or mania. Mental deterioration progresses. The power of concentration of memory is impaired, and the patient loses his will power. He becomes indifferent to the welfare of both himself and his family and friends. Instead of the simple muscular tremor of delirium tremens, as is seen in the alcoholic, the epileptic fit is seen in the absinthe drinker. The fit recurs from time to time. If the habit is overcome during the early stages the fits cease. But if the indulgence is continued the intellect is permanently deranged and paralysis and death result. The morbid changes which develop vary according to the individual predisposition. Sometimes the fits are more like an attack of hysteria. Absintheurs

have hallucinations of sight and hearing which do not represent a condition like delirium tremens. The victims of this habit become absolute physical and moral wrecks. In general the effects of absinthe are like those of alcohol, but in the former they develop much earlier, and are of a severer nature. In absinthism there is also a more striking disturbance of the nervous system.

5. Roentgenography of the Stomach.—Einhorn and Cole describe their method of taking Röntgenographs of the stomach, following the mode of procedure of Rieder, Holzknecht, Williams, and Hulst. The method consists in giving the patient, when the stomach is entirely or partly empty, a pint of milk into which one ounce of bismuth subnitrate has been suspended by thorough mixing. The patient is then immediately skiagraphed in a standing or recumbent posture. By holding a photographic plate directly over the abdomen the Röntgen picture can be obtained. The time of exposure is usually ten to fifteen seconds.

BRITISH MEDICAL JOURNAL.

September 29, 1906.

(Seventy-fourth Annual Meeting of the British Medical Association.)

Section of Psychology.

1. A Discussion on General Paralysis, By W. J. Mickle, A. Turner, L. H. Mettler, and others.
2. Ætiology of Dementia Paralytica. By A. R. Diefendorf.
3. Cerebral Localization and the Study of Psychiatry, By C. K. Mills.
4. The Insanity of Inebriety, By T. D. Crothers.
5. A Discussion on Dementia Præcox, By C. K. Clarke, A. Meyer, F. X. Dercum, and others.
6. Types of the Devolutional Psychoses, By C. B. Farrar.
7. Proposed Sterilization of Certain Mental Degenerates, By R. R. Rentoul.
8. Mind in Medicine, By A. T. Schofield.
9. Rational Psychotherapeutics, By P. Dubois.
10. Cerebral and Ophthalmic Complications in Sphenoidal Sinusitis. A Contribution Founded on Two Cases with Autopsies, By St. C. Thomson.
11. Remarks Upon the Pneumotoxin, By A. Macfadyen.
12. Rupture of Interstitial Tubal Pregnancy: Hysterectomy, By G. B. Hunt.

1, 2. General Paralysis.—Mickle discusses the delimination of general paralysis; that is, the making of relevant distinctions between it and other diseases, as regards symptoms, morbid anatomy, and pathogenic relations. I. Symptoms. The fundamental and most important mental symptoms of general paralysis of the insane are those of its dementia; the indications of failure, loss, disintegration, dissolution of the personality, and of the mental processes, of those affected. There are certain groups of cases in which this fundamental failure and dementia are less striking, and the earlier stages are very largely occupied by the presentation of various active deliria. Such cases may be closely simulated by other conditions, as follows: a. Degeneration with deliria, but not marked physical signs, simulating general paralysis of the insane. b. Recurrently alcoholized and deliriant degenerates simulating both the mental and physical symptoms of general paralysis of the insane. c. Original paranoiac degenerates simulating both the mental and physical states of general paralysis of the insane. d. Degenerates becoming true general paralytics. II. Morbid anatomy. The cases can be gathered into three principal groups: 1. Primary inflammatory general paralysis, corresponding to the so called classical form of the disease. 2. General paralyses secondary to, or associated with, other lesions on which the inflammatory process of group 1 becomes grafted. The preceding other lesions may be: Specific luetic ones; those of chronic alcoholism; atheroma of cerebral bloodvessels; the congenital brain malformations of degenerates or of idiots; the brain conditions of chronic insanity. 3. Degenerative general paralyses, sometimes with specific lesions. Herein the lesions are noninflammatory and yet produce the clinical aspects of general paralysis. III. Pathogenesis. Here the author simply states his belief that the acute infections and their concomitant intoxications (influenza, etc.) can cause general paralysis. Also that the acute delirium of the French and Germans is in some cases acute or hyperacute general paralysis of the insane.—Diefendorf discusses the ætiology of paralytic dementia, basing his conclusions on a series of one hundred and seventy-two cases studied at the Connecticut Hospital for the Insane. Syphilis assumes the most important position, it having occurred in 52.5 per cent. Excessive alcoholism existed in 34.3 per cent. Head injury was an important factor, being present in 12 per cent. Defective heredity also plays an important part. Insolation, plumbism, and physical and mental overwork occupy insignificant positions. In paralytic dementia we are dealing with a toxic material of some sort, the occurrence of which is accompanied by a grave general disturbance of nutrition. The symptoms of paresis are very suggestive of grave nutritional disturbances identical with those found in myxœdema and eclampsia. Syphilis probably produces a profound nutritional disturbance, which in turn creates a toxic material totally different from that existing in syphilis, which secondary product is the active factor. Alcohol probably acts in the same way.

3. Cerebral Localization.—Mills, after discussing the relations of cerebral localization and the various forms of insanity, gives the following factors upon which any classification of insanity should be based: 1. The structural rests or aberrations due ot heredity, which predispose the brain to mental disease. 2. The course and prognosis of the form of insanity, elements of age and development periods here largely entering. 3. The election of particular cerebral mechanisms by the exciting causes, bacterial or toxic, of the attack of insanity. The best general subdivision of insanities is into the teratological or abiotrophic and the pathological or acquired. I. Teratological. 1. Dementiæ due to structural arrest (embryonal apotentiality). (a) Congenital idiocy and imbecility; (b) dementia præcox; (c) dementia choreica and other presenile dementias; (d) senile dementia. 2. Insanities due to structural insufficiency, not of such degree as to produce primary dementia: (a) The melancholia mania group; (b) paranoia; (c) hysteria; (d) epilepsy; (e) psychasthenics. II. Pathological. 1. Insanities due to diffuse destructive organic disease; (a) the forms of imbecility or mental defect due to post natal causes; (b) general paresis; (c) syphilitic insanity due to gross lesions and degenerations; (d) traumatic insanities. 2. Insanities due to toxæmias and exhaustion.

7. Sterilization of Mental Degenerates.—Rentoul proposes that certain degenerates should be sterilized in order that the propagation of insanity and degeneracy may be checked. He also suggests that there should be compulsory notification by physicians and others called in of every case of insanity, mental degeneracy, suicide, and attempted suicide. No surgeon should be allowed to perform the operation of sterilization without the written permission of the lunacy commissioners, nor should any surgeon operate unless specially licensed by said commissioners.

11. Pneumotoxine.—Macfadyen, by means of his method of grinding bacterial cultures in liquid air, has been able to extract an acutely lethal toxine from the bodies of virulent pneumococci, and of much greater potency than the soluble toxines described by previous observers. This endotoxine of the pneumococcus is quite sensitive to the action of heat, and also to the prolonged action of chloroform vapor. Immunizing

experiments with this pneumococcus toxine are in progress and will be reported later.

LANCET.

September 29, 1906.

1. Pharyngeal Abscesses, By G. E. WAUGH.
2. Observations on the Arterial Pressure in Heart Disease, By H. J. STARLING.
3. A Study of the Streptococci Pathogenic for Man, By F. W. ANDREWS and T. J. HORDER.
4. Thoracotomy for Traumatic Hæmothorax Due to a Wound of an Intercostal Artery, By D. DUFF and J. ALLAN.
5. Two Cases of Hepatic Abscess Treated by the Transpleural Operation, By H. TAYLOR.
6. Endemic Hæmaturia, By P. G. STOCK.
7. A Case of Ainhum, By D. M. ALEXANDER and R. DONALDSON.
8. The Study of a Case of Plague, By J. B. CLELAND.
9. Suprapubic Dressing, By G. H. COLT.

1. **Pharnygeal Abscesses.**—Waugh divides pharyngeal abscesses into two classes, tuberculous and nontuberculous, and the latter may be subdivided into intrapharyngeal and extrapharyngeal abscesses: I. Tuberculous pharyngeal abscesses are the only ones which arise in the middle line of the posterior wall of the pharynx and spread outwards. They occur in cases of tuberculosis of the cervical vertebræ, and their onset is insidious. Inspection alone is valueless and must be followed by palpation. If neglected they attain considerable size, and superficial ulceration of the pharyngeal wall takes place, with danger of secondary infection. Dysphagia is generally the first symptom. These abscesses must always be opened by an incision in the neck and the lining membrane removed methodically by a sharp spoon, not by haphazard scrapings. Enlarged glands in the neck should be dissected out. The abscesses tend to recur as only seldom is one able to remove a sequestrum from the bodies of the vertebræ. 2. Intrapharyngeal nontuberculous abscesses arise invariably as the result of some inflammatory affection of the tonsil. They never arise in the middle line, but always on the side wall of the pharynx immediately behind one posterior pillar of the fauces. They spread backward and across the pharynx, until they may nearly reach the other tonsil. A groove can always be felt between the abscess and the tonsil on the side opposite the one on which it has started. It is exceedingly rare for these abscesses to point externally in the neck. In the first stages they exist as small hard rounded swellings in the side wall of the pharynx immediately behind the posterior faucial pillar. In the advanced stages all the signs and symptoms are those of obstructive dyspnœa. Cases have been mistaken for laryngeal diphtheria. 3. Extrapharyngeal abscesses are usually due to the breaking down of an enlarged lymphatic gland of the neck near the pharyngeal wall. The enlargement is usually due to a mixed infection, and is not purely tuberculous. Such abscesses must therefore always have been preceded by enlarged glands of the neck which had existed for some time. Intrapharyngeal abscesses are best treated by preventing their formation; this can be done in their early stages by syringing the throat with an alkaline lotion, and painting the throat with some antiseptic application, such as salol in glycerin. When all signs of acute inflammation have disappeared, the tonsils should be completely removed by enucleation, thus rendering recurrence of the abscess an impossibility. When the abscess has already formed, operation is the only treatment. Intrapharyngeal abscesses should be opened through the inner wall of the pharynx. An anæsthetic should be used, and the abscess opened its whole length, so as to prevent the formation of a pocket. Extrapharyngeal abscesses must be opened externally; the operation involves the complete removal of all the enlarged glands.

3. **Pathogenic Streptococci.**—Andrews and Horder conclude their series of articles on the streptococci pathogenic for man, with observations on the bearing of their investigations upon diagnosis and treatment. Accurate diagnosis can only be obtained by carrying the bacteriological investigation a stage beyond the mere isolation of the streptococcus, the organism once isolated must be submitted to Gordon's tests, as described by the writers in a former article. The different pathogenic streptococci exhibit marked differences in their metabolic reactions *in vitro,* so that it is highly probable that their effects upon the tissues are associated with similar differences in chemical action. A more complete antagonism between an antistreptococcus serum, and an organism may be expected if the former has been derived from an animal specifically immunized against the latter. That is, better results may be expected from a powerful univalent serum than from a polyvalent one. The authors suggest that a special horse be immunized against each type of pathogenic streptococcus. In this way a more or less specific serum would be available for use against each type of organism, and it may fairly be presumed that the specific antibodies in such sera would be more potent than when forming only one element in a polyvalent serum. The antibodies in the serum of an animal immunized against streptococci are presumably of an opsonic nature, there being no evidence that they are antitoxic or directly bactericidal.

8. **Plague.**—Cleland, from the study of a case of plague, has arrived at the following conclusions: Living plague bacilli probably liberate no toxic bodies or very few. Dead bacilli, as we know, from the reaction to protective inoculation, set free powerful ones. If living plague bacilli gain entrance through the skin of the lower limb they would reach, by means of the lymphatics, the glands in the groin, they would here multiply and in certain instances escape onwards, finally, in septicæmic cases, reaching the blood. Being still alive there would, so far, be no reaction in the tissues and the patient would still be in the incubation period of the disease. Eventually, however, the bacilli, as the result of antimicrobic bodies or the exhaustion of food supply, or for other reasons, die, and as would be expected, die first where they have had longest residence. As they die their endocellular toxines are liberated and local and systemic reaction follow in proportion to the dose. As it is only in rare instances that the bacilli remain and multiply at the point of inoculation or in the lymphatic vessels leading to the nearest glands lymphangitis seldom appears. It is otherwise in the lymph glands themselves in which multiplication has been marked and with their death we find the rapid formation of a bubo indicative of the local reaction to the liberated toxine and the first systemic symptoms of the disease due to its generalized effect. As antitoxines are now rapidly formed in response to the presence of these toxic bodies, the increasing doses of poison set free by the death of bacilli in other parts are combated to a greater or less extent by them. Hence further buboes are rare, though they may occur even up to a late date, given the rapid death of many bacilli in any particular local area, and a low content of antitoxine at that spot.

GAZZETTA DEGLI OSPEDALI E DELLE CLINICHE.

September 16, 1906.

1. The Question of Priority as to the Discovery of the Aggresines and of the Aggresinic Vaccine, By IVO BANDI.
2. The Prognosis of Little's Disease, By CESARE ORTALI.
3. Contribution to the Differentiation Between Tuberculous Meningitis and Epidemic Cerebrospinal Meningitis, By WALFREDO CHIODI.
4. Bier's Method of Stasis, By MARIO FERRARI.

5. The Modes of Access in the Surgery of the Testis and of the Spermatic Tract, By Enrico Pasquimangeli.
6. Clinical Contribution to the Therapeutics of Digalen, By Teodoro Zaeslein.

1. Priority of Discovery of Aggresines.—Bandi, in this note, calls attention to his work on a new method of preparing a vaccine against plague published October 25, 1899, by Terni and Bandi. These authors recommended the use of a vaccine against plague prepared from sterilized exudates. The method was tested on a large scale and was adopted officially in Brazil. The action of the vaccine was protective against infection as well as curative. The articles containing the reports of these researches appeared in 1899 in a pamphlet published at Messina, in the *Revue d'hygiène* in the same year, and in 1900 in *Deutsche medizinische Wochenschrift.* The later researches of Bail confirmed the existence of the two antagonistic principles mentioned, and repeated and developed further the work of Bandi and Terni, adopting the term aggresinic vaccines, aggresines, and antiaggresines. And now in a recent number of the *Centralblatt für Bacteriologie* Huppe and Kikuschi published a brief note in which they declared that they wished to retain the priority of the discovery of a new method of immunizing against the plague, which consisted in the injection into animals of certain quantities of sterilized exudates from patients with the disease.

3. Differentiation of Tuberculous from the Epidemic Type of Meningitis.—According to Chiodi it is very difficult to differentiate between the epidemic meningitis and that due to other germs unless the presence of an epidemic is known. The basis of this study was an epidemic of cerebrospinal meningitis, which occurred in Florence in the latter part of last winter. A characteristic of the epidemic form is that it is limited to certain regions or quarters of a city, and very often one case can be traced to another. The epidemic form is usually preceded by choriza, and the meningococcus is often found in the nasal secretion. Tubercluous meningitis is always secondary to some preexisting focus of tuberculosis somewhere in the system. In the tuberculous type there is almost always a prodromic period which may last as long as one or two weeks. On the other hand, the epidemic form comes on very rapidly after from two to four days of incubation, and sets in with a chill. In the tuberculous form the patients gradually sink into a profound stupor, while in the epidemic form there is almost never such a complete clouding of the consciousness. In children the tuberculous form is accompanied by frequent awakening suddenly with a start and by the characteristic cry and by gnashing of the teeth, while these symptoms are not usual in the epidemic form. In the tuberculous form the patient, especially if a child, lies almost always on his side with his legs flexed. In the epidemic form the position is always on the back, with the legs extended and neck stiff and head extended, the position approaching opisthotonos. In the epidemic form the temperature rises rapidly and continues high; while in the tuberculous form the fever is not so high and is less regular. Lumbar puncture furnishes a valuable diagnostic method. In the tuberculous form the fluid is colorless and clear; in the epidemic form turbid, milky, or even purulent, when kept in the incubator for some hours the fluid in the tuberculous form tends to deposit a coagulum. On microscopical examinations the finding of the tubercle bacillus is, of course, final, but if the epidemic form is present the meningococcus of Weixelbaum may be detected.

5. The Modes of Access to the Testes and Cord.—Pasquimangeli considers critically the comparative value of the scrotal and the inguinal routes of access to the testes, and concludes that the latter presents a number of advantages. The radical cure of varicocele is perfectly feasible by the inguinal route, according to the technique of Ruggi (inflection or loop of the cord), or that of Parona (the suspension of the testicle by means of the tunic vaginalis propria everted), or that of Narath (resection of the trunks of the internal spermatic vein in the inguinal canal). Operations for varicocele by the resection of the pampiniform plexus, according to the methods of Bennett and Kohler, Tillaux, and of Durante has been successfully executed by the inguinal route in the authors' clinic. A number of radical cures of hydrocele of both the testes and the cord were also executed by the inguinal method employing the technique of Bergmann (total resection) and of Juillard-Thiers, etc. In a number of cases castration and high resection of the cord was practised by the inguinal method for the removal of tumors of the testes or of tuberculous testes. The inguinal method was also used in operations for ectopic testes.

LA RIFORMA MEDICA

September 22, 1906.

1. Interesting Cases of Diffuse Neurofibromatosis. Neuromata. Recklinghausen's Disease (*To be continued*), By Cristoforo Pastine.
2. On the So Called Recurrent or Suppletive Sensibility, By Sergio Pansini.
3. On the Resistance of the Virus of Rabies Against Putrefaction, By Tullio Mazzei.

2. Theory of Anastomosis of Peripheral Nerves.—Pansini studies the phenomena involved in the return of sensibility to an anæsthetic part after an injury to a peripheral nerve. He calls attention to the fact that after the excision of a peripheral nerve the anæsthetic parts regain their sensibility concentrically; that is to say, from the periphery of the zone towards the centre, or from the healthy portions towards those affected by the loss of nerve supply due to the injury. In support of this he cites several cases. Another interesting phenomenon is the hyperæsthetic border found about an anæsthetic area. This, in the author's opinion, is due to the greater activity of the peripheral nerve filaments which seek to anastomose with the central stumps.

3. Filtration of Putrid Rabies Virus.—Mazzei says that when the virus of rabies is in a state of putrefaction and cannot be restored even by purification with glycerin, filtration offers an excellent way of making such virus available for diagnostic inoculations. Negri's bodies resist putrefaction for ten days, but the virulence of the virus is of more prolonged duration, as samples have been utilized after forty days when they were rendered fit to use by filtering.

ROUSSKY VRATCH

September 2, 1906.

1. The Principal Nervous and Mental Sequels of Alcoholism, By Th. E. Rybakoff.
2. The Treatment of Gonorrhœa in Women by Means of Methylene Blue, By F. V. Boukoyemski.
3. On Obstruction of the Sigmoid, By F. K. Weber.
4. The Frequency of Enlargement of the Spleen in Health, By I. B. Studzinski.
5. A Case of Lympthcyst of the Thigh, By P. G. Popper.

1. Nervous and Mental Disturbances in Alcoholics.—Rybakoff, who has charge of the dispensary for alcoholics connected with the Moscow Psychiatric Clinic, presents a detailed statistical study of six hundred alcoholics with reference to the frequency and forms of nervous and mental disturbances in this class of patients. The great majority of his patients were men. Most of them were habitual drunkards (more than sixty per cent.), a smaller number were periodical drunkards (twenty-five per cent.), and the rest occasional drunkards (five per cent.). In women periodical drunkenness is more frequent than in men. Periodical drunkenness is, according to Rybakoff, an expression of a lower form of degeneration than is habitual drunkenness. Delirium tremens and hallucinations in general are observed in more than one third of all alcoholics.

Hallucinations are more frequent in the periodical drunkards (fifty-seven per cent.) than in habitual alcoholics. Epileptic seizures occur in about ten per cent. of drunkards. They are less frequent in the periodical type than in the habitual, and are due to a chronical poisoning of the cortex. Alcoholic dementia is found in one per cent. of the drunkards studied, and almost exclusively in the habitual type. This dementia is also the effect of chronic alcoholic poisoning. Multiple neuritis is found in about two per cent. of drunkards, and chiefly in habitual drunkards. It is met with in persons who drink large amounts of alcohol. Degenerates show a type of drunkenness, which is between the habitual and the periodical. In them drunkenness is not so much a disease as a manifestation of an abnormal state of the nervous system.

2. **Treatment of Gonorrhœa in Women with Methylene Blue.**—Boukoyemski recommends the following method of treatment in cases of gonorrhœa in women. The external genitals and the vaginal inlet are washed with a stream of 1 : 2,000 formaldehyde solution. A saturated solution of methylene blue in water (4.45 per cent.) is applied to the urethra, the cervix, the vagina. The applications are made every day, or three times a week, according to the virulence of the case. In cases in which there is a metritis the cavity of the uterus is also swabbed. The author shows experimentally that methylene blue is the best gonococcide, and that it has great penetrating powers.

4. **Significance of an Enlarged Spleen.**—Studzinski says that an enlarged spleen is found in about thirty per cent. of all patients applying for treatment for internal diseases. An enlarged spleen in acute infectious diseases should be looked upon with conservatism, as it is very often due to a chronic condition, and not at all to the acute infection. We should always inquire in such cases as to whether the patient has had malaria or not, and we should regard as acutely enlarged only spleens that are soft, and not the ordinary hard and enlarged spleen of chronic diseases.

REVUE DE CHIRURGIE

September, 1906.

1. Large Cysts of the Suprarenal Capsule, By F. TERRIER and P. LECÈNE.
2. Inflammation of Intestinal Diverticula or Diverticulitis, By L. CAHIER.
3. Acetinomycosis and Pregnancy, By L. THÉVENOT.
4. Vasovesiculectomy in Genital Tuberculosis, By R. BAUDET and L. KENDIRDJY.
5. The Treatment of Cancer of the Rectum, By M. DUPAN.

1. **Large Cysts of the Suprarenal Capsule.**—Terrier and Lecène divide these tumors into five varieties: 1. Parasitic cysts, hydatids. 2. True glandular cysts. 3. Cystic adenomata. 4. Cystic lymphangiomata, serous cysts with endothelial lining. 5. Pseudocysts, cavities filled with blood or broken down tissue. From a surgical point of view the only interesting varieties are the serous cysts or lymphangiomata, or the pseudohæmorrhagic cysts. These alone are relatively common and attain sufficient dimensions to be clinically recognized. They are always unilateral, and hence do not cause the symptoms of Addison's disease. Only their physical signs are of assistance in making a diagnosis. They develop slowly in the upper portion of the abdominal cavity, are retroperitoneal, and may be accompanied by pain and vomiting. They may be mistaken for hydatid cysts of the liver or spleen, for cysts of the mesentery, mesocolon, pancreas, for serous cysts of the spleen, and for renal or circumrenal cysts. Exploratory puncture of these cysts should not be practiced. The only proper treatment consists in removal, either by marsupialization or by extirpation, according to the density of the adhesions. Abdominal incision, as a means of approach to the cyst, is preferable to lumbar incision, as it gives far more room for intelligent work.

2. **Inflammation of Intestinal Diverticula.**—Cahier states it has long been recognized that an intestinal diverticulum might be subject to strangulation, invagination, volvulus, stercoral fistula, etc., but acute or chronic inflammation of a diverticulum has only been recognized in recent times. He divides the diverticulum into four varieties: 1. Diverticula of Meckel. 2. Ancestral diverticula. 3. Enteroid diverticula by inclusion. 4. False diverticula. The following is a brief description of them: 1. Meckel's diverticula are solitary, at the end of the small intestine, composed of four layers, about two centimetres long, adherent to the umbilicus, to a neighboring zone or to a mesentery. 2. Ancestral diverticula are conical or cylindrical, usually on the lower half of the small intestine. They are seldom less than two centimetres in length and usually have a mesentery. They may be multiple in number, and may have adhesions. 3. Enteroid diverticula by inclusion are of rare occurrence, and are located at the end of the ileum or near the cæcum. They are as large as an almond, and usually have a pedicle. They occupy the free border of the intestine and may become adherent to surrounding structures. 4. False diverticula are formed by the eversion of the intestinal mucous membrane through the muscular layer. They are small, multiple, with thin walls, and occur in any portion of the intestinal tube.

3. **Actinomycosis and Pregnancy.**—Thévenot observed that this disease did not exert any particular influence upon the evolution of pregnancy. Its toxines caused anæmia and disturbed the nervous system, but apparently had no effect on the placenta. The fœtus may be poorly developed and of poor resisting power. Lactation is unfavorable to the child and exposes it to infection from the mother. Upon labor or the puerperium it has no apparent influence. On the other hand, pregnancy predisposes to infection from actinomycosis. The disease may be acquired from animals or vegetables, through a wounded mucous membrane. The disease once established tends to become diffuse, but general septicæmia is at least a rare result. Treatment should consist in scrupulous cleanliness, suitable incisions, and the judicious use of the curette for the broken down tissue. Extirpation by the knife is out of the question, the disease is an infection and not a neoplasm. Iodine in some form should be used externally and internally, the patient should be removed to the country and heliotheraphy should be employed.

REVUE DE MEDECINE

September, 1906.

1. The Early Diagnosis of Tuberculosis in the Army, and the Serum Diagnosis of Arloing and Courmont, By GRYSEZ and E. JOB.
2. Contribution to the Study of the Mode of Action in Fixation Abscesses, By CONOR.
3. Postexanthematic Cutaneous Tuberculosis. Multiple Disseminated Cutaneous Tuberculosis Following Measles. Lupus Following Variola, By H. GOUGEROT.
4. Metapneumonic Fever, By F. MOUTIER.
5. Lævulosuric Diabetes, By A. A. LAMBRIAR.
6. Pathogenesis of Rheumatism, By J. LÉPINE.

1. **The Early Diagnosis of Tuberculosis in the Army.**—Grysez and Job concede that there are many methods for determining the early diagnosis of tuberculosis, but there is an element of uncertainty about all of them. Some refer to the physical condition, comparison of the weight, size, and thoracic measurement, while others relate to the examination of the lungs, and the antecedent history, others rely upon the determination of the presence or absence of the bacillus of Koch. At the present time it is often necessary to add to the foregoing resources the information which is obtained in the

laboratory. Some of the laboratory methods give probable results, like the diazo reaction of Ehrlich, the vesication test, the cellular examination of serofibrinous exudate, mild intermittent albuminuria, albumosuria, the influence of alternate work and rest upon the body temperature, etc. Others give certain information, like the determination of the bacillus of Koch in the sputum, the blood or the urine, but in the beginning of tuberculosis this is not readily obtainable. Tuberculin as a test is often useful and gives exact information, but its use is not unattended with inconvenience. On the other hand, the serodiagnostic test proposed by Arloing and Courmont, is harmless and simple, and its reaction consists in determining the agglutination resulting from the application of serum from a supposed tuberculous subject to a culture of tuberculosis. It is believed that this method, while not infallible, will be of especial value in deciding as to the physical soundness of soldiers.

3. **Postexanthematic Cutaneous Tuberculosis.**—Gougerot concluded as the result of the study of several cases that irregularly disseminated cutaneous tuberculosis, over the entire body, may follow measles or scarlet fever, during the period of convalescence. No distinct type of tuberculosis was observed in such cases, but the form which occurred most frequently was the variety of lupus described by Willan. Other varieties were scrofuloderma, verrucous tuberculosis, lichen scrofuloserum,, and acnitis. Three forms were distinguishable after the period of evolution: 1. A chronic form with successive eruptions and persistent and extensive foci, beginning after convalescence and continuing months or years. 2. A subacute form with a sigle attack and small foci, and with no tendency to get better or worse. 3. An acute form which accompanies chronic or acute visceral tuberculosis, and is fatal in its issue. This form of tuberculosis may also follow variola, the poison of the latter disease apparently predisposing to the former.

4. **Metapneumonic Fever.**—Moutier admits the occurrence of complications of one sore or another following the crisis of pneumonia, but he desires to call particular attention to a febrile syndrome occurring from one to ten days after the crisis, and coinciding with the general and progressive improvement of the patient, without other morbid phenomena. The fever is not usually intense, nor of long duration. As a clinical type it cannot be distinguished either by age, sex, duration of the disease, antecedent thermal cycle, antecedents of the patient, or gravity of the precedent general condition. The pulse in this febricula is increased to a degree corresponding to the elevation of temperature. The elimination of chlorides is normal, the urine is normal in other respects, and the blood shows the conditions peculiar to convalescence and not peculiar to infection. In fact, with the exception of the temperature, there are no compications, the local condition of the lungs, and the reactions in general of the patient showing a normal and definite progress toward recovery.

6. **Pathogenesis of Rheumatism.**—Lépine thinks that his clinical study of chronic rheumatism has given abundant evidence of the influence upon it of the nervous system. Fatigue, cares, emotions, all have an influence in exciting articular muscular or neuralgic pain in rheumatics. The life of such sufferers is insecure; they sleep poorly, their physical, moral and intellectual activity are impaired. Their normal equilibrium is disturbed by a change in the barometer, or by alimentary irregualrity. They may go to bed in good physical condition, pass a wretched night, and be miserable the day following. After the disease has lasted a long time the central nervous system itself is liable to become involved. The different forms of rheumatism vary only in the variable proportion of their pathogenic elements. The best treatment is that which not only cures the local accident, but removes the cause, regulating the daily hygiene and using appropriate medication, exercising both the body and the mind in ways that are rational and reconstructive. A subject of chronic rheumatism must be sparing of his strength, whether physical or mental. It is often possible for such a sufferer to accomplish very much if his conduct is carefully regulated.

Proceedings of Societies.

NEW YORK OBSTETRICAL SOCIETY.

Meeting of May 8, 1906.

The President, Dr. Leroy Broun, in the Chair.

Cystocele and Its Surgical Treatment.—Dr. Charles G. Child, Jr., gave an historical review of the different operative procedures that had been used during the past one hundred years, beginning with the work of Jobert in the early part of the nineteenth century, who first cauterized the mucous membrane and then drew the edges of the wound together. He said the first operation by denudation of the anterior vaginal wall had been suggested by Geraurdin in 1823, who removed a longitudinal strip. He was followed by Dieffenbach, Hemming, Velpeau, and Hall, who made denudations of different shapes. All these operations were abandoned until revived by Marion Sims in 1858. In the mean time Lightfoot, of England, denuded and sewed together the whole of the vaginal orifice, omitting only a small portion to keep the canal patent. Baker Brown, in 1853, also reported an operation which consisted in the removal of a strip of mucous membrane posteriorly and two anteriorly just within the vaginal orifice, thus forming a bridge of tissue upon which the cystocele rested. The original operation of Sims was a horseshoe shaped denudation, which was modified by Emmet. The Stoltz operation was also advocated about the same time. Beginning in 1887, operations in which the bladder was separated from the cervix were proposed, first by Hadra, who, after the separation was completed, stitched the bladder to the anterior surface of the uterus. In 1892 Skene accomplished the separation through a small opening in the anterior wall at the junction of the urethra and bladder. The vaginal wall was then brought together, producing a ridge of mucous membrane, which was to serve as a supporting ridge for the bladder. Various procedures for separating and dealing with the bladder had been advocated. Gersuny, for example, infolded the bladder by a continuous suture, Martin by several rows of interrupted sutures. Watkins opened the peritoneal cavity and, after elevating the bladder, pulled the uterus forward and sewed the vaginal flaps to its fundus and to the broad ligaments. Reynolds excised all of the overstretched portion of the vaginal wall. In 1902 Dudley suggested a somewhat similar procedure. In 1904 Goffe suggested opening the peritoneal cavity through a longitudinal incision in the anterior vaginal wall, and, after elevating the bladder, suturing it to the uterus and broad ligaments on either side. Through the abdominal route, the pioneers were Byford, Lawson, Tuffier, Demorest, and Laroyenne. Byford transfixed the vaginal sulcus by stitches passed through the inguinal canals. Demorest and Laroyenne did an extraperitoneal fixation, while Tuffier advocated an intraperitoneal route. Lawson, in 1898, shortened the urachus and hypogastric cords, but on account of their anatomical uncertainty he cut out a peritoneal flap down to the bladder reflexion and sutured it to the common sheath of the rectus.

Finally, in 1903, Dickinson presented the operation of ventral suspension and fixation for prolapse of the uterus and bladder through a median abdominal incision.

Dr. J. Riddle Goffe considered the ætiology and surgical treatment. In studying the ætiology he first distinguished the anatomical relations of the upper and movable portion of the bladder from those of the lower and fixed portion, which with its five ligaments, had an intimate relation with the vagina and uterus. He pointed out that in pregnancy and fibroid tumors the bladder was elevated, and even in cases with marked retention of the urine the base of the bladder did not bulge downward. In case of uterine descent, however, the uterine support having been withdrawn, the bladder descended—a proof, he thought, that normally the ligaments were sufficient and that the perineal body had nothing to do with the support of either organ. For the proper support of the organ, either the ligaments or their insertions must be sufficiently strong. In cystocele either there was a descent of the uterus, representing the chief point of support, or the fascia at the base of the bladder was weakened, representing the insertion of the ligaments. Either condition was a pathological result of parturition, or in nulliparæ was due to a hypertrophic elongation of the cervix. If the fascia representing the insertion of the ligaments was weakened there was a true hernia of the bladder, due to an avoidable accident of parturition, namely, the catching of the anterior segment of the pelvic floor beneath the pubes, which from the accumulation of urine in the bladder resulted in an abnormal bulging due to the voluntary efforts at expulsion before the cervix was sufficiently dilated. In the treatment of this condition he advised his own operation, by which the bladder was entirely freed from the uterus and vagina through a longitudinal incision in the anterior vaginal wall. The bladder was then spread out and stitched to the anterior surface of the uterus and to the broad ligaments.

Professor Dührssen, of Berlin (present by invitation), spoke of the success he had had with the operation described by Dr. Goffe. In old women he opened the peritonæum and fixed the uterus to the vaginal wall. Lacerations of the perinæum were also repaired. He thought it was possible to cure cases by the operation through the abdomen suggested by Dr. Dickinson, but he preferred the vaginal route in most instances.

Dr. H. C. Coe referred to the crude methods of simply removing a redundant portion of the vaginal wall, and, while accepting the statements that cystocele could not be cured without replacing the bladder as far as possible in its normal position and trying to retain it there by lifting the viscus, either alone or with the uterus, he thought it was difficult to determine the exact level at which the prolapsed organ could be suspended without causing vesical irritation. The base of the bladder being more or less of a fixed point as well as an exceedingly sensitive one, all dislocations of the uterus, whether upward or downward, might cause traction at this point and cause symptoms more annoying than those due to the original condition.

Dr. E. H. Grandin said that he thought the matter would be much simplified if it was remembered that cystocele was simply a hernia of the bladder and not a subinvolution of the anteriar vaginal wall. He recognized two types of cystocele, one with and one without a coincident sagging of the uterus. In the latter type it was only necessary to expose the bladder and suture the muscle and fascia. In the other he was skeptical about effecting a cure by any vaginal operation alone. It was necessary to open the abdomen and suspend the uterus to the abdominal wall. In women past the childbearing age he did a supravaginal amputation and sutured the stump high up. The cystocele was then treated from below as a hernia.

Dr. H. N. Vineberg stated that the Mackenrodt operation for retroflexion of the uterus gave the best results in his hands. He also called attention to the fact that Mackenrodt was the first to resort to the longitudinal incision, others having used it after the transverse incision had been found unsatisfactory. In young women he modified the operation somewhat by not opening the peritoneal cavity. After excising the excess of vaginal flaps he passes a deep layer of sutures which included the fascia and mucosa, the last of these sutures taking in the anterior wall of the uterus just above the internal os. In some cases of extreme hernia of the pelvic contents he might try the procedure that had been suggested by Dr. Dickinson.

Dr. J. Milton Malbot emphasized the two points made by Dr. Goffe in regard to the ætiology of cystocele—the laceration of the fascia that occurred when the anterior lip of the cervix was pushed downward by the head and the necessity of keeping the patient in bed long enough to insure proper involution of the ligaments as well as the uterus.

Dr. Dickinson expressed regret that the radical operation of ventral fixation should be advised only for cases presenting an extensive protrusion of the bladder or such with atrophies and defects in the pelvic floor. The vaginal fixation, he thought, met the conditions in muscular women and in those with moderate prolapse who were not be exposed to further injuries from parturition, but he considered that ventral fixation was swift, simple, and harmless compared with the operation suggested by Dr. Goffe.

Book Notices.

Elements of General Chemistry, with Experiments. By John H. Long, M. S., Sc. D., Professor of Chemistry and Director of the Chemical Laboratories in the Northwestern University Medical School. Fourth Edition, Revised and Enlarged. Illustrated. Philadelphia: P. Blakiston's Son & Co., 1906. Pp. x-1 to 443. (Price, $1.50.)

The fourth edition of this book contains those additions to our knowledge of chemical theory that have been the subject of generalization during the past eight years; and when it is recalled that the ionic theory of the dissociation of chemical compounds has had its greatest development during this period, the importance of this new revised edition will be properly appreciated. Most of the added matter is given in a chapter not in the older editions, on the theories of solution and the conditions of chemical equilibrium. The volume is of handy size, and reference to its contents is facilitated by an excellent index.

La Cure de déchloruration dans le mal de Bright et dans quelques maladies hydropigènes, par le Dr Fernand Widal, professeur agrégé à la Faculté de médecine de Paris, médecin de l'hôpital Cochin, et le Dr Adolphe Javal, lauréat de l'Académie de médecine. Paris: J. B. Baillière et fils. Pp. 96. (Price, 1 f. 50.)

The authors have advocated for some years the treatment of Bright's disease, dropsy, and cardiac and vascular disease by dechloridation, that dietetic method that has for its basis the restriction of the alimentary chlorides, and in this little volume they describe the results that may be obtained by such regimen.

Following a history of this treatment, the rôle of salt in the organism, the chloride equilibrium and its physiological variations, the failure of the kidneys to excrete chlorides, and the variations in Bright's disease of the permeability of the kidneys by chloride of sodium are described. They review the several varieties of chloride retention and the obstacles to the resorption of effusions. They describe the application of the treatment in disease and suggest the constituents of a diet free from chlorides.

Miscellany.

The Late Dr. George A. Spalding.—Dr. C. A. Herter has furnished us with the following: Through the premature death of George Atherton Spalding the medical profession of this country has lost one of its most alert and discerning practitioners and the community a character of rare force and gentleness, to whom every worthy social aim made a powerful appeal. The end came almost without warning, during the afternoon of October 2nd, from an unsuspected affection of the heart and apparently in consequence of excessive exertion in the course of professional duty. Dr. Spalding was born on January 14, 1849, in Kentucky. He sprang from a long line of educated ancestors, many of whom attained distinction as medical men. His grandfather studied medicine at Guy's Hospital and brought over to this country from the celebrated Dr. Jenner the first vaccine against smallpox, which he delivered to Dr. Waterhouse. After an academic course at Yale University, the late Dr. Spalding obtained his medical education at the College of Physicians and Surgeons, where he acted during two years as assistant to the eminent physiological teacher and investigator, Professor John C. Dalton. The close contact with an acute and cultivated mind, used to deal with medical problems from the physiological standpoint, was of inestimable value to the young student of medicine and accounts for the active interest in the scientific basis of medicine which was shown by Spalding throughout his long and successful career. After graduation at the medical school, he served as an interne at St. Luke's Hospital (1875-'6), where he quickly won the confidence and admiration of his colleagues. Thus equipped for work, Spalding began life in New York as a general medical practitioner. He soon built up a large practice and developed the exceptional gifts which made him one of the most competent physicians in the great city. These gifts were both intellectual and moral. Perhaps Spalding's most distinguishing trait was quickness of insight into complex and difficult medical and human situations, calling for prompt and individual treatment. He had the intelligence to promptly apprehend what should be done and the force to do what he deemed right. His patients either obeyed him implicitly or were requested to seek another adviser. People soon learned to trust the mind and heart of the clear eyed, earnest man, whose first interest was to do his duty, promptly and fully, without sparing himself. This practice grew apace until it made heavy demands on thought and strength. To meet these demands while ever striving to elevate the quality in his work, Spalding was compelled to sacrifice his personal culture in many directions and to live a life of great abstemiousness and self control. The courage with which he made personal sacrifices year after year for the sake of his work will never be known beyond the small circle of those with whom he was intimate, for he bore much in silence. Notwithstanding the ever increasing exactions of private practice, Spalding made time for outside professional work designed to increase his efficiency as a physician. From 1879 to 1894 he served as an attending physician at the House of Refuge on Randall's Island, where his energy and upright methods proved invaluable to the public service. In 1896 he was appointed to the important position of attending physician to St. Luke's Hospital, the active duties of which brought him great satisfaction, although he had many regrets that he could not give so much of his time to these duties as he would have wished. This position he held at the time of his death. Few general practitioners have kept in such close personal touch with the most progressive members of the profession. Spalding had the intuitive feeling for the qualities of people which comes only to sensitive and refined natures. He enjoyed mixing freely among men, and his personal charm made him *persona grata* in the societies frequented by the most distinguished members of the medical profession. This contact had a highly important practical influence on his efficiency in private and hospital work. He learned to know well the professional and personal qualities of the men who could help him in emergencies and exceptional cases. He was in a position, therefore, to give his patients the benefit of the best available medical and surgical skill. This he did with the utmost freedom and with highly refined judgment. Spalding was not a teacher of students, nor did he publish often, but he possessed the insight which, under conditions of greater leisure, would have brought success as a teacher and the judgment to enrich literature with well recorded cases. Circumstances limited his talents and activities to the practical duties of his profession. In the skilful discharge of these humanitarian duties he was actuated by the highest and broadest motives. He sought not merely to give his patients physical security and comfort, but to educate them to conform to the ways of Nature through the exercise of intelligent self control. He studied to prevent disease as well as to cure it, and perhaps few who have dealt with individuals rather than with masses have better succeeded in this. Thus his influence on the community was widespread for good and hardly measurable by common standards.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending October 12, 1906:

Smallpox—United States.

Places.	Date.	Cases.	Deaths.
Colorado—General	Aug. 1-31	30	
Kansas—General	Aug. 1-31	29	
Louisiana—New Orleans	Sept. 22-29	3	
New York—New York	Sept. 22-29	1	
North Carolina—General	Aug. 1-31	12	
Ohio—Cincinnati	Sept. 29-Oct. 5	1	

Smallpox—Foreign.

Africa—Cape Town	Aug. 18-25	3	
Canada—Winnipeg	Sept. 22-29	2	
Chile—Iquique	Aug. 18-Sept. 1	Present.	
India—Calcutta	Aug. 11-18		2
Italy—General	Sept. 13-20	3	
Russia—Odessa	Sept. 8-15	1	

Yellow Fever—Foreign.

Costa Rica—Limon	Sept. 25	1	
Cuba—Habana	Oct. 5-10	1	1
Cuba—Santa Clara Province	Oct. 5-11	2	1
Mexico—Merida	Sept. 23-29	4	1
Mexico—Tuxtepec	Sept. 23-29	1	
Mexico—Vera Cruz	Sept. 23-29		1

Cholera—Foreign.

China—Shanghai	Sept. 24-Oct. 7		87
India—Calcutta	Aug. 11-25		29

Plague—Foreign.

Egypt—Alexandria	Sept. 14-19	3	1
Egypt—Suez	Sept. 14-19	7	4
India—General	Aug. 11-16	1,937	2,113
India—Calcutta	Aug. 11-25	1	25
Japan—Osaka	Oct. 10	Present.	
Persia—Seistan Province	June 23-July 27	23	37

Public Health and Marine Hospital Service:

List of Changes of Station and Duties of Commissioned and Noncommissioned Officers of the Public Health and Marine Hospital Service for the seven days ending October 10, 1906:

BAILEY, C. W., Acting Assistant Surgeon. Granted leave of absence for ten days, from August 16, 1906, on account of sickness.

CLEAVES, F. H., Acting Assistant Surgeon. Granted leave of absence for four days, from October 2, 1906, under Paragraph 210 of the Regulations.

CORPUT, G. M., Passed Assistant Surgeon. Relieved from duty at New Orleans, La., and directed to proceed to Galveston, Texas, and assume command of the Service at that port.

EBERT, H. G., Assistant Surgeon. Relieved from duty on the Revenue Cutter *Perry*, and directed to assume command of the Service at Seattle, Wash.

EBERT, H. G., Assistant Surgeon. Granted leave of absence for fifteen days.

GARDNER, C. H., Passed Assistant Surgeon. Relieved from duty at Galveston, Tex., and directed to proceed to San Francisco, Cal., reporting to the Medical Officer in Command for duty and assignment to quarters.

HERRING, R. A., Assistant Surgeon. Directed to report to the Medical Officer in Command, New Orleans, La., for duty and assignment to quarters.

HOUGHTON, M. W., Acting Assistant Surgeon. Granted leave of absence for fifteen days, from October 15, 1906.

HUNTER, W. R., Acting Assistant Surgeon. Granted leave of absence for fourteen days, from October 10, 1906.

SALMON, T. W., Assistant Surgeon. Granted leave of absence for fourteen days, from October 21, 1906.

SIMPSON, FRIENCH, Assistant Surgeon. Directed to proceed to Baltimore, Md., reporting to Medical Officer in Command for duty and assignment to quarters.

STANTON, J. G., Acting Assistant Surgeon. Granted leave of absence for thirty days, from October 9, 1906.

Board Convened.

A board of medical officers was convened to meet at Galveston, Texas, October 10, 1906, for the purpose of examining candidates for cadetships in the Revenue Cutter Service. Detail for the board: Passed Assistant Surgeon C. H. Gardner, Chairman; Acting Assistant Surgeon William Gammon, Recorder.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, for the week ending October 13, 1906:

BISPHAM, W. N., Captain and Assistant Surgeon. Relieved from present temporary duties and will return to his proper station, Fort Logan, Colo.

BOYER, P. L., First Lieutenant and Assistant Surgeon. Returned to his proper station, Fort Sam Houston, Texas, from leave of absence.

CARTER, E. C., Major and Surgeon. Returned to Fort Leavenworth, Kas., from leave of absence.

FORD, CLYDE S., Captain and Assistant Surgeon. Operation of his order for Philippine service is suspended until further orders.

HEYSINGER, J. D., First Lieutenant and Assistant Surgeon. Ordered from San Francisco, Cal., to Washington, D. C., to report to the Surgeon General for duty.

KIRBY-SMITH, R. M., Captain and Assistant Surgeon. Granted an extension of two months to his leave of absence.

LEWIS, W. F., Captain and Assistant Surgeon. Ordered from Newport News, Va., to Fort Monroe, Va., for temporary duty.

O'CONNOR, R. P., First Lieutenant and Assistant Surgeon. Arrived at Fort Leavenworth, Kas., for duty.

PALMER, FRED. W., First Lieutenant and Assistant Surgeon. Granted fifteen days' leave of absence.

PINKSTON, O. W., First Lieutenant and Assistant Surgeon. Relieved from temporary duty in the Department of California and ordered to duty in the transport service.

STEDMAN, C. J., First Lieutenant and Assistant Surgeon. Ordered to return from Newport News, Va., to his proper station, Fort Stevens, Wash.

WAKEMAN, W. J., Major and Surgeon. Granted an extension of four months to his sick leave of absence.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending October 13, 1906:

ABEKEN, F. G., Passed Assistant Surgeon. Commissioned a passed assistant surgeon in the United States Navy from July 10, 1906.

BOGAN, F. M., Passed Assistant Surgeon. Ordered to the Naval Hospital, Washington, D. C., for treatment.

BOYD, J. C., Medical Director. Ordered to duty in command of the United States Naval Medical School Hospital, Washington, D. C.

BRAISTED, W. C., Surgeon. Detached from duty at the United States Naval Medical School, Washington, D. C., and ordered to duty as assistant to the Bureau of Medicine and Surgery, Navy Department, Washington, D. C.

CASTO, D. H., Acting Assistant Surgeon. Appointed an acting assistant surgeon in the United States Navy from October 6, 1906.

DEAN, F. W. S., Passed Assistant Surgeon. Commissioned a passed assistant surgeon in the United States Navy from January 26, 1906.

DEBRULER, J. P., Passed Assistant Surgeon. Commissioned a passed assistant surgeon in the United States Navy from January 3, 1906; ordered to duty at the Naval Medical School Hospital, Washington, D. C.

DONELSON, M., Acting Assistant Surgeon. Appointed an acting assistant surgeon in the United States Navy from October 6, 1906.

MANCHESTER, J. D., Passed Assistant Surgeon. Commissioned a passed assistant surgeon in the United States Navy from June 10, 1906.

PICKRELL, G., Surgeon. Ordered to the Bureau of Medicine and Surgery, Navy Department, Washington, D. C., for special duty.

RENNIE, W. H., Passed Assistant Surgeon. Commissioned a passed assistant surgeon in the United States Navy from May 25, 1906.

RUSSELL, A. C. H., Surgeon. Ordered to the United States Naval Medical School, and to additional duty as a member of the Naval Medical Examining Board, Naval Medical School, Washington, D. C.

VERNER, W. W., Passed Assistant Surgeon. Commissioned a passed assistant surgeon in the United States Navy from May 25, 1906.

WOODWARD, J. S., Passed Assistant Surgeon. Commissioned a passed assistant surgeon in the United States Navy from July 10, 1906.

Births, Marriages, and Deaths.

Married.

BEYER—WILHELM.—In Clarion, Pennsylvania, on Thursday, October 4th, Dr. Joseph Walter Beyer and Miss Jane Ellen Wilhelm.

BIRDSALL—PATTERSON.—In New York, on Thursday, October 4th, Dr. Gregg Custis Birdsall, of Washington, D. C., and Miss Isabella Patterson.

Died.

CARR.—In Worcester, Massachusetts, on Thursday, October 4th, Dr. Dennis J. Carr, aged thirty-one years.

COLLINS.—In Los Angeles, California, Dr. William T. Collins.

EATON.—In Lancaster, N. Y., on Saturday, October 6th, Dr. Lewis Eaton, aged seventy-seven years.

HEMPEL.—In St. Louis, Missouri, on Tuesday, October 9th, Dr. Max Hempel.

MULLIN.—In Paducah, Kentucky, on Thursday, October 4th, Dr. William Scott Mullin, aged fifty-three years.

SHACKFORD.—In Roanoke, Virginia, on Thursday, October 4th, Dr. William H. Shackford, aged fifty years.

STEWART.—In Montreal, Canada, on Saturday, October 6th, Dr. James Stewart, aged fifty-nine years.

STONEY.—In San Francisco, California, on Monday, October 1st, Dr. Randolph Croft Stoney.

WEITENBERNER.—In Detroit, Michigan, on Monday, October 8th, Dr. Anthony Weitenberner, aged twenty-eight years.

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Original Communications.

INDICATIONS FOR SURGICAL INTERVENTION IN DISEASES OF THE STOMACH.*

BY JOSEPH A. BLAKE, M. D.,
New York.

In order to appreciate the indications for surgical intervention in diseases of the stomach, one must first understand what can be accomplished by surgery. It is a mistake, at least in the present status of gastric surgery, to consider surgery a cure-all in diseases of the stomach. In fact, gastric surgery is more likely to be hindered than advanced by an improper selection of cases through a mistaken idea or comprehension of its possibilities.

Operations upon the stomach may be divided into three main procedures: Firstly, repair of wounds and perforations; secondly, improvement of drainage; and thirdly, partial excision. This classification omits the plication and suspension of atonic and displaced organs, operations of doubtful value, and the treatment of some other rare conditions such as volvulus and acute dilatation. Given, then, these three procedures, the indications for the surgical treatment of any condition depend upon whether it will be benefited by one or more of them, and whether the benefit is commensurate with the risk.

In wounds and perforations of the stomach the indications for surgical intervention are clear, for nothing can be accomplished otherwise. Peritonitis must be prevented or arrested. It is fortunate that the outlook in these cases is good if undertaken in time. The contents of the stomach and upper intestine are usually aseptic, but intensely irritating, and if the perforation is closed and the peritonæum cleansed before the irritation has provoked septic peritonitis, convalescence is, as a rule, smooth.

I have only lost one patient with perforating ulcer of the stomach or duodenum operated upon within eighteen hours of the perforation. This patient had been living for twelve years only by the help of the stomach tube, having an obstructing ulcer at the pylorus and enormous dilatation of the stomach. The operation was within twelve hours of the perforation, but the pyloric region was so infiltrated that the large perforation could not be closed, and pylorectomy had to be done. The peritonæum was carefully washed out, and convalescence was smooth until the twenty-first day after operation, when there suddenly developed a diffuse peritonitis due to the rupture of an abscess which had developed about a remnant of food accidentally left behind in the peritonæum. A second laparotomy revealed a diffuse peritonitis and many adhesions, evidently the result of the repair of the peritonitis following the perforation. Again convalescence seemed assured, but he developed acute intestinal obstruction from a band at the end of a week and died. This man was thirty-six years of age; for eighteen years, just half his life, he had had distinct symptoms of pyloric ulcer, and for twelve years had existed only through lavage, yet no one had advised surgical intervention, until the indications had become too clear.

This brings us to the second group; the conditions that can be helped by improving the drainage of the stomach. Drainage of the stomach is improved surgically by, mainly, two operations, gastroenterostomy and Finney's pyloroplasty, of which the former has by far the wider application, pyloroplasty being restricted to simple pyloric stenosis unaccompanied by ulceration or adhesions. If the pylorus is simply compressed by a band or adhesion, or by a tumor, the removal of this also improves drainage.

Naturally, the only conditions that can be helped by improved drainage are those that interfere with normal drainage, that is, the escape of the contents of the stomach. Although it would seem needless to assert this fact, it is often overlooked. Consequently, gastroenterostomy and pyloroplasty are only indicated when the normal drainage of the stomach is imperfect or interfered with. Furthermore, gastroenterostomy is distinctly contraindicated unless this is so, for the occurrence of the vicious circle seems to be almost entirely due to the presence of normal drainage through the pylorus; Cannon's experiments tending to prove that with the pylorus open, the stoma does not functionate except in allowing food, which had already entered the duodenum through the pylorus, to pass back again into the stomach. However, this postulate does not demand organic obturation of the pylorus, for we find clinically that ulcers which only obstruct by interfering with the motility of the pylorus through induration or possibly by inhibition from pain are, as a rule, sufficiently obstructive to prevent untoward symptoms after gastroenterostomy. Yet we must only expect the most gratifying results from gastroenterostomy in cases of real pyloric obstruction.

Understanding the limitations of these operations, we may now precede to an enumeration of the conditions we may hope to help or cure with them.

* Read before the Lake Keuka Medical and Surgical Association at Grove Springs, N. Y.

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These are, briefly, pyloric obstruction, intermediate obstruction, or hourglass stomach and ulcer.

Pyloric obstruction may be classified into (1): Benign; comprising congenital and those caused by the cicatrices of ulcers, by benign growths, by kinks, and by extrinsic pressure from adhesions, growths, etc. And (2): Malignant pyloric obstruction, that is carcinoma.

In pyloric obstruction, no matter of what variety, operation is conceded by all to be the proper treatment, for the simple reasons that internal treatment at the best is only palliative and surgery affords such brilliant results. Even in the case of infants wasted by starvation from congenital pyloric obstruction, operation has saved many, and all we must beg for is an earlier recognition of the condition and resort to operation.

The cancers of the stomach most amenable to operation are those at the pylorus, chiefly because they obstruct early. Taking all together, the great majority of conditions, curable by surgery, cause some obstruction of the pylorus, and consequently the most important symptoms of all are those of pyloric obstruction. Stagnation, ever so slight, particularly if increasing and attended by visible peristaltic waves in the epigastrium, demands surgical intervention. Do not wait for tumor, diminished hydrochloric acid, or dilatation. Dilatation by itself is not always an indication. It may result from atony or gastroptosis. Exceptionally, as has already been stated, these in themselves, by kinking or otherwise, cause obstruction, and may be helped by operation.

Hourglass contractions practically always require surgical interference. However, since the indications for specific procedures are so varied and the condition so uncommon, I shall not go into detail about them.

In ulceration of the stomach without distinct evidence of pyloric obstruction, the indications for improved drainage of the stomach are not so clear; nevertheless, we find clinically that a number are distinctly benefited if not cured by gastroenterostomy.

A short consideration of the morbid anatomy of ulcers may throw some light upon the subject. In the first place, we must include ulcers of the duodenum with those of the stomach, since they are essentially the same in origin and character, and present the same indications for treatment as the common round or peptic ulcer of the pars pylorica and pylorus. They occur in the portion of the duodenum unprotected by bile, that is between the pyloric sphincter and the papilla.

We commonly classify ulcers as acute and chronic, and assert that the first should be treated medically and the second surgically. The terms are in a way good if we bear in mind what they mean. Possibly the terms early and old, although practically the same, would be better. To illustrate the difference, we may compare them with ulcers we are all familiar with, namely, those of the leg, for the anatomy is similar, although the causation may be different.

An early ulcer of the leg will readily heal if we remove its causes, possibly irritation, infection, faulty circulation, or a combination of all; but the old ulcer, with thick base and margins of dense connective tissue contracting upon and cutting off the circulation of its granulations, is a different matter, and we may have to incise its base, or remove it, before healing takes place. So in the stomach, the early ulcer may respond to rest and diet, but the old ulcer is beyond such measures and requires a more complete removal of the causative factors and even of itself when practicable, for, according to Graham, there is a history of ulcer in sixty per cent. of cancers of the stomach. But the classification of ulcer of the stomach into acute and chronic, or early and old,[1] is inadequate. It describes phases particularly of the round or single ulcer, and there are other varieties. For instance, minute erosions occur which may be single or multiple, the latter are sometimes observed in connection with cirrhosis of the liver: They often give rise to severe hæmorrhages, and it is a question as to whether then tend to persist and become chronic, and as to whether they will not respond to internal treatment as well as to gastroenterostomy. Still another variety of multiple ulcers occur. For example, in a patient I recently operated upon, the gastric mucosa was tense and contracted as if by a chronic inflammation, and its surface, at least in the pyloric portion, was studded with ulcers with bases and margins distinctly infiltrated with connective tissue, showing their age and persistence. This patient, although recently operated upon, has been markedly benefitted by gastroenterostomy. The condition is that of ulceration engrafted upon a chronic gastritis, but with the symptoms and hyperchlorhydria of typical ulcer. The conditions so far mentioned, of course, are entirely distinct from the ulceration of the specific infections, tuberculosis, and syphilis.

Another classification of ulcers has a most important bearing upon the question of treatment, namely, that by the position of the ulcer. In this classification we may place ulcers of the pars pylorica, the pylorus, and duodenum in one group, and the ulcers of the cardiac portion of the stomach in another.

Ulcers of the first group are in the essentially motor portion of the stomach and subjected to various mechanical insults, both from the contractions of the stomach walls and from the passage over them of food and irritating secretions. Furthermore, old ulcers in this situation, on account of their size and dense connective tissue surroundings, interfere with the motility of the stomach even if they do not actually obstruct.

Ulcers in the cardiac portion of the stomach, on the other hand, are in the quiescent, or stroage, part of the stomach which does not actively contract and grind up the food, and from their position cannot interfere with the propulsion of food through the pylorus. It is possible, however, that they may cause reflex spasm of the pylorus, but it is more reasonable to suppose that pylorospasm is more likely to be caused by an ulcer situated in the pyloric region and be analogous to the muscular spasm observed in joint disease. I am not aware that any observations have been made in regard to this point, and for the present it must remain *sub judice.*

From what I have stated in regard to the nature and position of ulcers, it must be apparent that these

[1] Mayo uses the terms nonindurated and indurated.

factors have a great bearing upon the question of treatment. In the first place, we may expect the recent nonindurated ulcer to be healed by the temporary rest that is afforded by a course of medical treatment, while the old indurated ulcer would only be temporarily benefited. In the second place, we cannot expect as much benefit from gastroenterostomy when the ulcer is in the cardiac portion as we may when it is in the pyloric region or in the duodenum, for the rest of a cardiac ulcer is not particularly enhanced thereby and, moreover, there is danger of the vicious circle. It may be said that gastroenterostomy promotes healing by reducing or neutralizing the hyperchlorhydria that accompanies ulcer. Undoubtedly this is so, but its risk is too great unless there is a distinct indication for drainage also. Even in ulcers of the pyloric region and duodenum, we occasionally find when they do not obstruct evidences of the vicious circle after gastroenterostomy, but there is a remedy for this, excision of the ulcer is indicated, thus narrowing or obliterating the pylorus, which latter, of course, could not be accomplished by the excision of a cardiac ulcer. Consequently, the only operation applicable to the cardiac ulcer is excision.

Having formulated the rules for operation from the anatomical standpoint the question is, how shall we apply them? The answer is simple.

The recent ulcer is recognized by the absence of antecedent symptoms, and to make sure, we should not operate for ulcer until a course of internal treatment has failed. The position of an ulcer is recognized by its symptoms.

Ulcers of the cardiac region, being in a quiet region and not subjected to the strain and pressure present in the pyloric region during digestion, do not give such marked and constant symptoms, and in fact the first symptom may be a perforation or violent hæmorrhage. Again, the relative position of the ulcer to the pylorus can usually be fairly accurately estimated by a careful attention to the relation of the pain to the ingestion and digestion of food. When there is true pyloric obstruction the problem is simple. Again there is often local tenderness or even a mass to aid us.

Having pointed out its limitations, it remains to state what surgery can accomplish in the treatment of benign stenosis and ulcer, and to compare the results with those of internal treatment. In the first place, it is difficult to obtain a fair comparison for the cases that coming to operation have necessarily been medical failures, while the medical statistics contain all those that are favorable for medical treatment.

Of five hundred cases treated medically in the London Hospital, eighteen per cent. died and forty-two per cent. were not cured. The nearest we can get to the percentage of medical cures of chronic ulcers is from Russell's statistics who gives 14.9 per cent. In properly selected cases we expect almost uniform results from surgical treatment. When there is coexistent pyloric obstruction the results are absolutely ideal. In regard to the danger, including postoperative complications, the mortality of gastroenterostomy, the usual operation, is well within five per cent. Moynihan reports one hundred and fifty-three operations for ulcer, excluding hæmorrhage and perforation, with two deaths. The Mayos less than three per cent. in their last one hundred and fifty gastroenterostomies, and only one death in the last eighty-one done for benign disease. In thirteen gastroenterostomies for ulcer, excluding hæmorrhage and perforation, I have had no deaths. Furthermore, these patients have been the most grateful, as a class, I have had.

The indications for gastroenterostomy for hæmorrhage from ulcers, coincide in the main with those already formulated for ulcer in general. Still the experience of some of us, Moynihan in particular, tend to prove that it may stop hæmorrhage from ulcers for which it would not ordinarily be indicated. For instance, he has reported cases of severe hæmorrhage from multiple erosions and early ulcers which could not in any way have interfered with pyloric drainage, in which the bleeding had ceased immediately upon the performance of gastroenterostomy. This immediate result may be due in some instances to what would ordinarily be very objectionable, namely, the entrance of the bile through the stoma, i. e., the vicious circle, and consequent neutralization of the gastric juice and inhibition of autodigestion.

As a rule, repeated small hæmorrhages mean an old indurated ulcer, but violent hæmorrhage may occur from an old ulcer as well as a recent one. If blood appears in the stool, a duodenal location is probable, particularly if none is present in the stomach contents, otherwise the character of the hæmorrhage throws little light on the situation of the ulcer. In general, it may be stated that hæmorrhage from an early ulcer may respond to medical treatment, while there is nothing to be gained except time in so treating hæmorrhage from an old ulcer; also that operation should be done when repeated hæmorrhages endanger life, no matter what the character of the ulcer. It must also be remembered that excision of the ulcer, when it can be done, offers an immediate solution of the difficulty. In a previous paper I formulated the following rules: "A single large hæmorrhage, without previous symptoms of ulcer, should not be operated upon, but when there have been antecedent symptoms of ulcer, operation should at once be performed. Also cases suffering from recurrent hæmorrhages, whether small or large, should be operated upon."

However, making rules is easy, and the fact remains that progressive depleting hæmorrhage from the stomach is a most fearful condition and one which taxes the judgment of the practitioner to the utmost extent. However treated, the mortality in these cases will be high. Moynihan reports nineteen recoveries from twenty-two operations for hæmorrhage. My results have been much worse, and I have lost fifty per cent. of my cases with the poor consolation that those that died were otherwise, if not actually, hopeless.

We now come to the third group of operative procedures, namely, partial excision or gastrectomy. Total gastrectomy if ever, is only indicated in the most exceptional instances. When the pylorus, with only the adjacent portions of the stomach and duodenum is removed, the operation is known as pylorectomy, while partial gastrectomy usually infers the removal of the pylorus with a considerable

amount of the stomach. When only a small part of the stomach wall, such as an ulcer, is removed the term excision is employed.

Carcinoma is the main indication for pylorectomy and partial gastrectomy, but not infrequently the pylorus, with the adjacent portion of the stomach, should be removed for ulcers, particularly when large or multiple. In fact, as has already been stated, on account of the possibility of malignant degeneration, the excision of ulcers when practicable is always indicated.

In cancer of the stomach there is no question as to the propriety of operating, unless we feel certain that it has advanced so far that there is no hope of good even from a palliative operation such as gastroenterostomy. But if we wait until we can say, this patient has cancer therefore he should have an operation, we shall find that in the great majority of instances the hope for cure and even for palliation is passed. We must, then, determine upon a set or group of symptoms which, when present, will indicate an operation, although they are not diagnostic of any one condition. I firmly believe that until we take this stand, we shall accomplish little toward the cure of gastric cancer. In fact the lack, rather than the presence of a diagnosis, is the indication for surgical interference.

In support of these statements I simply report my own experience. Of twenty-four cases operated upon for diagnosis or for the probability of accomplishing something, six could not be benefitted in any way; gastrectomy for feeding purposes was done in two; gastroenterostomy to improve drainage in ten; and partial gastrostomy in only six, and one of the latter cases was in reality too far advanced. Therefore, there was a chance for cure in less than one quarter of the cases.

How shall we determine the indications for interference in these cases? Do we need to be specialists? Must we be familiar with the delicate chemical tests for the qualitative and quantitative analysis of the gastric contents? By no means; all we need is a knowledge of the use of the stomach tube and some familiarity with the methods of abdominal examination.

In arriving at a diagnosis, the probabilities of carcinoma must be taken into account. The stomach is the third seat of frequency of all carcinomata occurring in the male and female, but the first in the male. Symptoms of indigestion occurring without explainable cause and increasing steadily are always most suspicious and particularly if in the cancer period of life. If in such a case evidences of motor insufficiency, however slight, can be obtained the indication is clear. Absence of free hydrochloric acid is an untrustworthy sign. It was present in excess in two cases of advanced carcinoma I operated upon last fall. Its absence is more than likely proof of inoperability. Almost the same may be said of any of the usual diagnostic symptoms of cancer. Of course any of these signs, such as tumor, may be present and the case be still operable, but the point is we should not wait for any one sign. It is fortunate that cancer occurs much more frequently in the pyloric portion than in the rest of the stomach where it not only gives symptoms earlier but is much more readily excised.

The lymphatic extension of carcinoma from the pyloric regions is wholly along the lesser curvature following the coronary veins toward the cardia. In the course of the lymph vessels are several lymph-nodes which act as a barrier and localize the disease. This whole region is readily removed and consequently it is easier to accomplish radical removal of cancer of the stomach than cancer of most other regions. These facts have only been fully appreciated for the last few years and the operations now done are much more radical than they were, although no more extensive. Consequently, we have good reason to expect better results. The immediate mortality of the operation has also decreased, partly through better technique, but also through better postoperative treatment. I find that the operation is well borne, unless the patient is in a starved condition. The last patient but one I operated upon, sat up in bed on the second day and shaved himself on the fifth day after operation. In six weeks he gained thirty pounds.

The operation takes about an hour and a quarter to an hour and a half, and is not difficult, for the stomach is thick and easy to manipulate. I have always closed the cut ends and performed a posterior gastrojejunostomy. As before stated, I have had few cases in which the operation was practicable; in all only having done six partial gastrectomies for carcinoma. The first done four years ago was still alive two years later, since then I have lost track of her. Two have been done within the last few months and are both well and hearty. Three have died, in one the stomach separated from the intestine on the ninth day, the button cutting through. Two died of ether pneumonia. I now prefer the suture to the button, and by sitting the patients upright after the operation the danger of pneumonia is averted.

The Mayos' statistics, with which you are no doubt familiar, give us a better idea of what can be accomplished by a good technique coupled with early diagnosis. In eighty-one partial gastrectomies the mortality was 14.5 per cent., in their last twenty-five the mortality was only four per cent., twenty-five per cent. were living three years after operation. This showing is as good as for cancer in any part of the body, excepting the face.

In the cases of cancer obstructing the pylorus that are too advanced for removal, gastroenterostomy gives marked relief and is well worth doing. In ten cases of this kind I have had one death from the operation.

I do not think we should refuse operation in any case where there is a chance for benefit, particularly when drainage of the stomach is interfered with. I remember one case in which there was a large mass, and the presumption was that there was an extensive inoperable carcinoma. Operation revealed an hourglass stomach, surrounded by an inflammatory mass which subsided after a plastic operation and gastroenterostomy. All of which helps to prove my main contention, namely, that the main, although not the only, indication for surgical interference in diseases of the stomach is evidence that it is improperly performing its motor functions, that is, emptying itself.

601 Madison Avenue.

A STUDY OF SCLEROSIS OF THE CORONARY ARTERIES.

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It is curious and interesting to note how frequently we turn our medical studies to subjects which were considered long ago and oftentimes so fully elaborated that modern investigation has but little to add in essential to the conclusions which were early reached many times by crude and primitive methods. This tendency, of which we have many examples, is a necessary and beneficent one, since in our close application to the newer methods we are often prone to overlook or to relegate to positions of minor importance disease states of great significance, and it is well from time to time to return to a careful study of these subjects which we may have forgotten even exist.

Edward Jenner, in 1775, first recognized the importance of coronary sclerosis and, though Heberden, in 1768, had described the more striking manifestations of the condition, he had not traced the relationship between the clinical picture and the underlying anatomical lesion. This remarkable discovery was reserved for Jenner, who drew his conclusions from changes seen at an autopsy. Soon after he made the first clinical diagnosis of coronary sclerosis in the person of his friend, John Hunter, who had first shown him the lesion at the post mortem table. How many of us now with all our modern accurate aids to diagnosis dare enter such a conclusion on our bedside charts?

I have been especially attracted to the study of this condition, not only on account of its great importance, for the nutritive functions of the body rely in large part on the heart, and the heart itself is absolutely dependent on the coronary arteries, but also because of the great frequency of lesions of this arterial distribution, and yet the infrequency with which the condition is diagnosticated. I believe that a few minutes' study this evening will amply repay us, and may perhaps quicken some of us to a more careful study of that large class of cases commonly diagnosticated as nonorganic heart lesions, conditions much more frequent and, as a matter of fact, much more serious to the patient than the less common true diagnosticable organic cardiac disease. I am also particularly anxious to attract your attention to the fact that sclerosis of the coronary artery is but rarely connected with that clinical symptom angina pectoris which many clinicians are too apt to consider as practically the only diagnostic sign of sclerosis of the coronary arteries.

Concerning the frequency of coronary disease, Quain found it present in eighty per cent. of cases after the fortieth year of life. In my series I have found it in such degree as to seriously affect the nutrition of the heart muscle and nerves in 270 out of 1,000 consecutive autopsies.

It has been frequently stated that the condition is relatively more common in men than in women (Lausane and Lartigau). This does not appear to be markedly obvious in my series, since of 400 cases which show arterial disease of my 1,000 autopsies, 195 of the 253 males showed thickening of the coronaries, while of the 126 women 75 showed the same change.

In so far as my studies go, also the influence of age has not been as important as appears from most statistics, indeed one of the chief points which I wish to bring out in this paper is that the disease does exist commonly in youth or in relative youth, when the condition is amenable to treatment. It is one of the most regrettable facts in this study that we have grown too largely to infer that sclerosis of the coronary arteries is a senile and therefore an inevitable disease. This erroneous idea has diverted diagnosis and treatment in countless cases, where I believe properly instituted measures may have legitimately been supposed to have had beneficial results. Though the average age of my cases has been about forty-five years, several occurred in mere youth, one of the most marked being found in a boy of fifteen years. Senility per se was concerned in the ætiology of my 270 cases but sixteen times. I am very anxious to impress upon you the fact that coronary sclerosis is not dependent on the number of years, nor entirely on the methods of life during those years (though this last is of course a most important factor), but on those other ætiological factors which I think I shall be able to show you are more or less under the physician's control.

It is an extremely difficult matter to determine from the complex histories of cases, particularly such as we secure in a hospital, just which are the important ætiological factors concerned in the production of any given condition. This becomes more and more difficult as we ascend in the grades of society, particularly to those strata where modern life becomes a matter of great complexity, consequently I do not recommend that my statistical ætiological factors be accepted as conclusive in any definite way. The larger part of them were taken from hospital cases, but from experience in private practice, and particularly as medical officer of a regiment composed of active young New York business and professional men. I am convinced that the disease is much more frequent in the higher than in the common hospital class.

In so far as my statistics may be relied upon, the abuse of alcohol appears to have been the most common ætiological agent. This history was obtained in 107 of my 270 cases. In explanation I should, however, perhaps say that the source from which I have collected this material has included a large and very active alcoholic service. Nephritis appears as the second most common probable ætiological factor, being present in thirty-five cases. Syphilis also appears as a common agent obviously, when we consider the frequency of arterial disease in this infection; it was found in thirty instances. Of long standing debilitating diseases, tuberculosis appears twenty times, cancer four, diabetes six, rheumatism and myelitis three times each. Of those conditions aside from nephritis, which

cause hyperarterial tension Graves's disease appears twice, acromegalia seven times, plumbism twice, and, I regret to say, excessive use of tobacco in nine instances. In regard to the production of coronary disease from the use of tobacco I wish to state that I have found it a very frequent factor, particularly in those clinical cases which have come under my observation. One appears of sufficient interest to pardon brief mention. It is that of an active business man, thirty-six years of age, who has from early youth been excessive in the use of tobacco, otherwise his habits and course of life are temperate, except that he has been exposed to the great strain of active business in New York city for the past ten years. He first came to me showing a typical dilated heart, anginal pain, irregular heart action, blue lips and fingers. The usual methods of treatment soon restored him to a comparatively normal condition, but his first cigar, after apparent recovery, brought on an attack of acute angina, followed again by cardiac dilatation. The cigar experiment has since been repeated without my sanction, on several occasions with the inevitable result that I have been called in. So sensitive is the patient now to tobacco that he has been obliged to desert his favorite club, where the smoke laden atmosphere invariably brings on syncopal attacks. I may also remark that I have been able through the use of tobacco smoke and tobacco extract, long continued, to produce experimentally somewhat analogous changes in the hearts of rabbits.

Obesity was found as a distinct ætiological factor in four instances. Statistics from private practice, however, furnish a much higher percentage of cases which are clearly caused by this condition. The factors concerned in the production of coronary disease in adiposis are complex, not only does the increased amount of food ingestion present in the average case demand an increased action on the part of the myocardium, but the bulk of the tissue which subsequently demands nourishment is increased. In addition oxidation is commonly diminished, superadding a more or less toxic condition, while deposition of fat in the myocardium further embarrasses the action of the heart muscle, calling for increased nourishment with consequent arterial degeneration. I think that, almost without exception, the fatty heart shows coronary sclerosis, though it is sometimes difficult to definitely decide between cause and effect in such instances. I believe that all of you will agree with me that many of the clinical manifestations of fatty heart are very similar to those of coronary disease.

Great stress has generally been laid on the production of coronary disease by physical overwork, and the condition has been frequently reported as most common in laborers. There are several factors which I believe have led us to a too hasty and erroneous conclusion in this regard. One of the most important of these is that as yet the greater part of our autopsical material is derived from hospital cases in which as a matter of course laborers predominate. Though this apparent condition is also shown in my statistics, I have entirely disregarded them for the reason that, where autopsies in private practice have been obtained, I have found a relatively much higher percentage of arterial disease in the so called upper classes. That physical overexertion is a factor in the production of coronary disease I by no means deny, but it is not in the well trained or habitual athlete, such as the common laborer, the sailor, or soldier that this type of arterial disease appears. Nature in these instances has become habituated to the high pressure regularly present, the elastic layers of the vessel have correspondingly hypertrophied, and actual disease of the arteries is not found to any great extent, where other factors such as the excessive use of alcohol are absent. On the contrary, coronary sclerosis is common in that class of athletes which we may call specialists; sprinters, hurdlers, high jumpers, and even the football player. I do not believe that the frequency of the disease in these individuals is due to excessive exercise nearly so much as to the fact that most of these athletes are accustomed for the greater part of the year to lives of ease and, except when in training, to food the character and quantity of which is far from desirable. When the excessive activities, consequent upon our bad methods of sporadic training and highly specialized athletics, call suddenly and unexpectedly upon the vessels to sustain high pressures, then arterial disease with its attendant manifestations develops. From a considerable experience with college athletes, examined when again called upon to do heavy athletic work several years after leaving the training table, I am convinced that coronary disease is extremely common in these men and that in many cases it is responsible for the cardiac dilatation which is so frequent in the later life of this large class. I am told by military surgeons that the methods of training and life in England, where training and athletic work extend from boyhood to old age, renders this condition much less common there than here.

The relative great frequency of angina pectoris in the professional as compared with the hospital classes furnishes in itself a most potent argument indicating the high occurrence of coronary sclerosis among these workers, and we must remember that only a small percentage of cases of coronary sclerosis present the symptoms of angina in such degree as to make it a prominent character. The great nervous tension under which we of the great cities must live, particularly those of us engaged in professional work, is unfortunately apparent to you all. When, as in the case of the physician or lawyer, these great mental strains are necessarily connected with irregular and late hours, insufficient amounts of rest and normal exercise as well as irregular alimentation, at times too little at other times too abundant, it is small wonder that the demands of professional life render us most liable to this type of cardiac disease. Though gout and rheumatism are mentioned as frequent ætiological factors concerned in the production of coronary sclerosis, they have not appeared so to me, but it is possible that the condition producing these diseases may cause coronary thickening.

Types of Coronary Sclerosis.—It is not my purpose to enter into the details of the various histological changes concerned in the lesion under consideration, such a discussion would lead us too far afield from those aspects of the disease to which I wish particularly to call your attention, I shall therefore be as brief as possible with this portion of my paper.

One of the most frequent types of the disease is seen in a process where, in the early stages, but little change is found in the walls of the coronary arteries proper, but the chief alterations are in the aortic arch and consist in an arteriosclerotic process as a result of which small masses of sclerotic tissue are formed in the subendothelial layers of the aorta about the origin of the coronary arteries. Sometimes this process may be of such degree, as reported by Potain, to almost completely block the entrance to the coronary vessels. This is one of the most common forms of the disease when it occurs as a local manifestation of a generalized arteriosclerosis. Of course the result is a great diminution in the amount of blood which is allowed to enter the coronary vessels. I have also found this type of coronary disease relatively common after endocarditis, particularly of the aortic ring, when naturally the inflammatory process has extended upward into the cone, either as an ulceration or as a diffuse reactive inflammation with subsequent necrosis and fatty degeneration of the newly formed tissue.

In my experience the most frequent type of coronary sclerosis is an endarteritis in which proliferative alterations are introduced in the subendothelial layer of the intima. These hyperplastic alterations are commonly associated with or followed by necrosis or fatty degeneration, and the formation of atheromatous cysts; the result is the limitation of the lumen of the vessels and a consequent decrease in the amount of blood which may circulate through them. This process may be diffuse, affecting practically the coronary vessels, or it may be localized to a single trunk, perchance to a small area of one distribution. This form of coronary sclerosis is the kind found perhaps most frequently in old age, alcoholism, and in those cases where the disease appears to be due to life habits such as we have just discussed in the professional classes.

When the apparent ætiological factor is the circulation in the blood of some toxic substance as in chronic tuberculosis after the various infectious diseases, and in many cases of obesity, the changes most pronounced are usually primary alterations in the media or muscle coat of the arteries. These may consist primarily of a fatty degeneration of or an interstitial hyperplasia combined with muscular atrophy, as a result the muscle coat of the coronary vessels is largely diseased and replaced by foreign tissue. Little or no obstruction of the lumen of the trunks may be found in this form, indeed in many cases the general calibre of the lumen is increased, neither do the walls appear markedly diseased to the naked eye, but the elastic and muscular capabilities of the vessels are destroyed in large part, and it is in this class of cases that cardiac muscle often appears to suffer most from malnutrition. When this type is associated with subsequent high blood pressure, as in the development of a nephritis, aneurysmal formation is not uncommon.

Certain cases of coronary disease appear to show primarily pathological changes of the adventitia in greatest degree. This is the type which seems to be most frequent in athletes in cases of gradual but persistently high pressure, as in chronic interstitial nephritis. Periarteritis is also the most common type of change seen in syphilis. Of course in no case do we find the alteration exclusively limited to the adventitial coat, for to a greater or less degree the process has extended into the media and intima. Indeed, it is perhaps as yet unwise to attempt any definite classification of arterial disease which affects the coronary vessels, since, as elsewhere, the types are merged one into another in often unrecognizable stages.

In my experience true acute arteritis is rare in the coronary arteries. It is probably most frequently set up by the dislodgment of a particle of ulcerated material in cases of aorteritis or endocarditis, and the sweeping of the infected mass into the coronaries, where it may light up an acute inflammatory process. More commonly coronary thrombosis ensues which is immediately followed in a considerable number of cases by death or by cardiac infarction and death from myocarditis and cardiac rupture. However, cardiac aneurysm may develop when an immediately fatal issue does not take place.

Changes in the Heart Muscle.—It would seem that the changes dependent on coronary sclerosis might easily be reproduced in animals, and experiments have been conducted with this point in view by many students, among whom may be mentioned Erichson, who carried on observations in 1842. Panum, von Bezold, Samuelson, and many others have attempted thus to reproduce the alterations found post mortem, but with indifferent success, since in all cases the changes have necessarily been acute ones brought about in a previously healthy artery, and in most instances death has followed too early for any definite muscular lesions to develop. Recently the use of adrenalin and nicotine (experiments conducted by Pierce, Loeb, Adler, and others, corroborated by myself) has produced modifications more similar to those discovered post mortem in cases of coronary sclerosis.

Of my 270 cases all but fifteen showed lesions of the myocardium apparent to the unaided eye. Two hundred and fifteen presented changes in the heart muscle of sufficiently severe degree to be noted as contributary to the cause of death. These figures show at once the great import which we should attach to disease of the coronary arteries in our consideration of cardiac diseases.

The most frequent lesion presented was fatty heart. In this classification no distinction was attempted between fatty degeneration and fatty infiltration, as the conditions are usually more or less associated. This is quite as might be expected, and is in thorough accord with lesions which result in other organs from similar altera-

tions in the bloodvessels, for local as well as general conditions of anæmia are conducive to fatty degeneration. It is, however, highly probable that in a certain number of cases fatty infiltration of the heart, associated with general obesity, as is generally the case, is really causative of the coronary disease rather than the coronary disease of it.

Brown atrophy of the heart was found in sixty-four instances, and in passing I should like to draw your attention to the close association of this type of atrophy with chronic alcoholism, nearly all cases of which show this lesion. In so far as functional possibilities are concerned the alterations in brown atrophy are very like those in fatty degeneration with which brown atrophy is not very infrequently combined; in my series this association was found in fourteen cases.

Fibrosis of the myocardium was found present in twenty-four instances, a few of which were associated with brown atrophy and fatty degeneration, not considered in the tabulation. The relationship of interstitial myocarditis with disease of the coronary arteries has long been recognized and is fully accepted in nearly all current textbooks. As a rule I believe that it occurs as a terminal stage or sequence of long standing cases of simple myocarditis, a condition which is, however, found in but eighteen of my cases. Acute myocarditis, as a result of coronary disease, mostly occurs when the changes in the artery have been of such rapid development that nutrition is quickly withdrawn from the myocardium. Necrosis of the muscle cells and subsequent inflammatory reaction with absorption and fibroid replacement of the diseased tissue follows.

Thirty-five cases of the series showed well marked cardiac hypertrophy. These were for the greater part associated with changes indicative of, or with a history suggesting a more or less consistent elevation of the blood pressure, as in nephritis.

Actual dilatation, demonstrable post mortem, was presented in but twenty instances, though it is manifest not only from the clinical symptoms of the cases, but also from the changes in the myocardium that cardiac dilatation is much more frequent in the course of the disease than is indicated from these statistics. It is evident that dilatation is entirely to be expected, for example, in cases of fatty degeneration or in fibroid myocarditis.

Aneurysm and cardiac rupture were found as direct results of disease of the coronary vessels in two instances each.

From this brief summary it is apparent that disease of the coronary arteries produces alterations in the heart, which are of the gravest significance. The immediate results may be summarized as a degeneration of the myocardium with a tendency toward the dissolution of the heart muscle cells, and replacement by an inert nonfunctional tissue that is scar or connective tissue. In addition to these slowly developing but inevitable results we have the acute manifestations which follow from an increased liability to coronary embolus or thrombosis with immediate or imminent death.

Symptoms.—The symptoms of sclerosis of the coronary arteries are not definite and clearly marked, often even in the later stages of the disease when the condition has passed beyond the control of the physician, and when death is sooner or later inevitable.

In the early stages very little is ordinarily complained of, and even the closest examination may fail utterly to demonstrate anything clearly indicative of cardiac disease.

The patient commonly shows more or less cardiac arythm, usually excited by apparently insufficient causes; thus in a subject accustomed to physical exertion, arythmia may develop on going upstairs, after walking rapidly, or even as a result of moderate psychical excitement. As a rule the patient is aware of these peculiarities and often complains of a sensation of weight, sometimes of slight pain in the cardiac area, the degree of which is more or less on the amount of exertion. The intensity of the heart sounds varies even from moment to moment, and some cardiac asthma may be seen, while slight blueness of the extremities, skin, and mucosæ appears. As a rule the pulse shows, in addition to arythmia considerable variation in volume, the lumen fills slowly, and even the palpating finger may detect alterations in pressure. Frequent use of the sphygmomanometer shows considerable variation in blood pressure which at times is raised to from 165 to 190 mm. or over, and at other times falls from 98 to 108 mm. In thin individuals it is occasionally possible to detect by percussion before and after exercise even slight degrees of cardiac dilatation, and as the case becomes more and more advanced, temporary murmurs may be noticeable.

As the disease progresses all these manifestations become more and more marked. There may be a constant sensation of discomfort in the region of the heart which under excitement or exercise may amount to actual pain, sometimes complained of as of a singular bursting character. General symptoms of cardiac insufficiency become apparent, and indications of general capillary engorgement develop. The liver and spleen may become enlarged and palpable, and exercise may cause the appearance of distinct cardiac asthma. The intensity of the heart sounds are as a rule increased, and accidental systolic murmurs are especially apt to be heard. Typical bradycardia in which the pulse rate may drop as low as 40 or 50 per minute may be seen, at other times the pulse is very rapid and weak, not nearly all the pulsations reaching the radial arteries.

The symptoms of well marked, fully developed, coronary sclerosis are sometimes striking, and as a rule are easily recognized. One of the most important subjective manifestations of some cases is that of sensations of cold in localized areas, as in the hands, feet, ears, or nose. Clinicians are prone to ascribe too much significance to the symptom of angina which has even been described as a disease by itself. As a matter of fact angina pectoris is but a symptom of coronary

sclerosis, and it is one of the least frequent of the condition, for it develops in only a relatively small number of cases of coronary disease. It is never measurable of the extent of coronary disease, though the symptoms become progressively more marked as the lesion becomes more accentuated. In the average case, as indicated before, the symptom does not extend beyond a feeling of pain or oppression in the region of the heart. Many theories have been advanced as explanatory of this anginal pain. That of Heberden, which has been adopted by Brunton and many others, is that it is caused by spasm or contracture of the heart muscle, very similar to the production of intestinal or gastric colic. Parry and Stokes attributed the pain to cardiac insufficiency, Trouseau considered it to be of neural origin similar to that of neuralgia, Traube thought it due to compression of the nerve element from overdistention of the heart. In my opinion the theory which logically explains the symptoms is that it is simply a typical anginal manifestation with which we are perfectly familiar in other distributions of arteriosclerotic disease.

It is precisely similar to many cases of so called temporal neuralgia which Dana showed a long time ago to be due in certain cases to spasm of the arteriosclerotic temporal vessels. The same pain is shown in erythromelalgia and in intermittent claudication; it occurs, as I have previously pointed out, in arterial disease of the pancreatic and other visceral arteries, when it is unquestionably due to arterial spasm. In all these conditions just mentioned the same intense anxiety, fear of impending evil, and at times actual terror frequently appears. I have at present in my wards at the City Hospital a case of marked arteriosclerosis of the temporal arteries in which attacks of intense anginal pain are almost invariably preceded by deep dejection, melancholia, and fear of death. Another case in which intermittent claudication with spasm of the radial and portions of the facial arteries occurs, complains constantly of these same aura.

It is unnecessary for us to go further into the symptomatology of typical attacks of angina pectoris, either with or without angina as a manifestation of coronary disease, since these symptoms have so often been described and are detailed at so great length in textbooks, that all are perfectly familiar with them. When the disease has reached this stage, even if the symptom of angina itself is absent, the look of intense agony, the cold sweat, retarded capillary circulation, together with the spasmodic character of the attack, makes the recognition of the disease perfectly apparent. The diagnosis of angina pectoris is also one of coronary sclerosis, though frequent cases have been reported without gross alterations of the coronary vessels. However, as I have pointed out earlier in this paper, microscopical examination is often necessary for the detection of the alterations of a degenerative character in the walls of the vessel, quite sufficient to cause the symptom of angina, which is distinctly due to spasmodic contraction of the coronary vessels.

I am perfectly convinced that many cases diagnosticated as pseudoangina pectoris are in reality coronary sclerosis in which the spasmodic contractions of the vessels is less marked than in manifest angina pectoris, and I greatly regret the fact that the diagnosis of pseudoangina is so commonly made, as it is rarely borne out by post mortem evidence. Even the hysterical angina, as described by so excellent an authority as Whitticker, stated to be due exclusively to emotional disturbances, while later the author admits in the same article the well known fact that psychical disturbances, flights of temper, and the like are notoriously apt to cause even fatal attacks of angina in coronary sclerosis. It is well for us to consider all cases of angina as indicative of coronary disease, until we are absolutely able by exclusion not only to eliminate gastric disturbances and neuralgic manifestations, but also until we can by close examination of the blood pressure, of the cardiac action and outline, and by careful study of the pulse and peripheral circulation to exclude, in so far as we are able, the possibility of coronary disease. The anginal manifestations which occur in nicotinism, alcoholism, and the like are in by far the larger percentage of cases due to actual lesions of the coronary arteries, a fact proved by anatomical studies applied to this condition, also verified by the high blood pressure now recognized as usually present in nephritis or in the excessive use of tobacco, alcohol, and perhaps tea and coffee in poisonous doses.

Diagnosis.—As I have already intimated, the diagnosis of sclerosis of the coronary arteries is by no means an easy matter, particularly during the early stages of the disease. Some of the most important data in this diagnosis are to be derived from the history and the establishment of a possible ætiology, the occurrence of arterial disease as apoplexy in the parents, the excessive use of alcohol, tea, coffee, and tobacco, or the presence of nephritis or of other diseases in which high blood pressure is to be expected. Occupation and temperament are to be considered. It is to be remembered that we are more apt to find diseased arteries in the myocardium of a man of sedentary habits whose blood pressure is sporadically raised under unnatural mental excitement, than in subjects who are habitually accustomed to physical work, or even to over physical exertion. The man of quick, irascible temper is the normal subject for coronary sclerosis.

Much stress is ordinarily laid in the diagnosis of coronary sclerosis on the detection of arteriosclerotic alterations elsewhere in the body, notably of course in those superficial arteries which are most available for inspection and palpation, the radials, carotids, and temporals. To a certain extent this is well founded, for in nearly all cases in which these changes are present it is quite correct to assume coronary sclerosis, thus in 152 cases in which diagnosis of arteriosclerosis of the peripheral arteries was made, the coronary arteries were found seriously diseased 116 times. On the other hand, nothing is more certain than that absence of detectable disease of the peri-

pheral arteries in no way excluded the diagnosis of coronary disease, for of my 270 cases of disease of the coronary arteries, arteriosclerosis of the peripheral trunks was detected ante mortem and post mortem but 116 times.

After considerable experience I feel justified in assuming the presence of coronary sclerosis of a greater or less degree in many cases where the blood pressure is above 180 mm., and particularly in those in which otherwise unexplained paroxysmal increase in the blood pressure is found, especially when intervening periods of low blood pressure are demonstrable. A slow, soft pulse is sometimes very significant of coronary disease, particularly when it is accompanied by a large and variable area of cardiac dulness and by more or less arythmia. Great dependence may often be placed on the character of the pulse, whether regular and with the beats of the same intensity. This sign is particularly valuable when moderate, not excessive exercise is indulged in during the examination. I have found this measure to quiet the average purely nervous heart in which simple excitement is responsible of the over action, while when actual disease of the myocardium is present, due in the vast percentage of cases to primary arterial disease, the rate is still more increased, and the pulse becomes irregular; of course this does not hold true in excessive exercise.

Œdema of the subcutaneous tissues, when unexplained by renal or hepatic lesions, is commonly attributed to circulatory faults which, in the absence of demonstrable valvular disease, may be logically attributed either to arteriocapillary fibrosis or to a myocarditis, which, as we have already intimated, is in a large percentage of cases directly due to disease of the coronary arteries.

Cardiac asthma in its most characteristic form sometimes becomes a diagnostic sign in coronary sclerosis. When it has been of slow development and is accompanied by no contraindicating manifestations it is not unfair to assume the presence of coronary disease; on the other hand, when the onset is sudden and accompanied by a history of physical over exertion, though coronary disease may or may not be also present, we are not justified in so diagnosticating. Of course, when acute cardiac collapse associated with sudden decrease of the strength and frequency of the pulse takes place rupture of the heart or coronary thrombosis is to be considered, conditions which occur almost exclusively in coronary sclerosis.

Pain in the cardiac region is one of the most important diagnostic signs of coronary disease, this symptom has already been discussed at considerable length, and I simply wish to state here my confidence in its diagnostic value, though of course it can be attributed to the coronary vessels only after a more or less exhaustive diagnosis by exclusion, though the peculiar heavy or bursting sensation is in itself more or less diagnostic.

It is unnecessary to consider the signs characteristic of angina pectoris, as they are fully discussed in the textbooks. As a rule this condition is relatively easy of diagnosis, and I believe that there can now be but very little question but that angina pectoris presupposes disease of the coronary vessels with spasm, though we must again recall that the extent of the anatomical disease is often no measure of the severity of the symptoms, or of the immediate gravity of the case, these points depending on the effects on the myocardium and on the degree of spasm of the arteries.

Treatment.—The treatment of arteriosclerosis of the coronary arteries may be best considered under that advisable for the early stages when the disease cannot be absolutely diagnosticated, but only presumed to be present, and that applicable when well pronounced instances are under question.

In the first class of cases I believe that the best means at our command are such as may perhaps be best classed as hygienic. Thus one of the very most important measures is the avoidance of great mental excitement, while on the other hand I believe that mild and pleasurable excitement such, for instance, as occurs in moderate but exhilarating exercise as horseback riding, is most beneficial. On the other hand, mental stress as in games of chance and physical contests as in tennis, baseball, and the like are to be strictly avoided. Moderate physical exercise is to be encouraged, immoderate always condemned, but each case must be considered by itself in this respect, and the physician must measure the desirability of the means in many instances by the effects of the exercise on the symptoms and signs of the patient. There can be no doubt but that a demand within the range of normal on a heart muscle, when it is just beginning to suffer from a lack of proper nutriment, is followed by a normal attempt on the part of Nature to reestablish the nutrient supply by arterial hypertrophy or otherwise. Pleasurable excitement may even be beneficial, whereas the excitement without the pleasant accompaniment will be wholly harmful, but sudden strain of all kinds is to be absolutely interdicted.

Further progress of the arterial change is to be combated by first eliminating, when possible, the causative factors. Thus, for example, suppurative foci are to be evacuated, improper articles of diet are to be avoided, alcohol and tobacco are to be forbidden, and elimination by bowel, kidney, and skin are to be promoted. I believe that the diet demands especial attention, since there can be but little doubt that arterial disease is dependent on a lack of balance between food intake and oxidation. Here, as before, a study of each individual case must be made, those foods and their quantities are to be determined in every instance by the best welfare of the individual patient. Thus, in the overly stout, fats and sugars are to be avoided, whereas in the thin they are often very desirable. Meats in certain cases, as in nephritis, seem to be contraindicated, while in the more lethargic individual they become the food of election. The amount of food taken must not exceed the demands of the patient, these facts can perhaps be best ascertained by study of the weight and of the character of the excreta. Over alimentation unquestionably predisposes toward arterial disease, and so also

does starvation. These same general statements also hold good in regard to the fluids.

As a rule in the early cases of this disease little or no medical treatment is needed, except as symptomatic medication may become occasionally necessary, as for the proper establishment of elimination or perhaps to facilitate digestion of absorption. Not infrequently, however, as in syphilitic cases, special medication becomes advisable. Potassium iodide, however, is useful in many nonsyphilitic cases, probably on account of its well recognized promotion of absorption. Digitalis and strophanthus are to be employed usually in small doses where cardiac irregularity or tachycardia develop, and ergot is one of our most reliable drugs. Oftentimes these drugs afford great relief from the pain, which is most likely caused by undetectable degrees of cardiac dilatation. When arterial spasm occurs or when the blood pressure is high, as in renal cases, lead poisoning and the like, the vasodilators are to be used. Personally I have grown to rely less and less on nitroglycerin for this purpose, except for immediate and very temporary relief. Hygienic measures, control of the fluid intake, and possibly the use, preferably per rectum, of chloral hydrate or of the more stable nitrates, are measures usually necessary. I have used strontium bromide with considerable success in some cases, but as a general thing, however, I think that drugs should be employed as little as possible in these early stages of the disease, and the development and progress of the lesions may be mostly stayed or prevented by hygienic measures, formulated after a discriminating study of the habits and life history of the particular patient.

All the means just spoken of are to be used also in the later stages, but here we cannot hope to prevent, and we are indeed fortunate if we are able to stay progress and render the patient comfortable and able to carry on the requirements of his natural business and social life.

I think that we are too much inclined to restrict exercise in this stage of the disease. This does not appear desirable to me except in very advanced cases, since it tends to favor muscular atrophy and facilitates over deposit of fat, particularly in the myocardium, and so also renders the heart less able to carry on its functions. Where cases are actually bed ridden, massage may in a certain degree comply with this demand, but passive movements are better, and suitable exercise is in my opinion best employed even when the use of drugs is necessary at first to make it possible.

Particularly in these cases and when anginal attacks are prone to develop, worry and excitement are to be avoided as much as possible. I do not, however, believe, even in anginal cases, that pleasurable excitement of mild degree is contraindicated, such as the listening to music or pleasant conversation, the reading of agreeable literature, and in many cases under the comforts of modern times travel is not only not harmful, but is actually beneficial. Anger and distressing situations are to be particularly avoided. I have even sent some cases to sea, though obviously bad or doubtful sailors should never be so advised. Of course, the very high altitudes should be avoided, though I do not think that our best conditions are always found at or near sea level. This is, I believe, largely a question of the natural habitat of the particular patient, and it should never be too abruptly altered. Some cases do best in a mild climate, others progress more favorably in the colder zones, but a temperate climate is on the whole most satisfactory, though change is often followed by benefit. Sunlight and fresh air are always to be provided for.

The diet must be light, but nourishing, digestable, but with sufficient residue to insure the regular movement of the bowels. The fluid intake must be carefully supervised, and from time to time it may be well to compare the fluid and urine by means of a chart. As a rule I believe that the fluids should be kept rather low. Elimination must be fully insured, and the use of baths, even of the cold water spray in some cases is to be advised, the particular mode of application being determined in each definite instance, in this matter the habits and personal preferences of the patient may be beneficially consulted.

Drugs must be used more or less constantly in nearly all instances, whether or not angina be present. Medication must, however, be very carefully supervised, and it is no exaggeration to say that in many cases a vasodilator may be necessary one day and the next a cardiac stimulant as digitalis, strophanthus or ergot, or a vasoconstrictor as strychnine or adrenalin.

For continuous use I do not think that we have a more reliable drug for general employment than the iodides. This holds true not only in specific cases where the action in the removal of gummatous deposits is well recognized, but also in the nonspecific case where actual improvement is often seen. Similarly mercury may be indicated, though I have used it very little except in syphilitic cases. As a rule I believe that the iodides should be used in rather small doses, from five to fifteen grains, three times daily, and I have ordinarily preferred the salt of potassium.

I have also used strontium bromide with success, especially where cases could not be under close supervision, and where vasodilation with sedation was required. The dosage should vary from seven to fourteen grains, once or twice daily. Where associated with nervous excitability, as is so often the case, or with more or less insomnia, strontium, or if you prefer other salts of bromine, are very satisfactory agents, the dosage depending on the amount required to produce the desired effect. I have never seen ill effects on the heart to follow this treatment, when intelligently carried out. In other cases, and particularly when in hospital or under daily inspection, chloral hydrate, preferably given in a single dose per rectum at night, often gives most satisfactory results, both as a vasodilator and as a hypnotic. I have so used this drug in very liberal doses, and I have yet to see a case in which harmful effects have been produced. I consider chloral one of our safest and most efficient vasodilators. Morphine in small doses is also indicated, and frequently is of great assistance.

Where immediate vascular dilatation is necessary as in anginal attacks amyl nitrite is our drug of choice. Nitroglycerin may be also so used, though it has but a temporary effect, and must be usually given in larger and more frequent doses than is commonly stated. A more enduring dilatation is secured by the use of sodium nitrite, but I am somewhat afraid of this drug when long used, not only on account of its effects on the heart, but also for its tendency to cause hæmolysis.

Digitalis, strophanthus, and ergot are our most valuable and reliable drugs for use in the average case of coronary sclerosis, where some of the most serious symptoms result from the consequent degeneration of the myocardium. Their use becomes a matter of eventual necessity in nearly every case, but they are to be employed cautiously, since their abuse or misuse may greatly aggravate the symptoms and may, I believe, even bring on fatal arterial spasm. I have chiefly employed the tinctures of the two former and the fluid extract of ergot, and I have always insisted on small doses and close study of the effect at frequent intervals. Where the patient cannot be seen frequently, I doubt if they should be used at all. Obviously where rapid heart action is present, associated as is very likely to be the case with cardiac dilatation, rest in bed, morphine, and the ice bag become imperative. Rest alone is one of our most certain and least harmful measures, but as has been already stated it may be enforced to an injurious degree.

I propose to enter into no discussion of the treatment of angina pectoris because I believe that it is but a rare and special symptom of a very common anatomical lesion, and you are all perfectly familiar with its management. The chief objects of this paper are to call your attention to the fact that arteriosclerosis of the coronary vessels is a very common state, it is back of most conditions of so called myocarditis, where the muscle changes are degenerative or proliferative in character, and it is responsible for many secondary circulatory complications, notably in the lung, kidney, and liver. The condition is difficult of diagnosis, and detection is by no means certain—its great frequency may, however, lend a strong probability to many questionable cases. I am certain that those of you who have carefully considered the lesion and have conscientiously studied its treatment, will agree with me that early and even occasionally late medical management is often very satisfactory and well repays in its results the more or less constant supervision necessary. It is well for us to realize, however, that for complete success, treatment must be instituted early, and that in any case it must be long continued, and that for beneficial results the physician must receive the hearty and thorough cooperation of his patient.

44 WEST NINTH STREET.

Do not be too hasty in resecting a strangulated loop of intestine. It is remarkable how frequently such loops become viable after long continued applications of hot saline solution.—*American Journal of Surgery.*

THE AMERICAN ABORIGINES FROM A HYGIENIC STANDPOINT.

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In presenting such a subject as this, it is scarcely necessary to say that our sources of information, whether historical or archæological, are meagre and scattered, yet sufficiently accurate to afford a good general idea of the hygiene, diet, medical and surgical diseases, and, to some degree, of the therapy, of the red men. It is easy enough to find reports from physicians who have dealt with the semi-civilized and quite corrupted Indians of modern times. There might be cited a very interesting extract, published in Vol. III of the *Buffalo Medical Journal,* and being some of the experiences of Dr. Meeks among the Choctaws in 1847. Further than stating that the idea that Indians never commit suicide is false, and that he had never seen an insane person among them, there is nothing of note in this article except some vestiges of ancient superstitious practices to be alluded to later. But it is obvious that Indians who have passed from the stone age to be hangers on at the heels of civilization are of very little interest to the archæologist and student of American ethnology, and that we must go back to the very beginning of the period of contact with European civilization to obtain any true conception of the real Indian. I shall deal mainly with the Iroquois, including the Kak Kwahs who inhabited both sides of the Niagara frontier, and the Confederated Five Nations, who inhabited eastern and central New York, and who dominated nearly the whole of North America east of the Mississippi about the middle of the seventeenth century. This limitation is taken partly because most of my own archæological study has been confined to their territory, and partly because historical data are more complete for these tribes and the Canadian Indians who were closely allied in blood to the Iroquois of New York State. For all purposes, the *Jesuit Relations* are more accurate and more valuable to the student than any other historical matter; for scientific study of the aborigines, these *relations* are of particular value for the reason that the French nation and the Catholic church furnished almost the only Europeans who had the faintest conception of dealing with the Indians as human beings, of becoming acquainted with them, of gaining their friendship, and of treating them with more than the most sordid and immediately interested ends in view.

All of the tribes with which the settlers of New England, New York, and Canada first came into contact, seem to have belonged to one or other of two language systems, the Huron-Iroquois and the Algonquin. It does not appear that there was any marked racial difference between these. The Esquimaux lay farther to the north, but had quite recently abandoned the New England coast.[1] Scientific study of ethnology is about as difficult among the Indians as among our present population. Corresponding to our enormous influx of immigrants, was the custom of adoption of prisoners of war, and of intermarriage, and of voluntary amalgamation of tribes, so that in either case it is difficult to

[1] This statement is denied by many authorities.

apply the words native and foreign, while in neither case is there an instance of undisturbed inbreeding of sufficient duration to secure a racial type. Craniology, as applied to the American Indians, is also unsatisfactory for the reason that skulls long buried are warped and distorted from their original shape. This obvious fact has, however, been entirely overlooked by some quasi scientific students.

Hygiene.—As to methods of life, the Indians are difficult to classify. They were not nomadic, in the systematic sense in which the term may be applied to the inhabitants of the Asiatic steppes. They were not pastoral for the very excellent reason that North America contained no useful animals capable of domestication, with the possible exception of the bison and some species of deer. The practical experience of modern zoological gardens is ample excuse for the neglect of the Indians to become herdsmen. Only a few ocean tribes were distinctly fishermen; in fact, there was no large tribe or race of such habits. While the popular conception of the Indian is that of a hunter, he had evolved beyond this stage without really reaching the stage of the farmer. In fact, without horses, oxen, or other beast of toil and burden, and without grazing animals, there would be no farming possible, on a considerable scale, except so called truck farming, which is, I believe, a late specialization and not found in the evolution of any race toward civilization. Most of the aborigines lived jointly by fishing, hunting, and the cultivation of such crops as corn, beans, melons, squashes, sun flower seeds, and the collection of strawberries, raspberries, blackberries, squaw berries, wintergreen berries, hickory, and walnuts, etc. In famine, various roots, barks, tubers, and seeds of wild grasses and sedges were eaten. In winter, the only antiscorbutic food obtainable was often the contents of the intestines of deer and other wild animals, as we learn from several accounts of captives among the Indians.

The degree to which vegetable food was used varied greatly, according to local customs, fertility of the soil, state of peace or war, etc. The most cursory view of the mounds of certain parts of Ohio, or merely the study of their size and number —which reaches well into the thousands—is enough to convince any thinking person that the mound country must have been thickly settled and, therefore, that a systematic raising of crops must have been in vogue for a long period. Even among the aborigines of New York State agriculture was a considerable industry. In 1687, when De Nonville made the first invasion of the Seneca country, he reported the destruction of a store of corn that all the elevators of Buffalo could not hold. The report was, of course, a gross exaggeration, but if there had been a hundredth part of the corn on hand that De Nonville reported, there was an ample supply for a year in advance. In the kitchen middens of the southeastern part of Buffalo, a number of investigators, including myself, have found carbonized corn, beans, squash stems, nuts, etc., cracked marrow bones, shells, etc., which indicate a liberal variety and quantity of food.

Almost all races of the globe have, beside food, some drug on which they rely to quiet the pangs of hunger, to act as a temporary nerve sedative or stimulant, and to render food more palatable. Alcohol, tobacco, betel nut, tea, coffee, coca, cacao, cola, maté, are examples. While the South American Indians used coca leaves, the Mexicans cacao and the Indians of the southeastern United States, tobacco; the aborigines of the northeastern part of the continent had practically nothing of this nature. Real tobacco was obtained by them only in small amounts by barter, and the various herbs, including *Nicotiana rustica* and willow bark—killikinick—which they smoked, were evidently of little satisfaction to them. I say *evidently,* for the reason that ancient Indian pipes of this region are among the rarest relics, and that those found have bowls suited only to the most abstenious. From historical sources we learn also that smoking was engaged in mainly as a rite at councils, and not as a personal indulgence, until the gentle vice had been cultivated by the Caucasian settlers of Virginia, and reintroduced among the Indians. Sites of Indian villages of the transition period, 1620-1750, yield an abundance of pipes, both of native and European manufacture.

It may be of interest to know that the combination, pipe and tomahawk, such as are seen in historic collections and in all artists' pictures of Indians, is entirely an innovation of the white men. Early travelers to Central America describe alcoholic liquors obtained by fermentation of chewed corn and other vegetable matter, the preparation of the intoxicant falling to the lot of those who were too feeble to engage in warfare or active labor, but who could at least masticate and furnish salivary diastase. Although the northern Indians may occasionally have enjoyed the exhilarating effect of fermented mashed fruit, it does not appear that they had any conception of alcoholic beverages, till fire water was introduced by the white man. This, they adopted with avidity and, as early as 1660, the Jesuits lament its quite general use not only among tribes with which they were closely associated, but among the Senecas and other nations who were well supplied with European articles of trade, but who were not yet ready to admit white men within their territory, unless for a limited time by special concession. In the absence of temporary stimulants, and with the unavoidable irregularity of food supply, it often happened that semi-starvation alternated with gourmandizing, and the French missionaries complained bitterly of the "eat-all" feasts which are also described as disgusting illustrations of gastric capacity by other explorers. Still, it does not appear that the amount ingested equalled the records of beer drinking at European universities nor that, relatively to the degree of enlightenment, these feasts were any worse than our present banquets. Almost all animal food was eaten cooked.

Cortez described the city of Mexico as well built, with streets of ample width, market places, arsenals, and other public buildings, and with a system of water works by which water was piped to the houses. While he is not explicit on the subject, sanitary and dietetic conditions seem to have been favorable; at least, he makes no disparaging contrast as he undoubtedly would have done if they had been markedly inferior to what he was accustomed to at home. He mentions, however, no other city in the present sense of the word, nor does there seem to have been any in North America. The

communal dwellings of the Zunis and the cliff dwellers are well protected against rain and wind, but are poorly lighted and ventilated, and the sanitary conditions horrible.

With these exceptions, I believe that none of the North American Indians built permanent dwellings, though some villages were used for a number of years. It is noteworthy that most of the mounds of Ohio which resemble fortifications have a paved ditch on the inner side of the enclosure. From the heat of the summers and the character of the soil, the theory is suggested that these ditches were rather reservoirs or passages for canoes, than moats, and that the earthworks were city walls rather than forts. Although cremation was much in vogue among the mound builders, occasional interments are discovered within these enclosures, and, with the refuse of a village, fouling of the water supply was inevitable. We can, however, only speculate as to the consequences and, remembering that typhoid is almost the only essentially water borne disease above the frost line, and that this seems to have been a late importation from Europe, it is quite likely that the contamination of the water produced no more serious result than an occasional epidemic of diarrhœa.

From their political organization and the necessity of mutual protection of enemies, the inhabitants of northeastern America were neither city, country, nor village dwellers in the modern sense, but they lived in small communities, having a home that was comparatively fixed, yet subject to desertion for hunting, war, political gatherings, etc., and which was moved a short distance every decade or so when the firewood in the immediate vicinity had been exhausted. Whenever the village was destroyed by accidental fire, or by war, or whenever an epidemic occurred, the site was permanently abandoned. Many of the village sites in and about Buffalo may be grouped according to types of relics found, in such a way as to suggest that the different members of a group were consecutively occupied by the same community. The vicissitudes of famine and war sometimes caused considerable migrations of whole tribes.

It is a curious and inexplicable fact, upon which all archæologists agree, that central and western New York were not permanently occupied by the various Indian tribes until at least about the middle of the fifteenth century. While the Niagara frontier seems to have been occupied earlier than central New York, there has never been found a single relic which would indicate great antiquity. The Jesuits mention several instances of extensive migrations, due to scarcity of food and fear of the Iroquois, and it often happened that almost whole villages would be occupied by prisoners and freed men taken from territory hundreds of miles distant, yet permanently settled among their conquerors and apparently as much a political part of the tribe which had captured them, as are our immigrant citizens members of our own country.

When we consider the location of Indian village sites, we are filled with admiration not only at the strategic intelligence of the barbarians but at their sagacity in all other respects, including the elements of sanitary science. I do not know of a village site, scarcely of a temporary camp which is not well chosen on account of sandy soil, good drainage, abundant water supply, as well as for convenience to fish streams, outcrops of flint, clay, etc., for the primitive industries of the Indians. In regard to Buffalo, the converse is almost equally true; that is to say, barring a few instances in which two or more equally eligible sites are too near together to be used simultaneously or in immediate succession, one can scarcely go anywhere along our creeks and select an available site, on general principles, without finding proof that it was actually occupied. If our authorities in the Spanish American war had shown as much sanitary wisdom as the untutored Kah Kwahs, and had also followed the Indian rule never to make a military appointment on account of civil or social prestige, we should have had no such death rate in our camps of detention.

The Iroquois seldom used anything like the conic wigwam in which all artists' Indians dwell. Instead, they erected square or oblong, one-storied shanties. The poles were bound together with withes or sinews, and the whole covered with bark or sometimes with thatch. A number of families occupied these houses, which must have been very smoky and squalid imitations of a sleeping car. Judging from the rubbish heaps, the Indians of Buffalo had no more than six or eight communal houses in a village, and the maximum population must have been well inside of five hundred. Few sites could have had more than a hundred inhabitants. The largest continuous site in this region begins at Snake Hill, Fort Erie, and stretches along the Canada shore of Lake Erie for nearly two miles. Probably, however, this was not all occupied at the same time. It is entirely prehistorical. Historical allusions to various Iroquois villages assign them populations of one hundred to five hundred, just about what the archæologist would estimate from the thickness of the relics, the extent of the charcoal deposit, etc.

The burial places of the Indians were usually at a distance of one eighth to one quarter mile from the village, and it is rarely that more than twenty skeletons are found. They are always buried in sandy soil, and seldom at a greater depth than three feet. My own experience with Iroquois graves is corroborative of the statement of the Jesuits that the dead were buried in the posture that they occupied in the womb. It is not, however, in accord with another statement in the same context that the face was always turned toward the west. In fact, I have never observed any regularity in this matter. Sometimes, when two or three skeletons are found in the same grave, each will face in a different direction. Aside from the obvious hygienic deductions, it will be observed that twenty burials for a village occupied ten years, corresponds pretty nearly to the decennial mortality of a resident population of one hundred. To this must be added deaths and burials during absence from the village, on war or hunting and fishing expeditions. Few remains of small children are found, and I have never happened to find the fœtal remains, though I once did an injustice to a young Indian woman on account of a turtle skeleton which, at first glance, seemed to be fragments of a fœtal skull. Whether the burial of children was not commonly practiced, whether their bones decayed too rapidly to leave a trace, or whether there was a small infantile mortality among

the Indians, I do not know. The last hypothesis is improbable, although we know that the Indians paid less attention to sexual matters than our own people; that they were not very prolific, and that the population did not increase to any appreciable degree. The absolute lack of milch animals must, however, have been an unfavorable factor in the rearing of children, but somewhat combatted by the open air life and the almost uniform kindness with which children were treated, except during war.

156 West Chippewa Street.

THE PRESENT TREATMENT OF DIPHTHERIA BY THE MEDICAL PROFESSION. A REPORT OF SIX HUNDRED CASES.

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Philadelphia,

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To write a paper simply demonstrating the value of antitoxine would be a reduplication of the literature of ten years ago. Since then the burden of testimony has become convincing, then overwhelming, and of late mainly repetition. We have ceased to fight the opposition of ignorance since it died of shame; and of late our antitoxine literature has become scientific and didactic rather than argumentative.

For the past three years investigators have made their observations and statistics principally upon the finer points of the problem, comparing our results in special classes of cases as laryngeal, intubation, and tracheotomy, or perhaps demonstrating with wonderful precision the increase in the mortality rate *pari passu* with the delay in administering the antitoxine. And yet, although its value is as demonstrable as the incision and draining of an abscess, there actually exist physicians who profess disbelief. Some of these men are ignorant, others are prejudiced, and none offer any valid opposing argument. Possibly some timid one had once a patient with diphtheria who received antitoxine and died, thereby disproving a recovery of one hundred per cent. A few abscesses have been opened with the same result.

Does any one doubt the correctness of the above statement? At least three times in the last two years, while reporting probably one hundred and fifty cases of diphtheria, in my official capacity, I have asked the routine question, "Did the doctor give any antitoxine?" and have been answered, "No, my doctor doesn't believe in antitoxine," sometimes followed by "He says its liable to affect the heart." In the *Proceedings of the Philadelphia County Medical Society*, xxvi, page 99, is quoted the authentic remark of a young practitioner who predicted that ten years hence antitoxine syringes would all be in the ash heap. I could quote still other statements if necessary. It is not these few men, however, who are responsible for our present mortality rate of diphtheria, responsible at least if the widely published and accepted conclusions as to the efficiency and administration of antitozine be true. It is rather to those of us who fail to give antitoxine because the case appears mild; or who delay giving it until too late; or who neglect to immunize children exposed to the disease; or who fail to secure results by timidity in dosage, just as such timidity would fail to cure syphilis or malaria. It is because I have seen these occurrences time and time again that this paper is written to show just what the profession is doing today, be the result what it may, so only that it is true.

Before discussing the investigations made by the Philadelphia Bureau of Health, it may be well to outline as briefly as possible the treatment of diphtheria as laid down by the best authorities.

Antitoxine.—Our clinical knowledge of antitoxine may be summed up as follows: 1. It is harmless even in the largest doses. Dr. McCollum, of the Boston City Hospital, is a warm advocate of large doses; and has given 100,000 units with recovery. Dr. Royer, chief of the Municipal Hospital of Philadelphia, has a routine dosage in his wards of 7,500 to 10,000 units for severe laryngeal and nasopharyngeal cases, *to be repeated every twelve to twenty-four hours when necessary.* At the Willard Parker Hospital in New York, in September, 1905, the average dose was made from 5,000 to 10,000 units. For the better results obtained, see *Archives and Pædiatrics*, 1904.)

2. Early large dosage is essential to the best results. This is apparent if we remember that: (a) So far as antitoxine is concerned the damage done by the disease is irreparable. (b) The antitoxine is a germicide and possibly a chemical antidote of the toxine, and therefore the quantity administered, in order to be requisite, has a minimum. Furthermore, the bacilli while they live are constantly multiplying. The wisdom of giving a sufficient quantity at one time to kill the bacilli, when the remedy is harmless, is plainly apparent. To use a homely illustration, it is the difference between putting out a fire by drenching it with water or spraying it every day. (c) Repeated doses are justified by a realization that the first dose should have been larger, and also as a means of maintaining the antitoxicity of the blood.

3. A review of the literature, especially that part embracing the hospital report and teachings of those best qualified to speak, would place the initial dose of antitoxine at from 2,500 to 10,000 units—according to the severity of the case—to be repeated every twelve to twenty-four hours if necessary. Dr. McCollum urges the administration of sufficient antitoxine to secure results, whether 4,000 or 70,000 be required. Dr. Osler, in his textbook, states 4,000 to 6,000 units as the dose for the average case. The milder cases if seen late should have a dose larger than otherwise; because damage has been already done, even though not apparent.

Immunization should be done by doses of 500 to 1,500 units, according to the individual and to the degree of exposure. Personally, I give 1,500 units routinely. Such small doses as 500 units are liable to be lost in the syringe.

General Medication.—Generous, but assimilable liquid diet, with plenty of water, is the main support. While no proof exists of direct bene-

fit, iron, in the form of the tincture of the perchloride, is the favorite remedy, and is reasonably used. Mercury is also held by many to be beneficial. Stimulants, such as strychnine and digitalis, are of great value when indicated.

Local Measures.—Since the use of antitoxine, local measures are no longer of primary importance, although exceedingly valuable. The concensus of opinion seems to be that no germicide has proved a claim to anything approaching specific action, and that any good one not injurious to the tissues will answer. A soft swab and a nasal douche are the best adjuncts. The most used and approved local applications are probably: The iron, glycerin, and carbolic acid mixtures; Löffler's solution of menthol and iron, in toluol and alcohol; corrosive sublimate, 1 to 1,000; carbolic acid, three per cent.; or one of the following: Silver nitrate solution, boracic acid, various digestive ferments, chlorine water; while hot or cold applications to the neck often give temporary relief.

Let us now make a study of the treatment of the ordinary case of diphtheria as it occurs in practice. For this purpose, the Philadelphia Bureau of Health collected the records of treatment in six hundred cases of diphtheria occurring in Philadelphia in the spring of 1905, and it is from these reports, contributed to the department by the courtesy of many members of the medical profession, that the study is made. I have endeavored to classify the treatment reported as it has already been given in the preceding discussion.

Total number of diphtheria cases reported, 616.
Reported degrees of severity of above 616 cases:

Mild.	Moderate.	Severe.	Septic.	Gangrenous.
133	258	184	40	1

Cases not treated (hospital, moribund, etc.), 52.
Cases treated and classified in tables a and b, 564.
(a) General method of treatment:

Internal medication only	18
Local treatment only	1
Antitoxine only	18
Internal medical and local	87
Internal medical and antitoxine	77
Local and antitoxine	22
Internal medical, local, and antitoxine	341

(b) Cases treated with antitoxine, 458; cases treated without antitoxine, 106.

ANTITOXINE TREATMENT.

Dosage used. Amount.	Number of cases.	Dosage used. Amount.	Number of cases.
500 units	1	10,000 units	3
1,000 units	27	11,000 units	4
1,500 units	31	12,000 units	6
2,000 units	68	13,000 units	1
2,500 units	24	14,000 units	1
3,000 units	123	15,000 units	2
4,000 units	47	17,000 units	2
5,000 units	31	18,000 units	1
6,000 units	45	20,000 units	1
7,000 units	11	24,000 units	1
8,000 units	9	25,000 units	2
9,000 units	16	35,000 units	1
Total			458

NUMBER OF ANTITOXINE INJECTIONS.

Number of injections.	1	2	3	4	5	6	7	8	
Number of cases	283	93	55	19	4	2	1	1	—Total, 458

If the attitude of the medical profession on the subject of antitoxine as set forth in the foregoing summary be critically examined in a friendly spirit, it would appear to us that the average dosage for diphtheria is distinctly too small. Taking into account the 564 patients in this series not only reported, but actually treated, the statement is distinctly made that 106, or nearly nineteen per cent., received no antitoxine at all. After what has already been said, this needs no further comment.

Again, the 458 patients treated with antitoxine received on an average 4,200 units each, which, if every case were of mild to moderate severity and were thus treated, would really be a very creditable showing. We must bear in mind, however, two damaging items of evidence. First, the average of 4,200 units was only for those cases actually receiving antitoxine, viz., 458 cases. Were the whole number treated (564) used in order to determine the dose for the average case of diphtheria encountered and treated, the dose would be appreciably smaller. Secondly, the dosage of 4,200 units, while a dose sufficient to be beyond criticism in a case of ordinary severity, is distinctly not a good average in a series, in which only twenty-two per cent. were mild, while thirty per cent. were severe and six and a half per cent. septic.

If one were to separate the twenty-five cases receiving doses of 10,000 units or over, a number that constitutes but a small proportion of the whole number or even of the severe cases, the dosage would average 3,600 units. A separation of all the severe cases and a corresponding deduction from the whole list of those cases receiving the largest doses of antitoxine would make a smaller figure still (3,100 units), as the amount used in ordinary mild or moderate cases. Three thousand units is certainly the most frequently dose used in practice, as attested by the 123 cases recorded in the foregoing table of doses.

Internal Medication.—An examination of the reports of two hundred of those cases where the internal medication was stated in detail showed that Osler's statement as to the frequent use of iron and mercury was correct. The favorite prescription, a combination of iron and mercury (alone or with other remedies), occurred fifty-three times. The individual drugs, considered in the order of the frequency with which they were used, were iron, mercury, potassium chlorate, strychnine, and alcohol.

Iron was given ninety-six times—thirteen times alone and the remainder in partial or sole combination (with bichloride of mercury forty-one, with potassium chlorate twenty-four, with calomel seventeen, miscellaneous about fifteen). Mercury was used eighty-eight times, in thirty-one of which it was the sole remedy administered internally. Of the different salts, the bichloride was used in forty-three instances (alone eleven, in combination thirty-two); calomel in thirty-three (alone twelve, in combination twenty-one); and the red iodide in twelve (alone eight, in combination with belladonna four). Potassium chlorate was given twenty-four times, always with iron—an old and favorite combination. Of the stimulants, alcohol (as spirits) and strychnine were each used in twenty-three cases, and (except in three cases) always as a part of a more extensive internal treatment. It may be noted that digitalis was only mentioned in six instances.

It is gratifying to record that of the two hundred cases just mentioned, only four suffered medication which appeared to the writer to reflect on the ability of the attending physician; and not more than four or five others of the latter used remedies of doubtful indication and not generally recognized value.

Local Treatment.—An examination of the histories of a hundred cases taken at random showed a remarkable use of hydrogen peroxide as the agent used in combatting the disease locally. It was used sixty-five times, in forty-five of which it was the sole local application. Boric acid solution or Dobell's solution was employed in eleven cases; an evidence of the belief held by many that local treatment is secondary; and that simple cleansing of the throat without injury to the tissues is the best plan of treatment. It was rather surprising to note that silver salts and Löffler's solution were used but four times each. The other remedies mentioned more than once were bichloride solution (in four cases); alcohol or brandy (in three cases); listerine (in three cases); and lime water as a steam inhalation (in three cases). Carbolic acid solution was used twice. In only one case was a digestive ferment used.

Reviewing the whole subject, the antitoxine question seems to be the only one worthy of further discussion, and part of that has already been gone over. Personally, I do not believe that prejudice has much to do with the failure to use the agent in a majority of the large number of cases mentioned. Rather should it be ascribed to one of three causes. First, the expense, since diphtheria is essentially a disease of the poor, where the cost of antitoxine often makes it prohibitive. Happily, the State and municipal health boards are obviating this difficulty by free distribution to those unable to purchase antitoxine from the usual sources, and the health commissioner of Pennsylvania has already demonstrated a consequent reduction in the mortality of diphtheria since the institution of this charity by his department a year ago.

The second contributing factor is the pain and inconvenience of administration. A timid physician and a nervous family make a poor combination. A large experience in giving antitoxine as a city official, however, has demonstrated clearly to me that the attitude of the family is the attitude of the physician himself. Any man with tact and self assertion should not only carry the family of his patient with him, but inspire confidence as well. A disposition to temporize with mild and apparently mild cases is a mixed corollary of the two other causes just mentioned.

Similarly, the explanation of the prevailing small dosage employed when antitoxine *is* used lies with two causes. The principal one is the fact that with a harmless remedy and a disease of deceptive severity, we have not resolved, as we should, to aim high in order to insure results.

The other, and scarcely less important factor, is our docile acceptance of the dose fixed by the manufacturers. The leading firms supply antitoxine in tube syringes containing 2,500 to 3,000 units, and the impression is abroad that one injection sufficies for an ordinary case. I admit that an immediate second injection will arouse opposition from a mother if anything will. However, we should fix at least four thousand units as our minimum dose, and with our demand will doubtless come the response, attained by either increasing the size of the tubes or by concentrating the antitoxine.

The question of intubation has not been gone into, as the cases removed to the Municipal Hospital and not reported as treated in this series include a very large proportion of the laryngeal cases.

The writer wishes to express his appreciation of the courtesy extended to him by Dr. A. A. Cairns, chief medical inspector of the Philadelphia Bureau of Health, for the material reviewed in this paper.

1728 Chestnut Street.

WHAT MAY BE ACCOMPLISHED WITH APPARENTLY HOPELESS CASES OF TUBERCULOSIS.*

By Sherman G. Bonney, A. M., M. D.,
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In view of the interest attaching to the tuberculosis problem it is, perhaps, fitting to call attention to one phase of the subject which has received hitherto but comparatively little attention. During recent years the organized effort of the profession has been concentrated largely upon the adoption and execution of preventive measures. As a direct result of systematic effort the mortality of the disease has diminished perceptibly and society is becoming educated rapidly to a more or less intelligent conception of its nature. While much has been accomplished in the way of preservation of future communities, it is pertinent to inquire to what extent the welfare of the consumptive himself has been subserved by reason of concerted medical interest. The obligation upon the profession and upon society is no less toward those already afflicted with the disease, than toward generations to follow. In the interests of the invalid, the most advanced phthisiotherapeutical thought has been directed toward supervisory control and the beneficial influence of climate.

It is hardly appropriate at this time to discuss ever so briefly climatic considerations, but it seems opportune to call attention to the limited scope of the sanatorium whose field of usefulness at present is not sufficiently broad to include the admission of advanced tuberculosis. Without desiring to detract in the least from the great utility of such institutions open to incipient pulmonary invalids, the fact remains that patients of this character do not, as a rule, constitute such a menace to society as the advanced cases, and are rarely so ill as to demand that degree of personal supervision which necessitates residing under the same roof with a resident physician and corps of assistants. Many of these with proper industrial opportunities and in a suitable climate could easily become self supporting. While added opportunities for recovery are being offered to incipient cases, it is difficult to comprehend in what manner recent clinical effort has benefited the apparently hopeless or far advanced consumptive. He is denied admission to all sanatoria, because his condition is not such as to comply with requirements stipulated in their blanks of admission. He is persona non grata to all municipal hospitals. It might almost appear that these unfortunates may profit from the recent agitation concerning consumption

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only to the extent of receiving a few educational leaflets telling them where to expectorate, how their bed linen shall be disinfected, and how their apartments may be fumigated after death. He is privileged to be duly registered at headquarters, and to receive instructions from some responsible medical source, but he is forced to appreciate the fact that he constitutes at best a source of danger to his family. He is told in his educational leaflets "to avoid the germs of consumption, to have a cheerful mind and a clear conscience, and to get an abundance of good food and good air," yet he is denied by virtue of his very needs and requirements those advantages which are freely bestowed upon others less worthy upon the score of their actual needs, and who constitute elements of far less danger to the public.

It is desired to emphasize the valid claim of the far advanced consumptive to receive a more sympathetic practical consideration than at present afforded. This obligation upon society is not discharged by the construction of hospitals, to serve merely as a refuge for such cases until they are relieved of their sufferings. Equal sanatorium provision should be afforded as to incipient cases, and a no less active systematic endeavor toward securing arrest. Save under exceptional conditions, no given case of tuberculosis should be pronounced absolutely hopeless. An intelligent prognosis can rarely be made from the physical evidences alone. Most extensive and active tuberculous infection, even in the presence of marked constitutional disturbances, the existence of cavities and other unfavorable complications may, nevertheless, undergo a complete and enduring arrest. Clinicians whose experience has been confined to the observation of incipient cases in sanatoria, may not be inclined to accept this statement, but those who have enjoyed the varied experience rendered possible in health resorts will verify my conclusions.

It may not be inappropriate in justification of these remarks, to allude briefly to my personal experience in Colorado. I have been privileged to observe more or less closely in private work seventeen hundred cases of pulmonary tuberculosis, whose records have been preserved. A more heterogeneous lot of consumptives it would be impossible to imagine. Many appeared absolutely hopeless upon arrival, some died shortly after, a vast number were in greatly impoverished circumstances. It may be of interest to state that the average period of delay following the recognition of the symptoms referable to the disease up to the time of their arrival in Colorado was twenty and one third months. Active extensive trouble in both lungs in 69.1 per cent., while 53.05 per cent. presented all the evidences of a profound constitutional disturbance, including the sepsis of secondary infection, marked emaciation, with evidence of softening, and other symptoms and signs sufficient to occasion their classification as advanced cases. Eighteen per cent. of all these cases showed unmistakable evidence of cavity formation. The average loss of weight was 18.8 pounds. These statistics are computed from a critical analysis of seventeen hundred cases and may be accepted as definitely accurate. A large number have secured an entire arrest by which is meant the absence of physical signs, and disappearance of the bacilli from the sputum. Some of the so called far advanced cases and a few who were apparently hopeless are to-day enjoying an active business life. Detailed statistics are inadmissible at this time, but will be submitted in a subsequent paper. I will report briefly a few illustrative cases to show precisely what is meant when statements are made regarding alleged recoveries of what were first considered to be hopeless cases.

Case I.—A woman, twenty-four years old, consulted me May 24, 1902, the day of arrival in Colorado, eight months after recognized symptoms of tuberculosis. There had been progressive rapid failure from the beginning, and a loss of over fifty pounds of weight. She had had chills daily with copious night sweats, the average afternoon temperature was from 102° to 103°. The cough was excessive, expectoration during twenty-four hours four ounces, with numerous bacilli. Dyspnœa was marked, pulse ranging from 120 to 140. Upon examination extensive infection of both lungs was found; in the left lung, signs of consolidation with fine moist râles after cough to the fourth rib in front, and from the apex to the base in the back; in the right numerous fine clicks from the second interspace to the base in front, and from the middle of the interscapular space to the base in the back.

On account of the extensive pulmonary involvement, the great emaciation, the long continued sepsis, and an irritable nervous temperament an absolutely unfavorable prognosis was rendered. The urgency of the case was such that cardiac stimulation was constantly employed, and upon several occasions I was constrained to believe that she would not survive twenty-four hours. With a beginning diminution of fever and circulatory disturbance at the end of six weeks, there gradually developed increase of appetite, digestion, strength, and weight, with lessening of cough and expectoration. Following a progressive improvement during a period of two years the patient was discharged as an arrested case and permitted to return home, having gained forty-three pounds in weight, with the pulse in the neighborhod of 80 or under, without cough or expectoration. Physical examination at that time disclosed entire absence of evidences of existing tuberculous infection. There had resulted, however, extensive proliferation of fibrous tissue throughout the infected areas, giving rise to appreciable changes in pitch and quality of respiratory sounds without râles.

She has remained at home over two years, and last advices showed no evidence of retrogression, in spite of the fact that she has given birth to two children since she left Colorado.

Case II.—A woman, thirty-five years old, arrived in Colorado in April, 1899, nearly five years after the recognized onset of her pulmonary infection. There had been a loss of fifty-five pounds in weight; cough was distressing and paroxysmal, with daily high fevers, and a pulse varying from 130 to 160 at rest. She was unable to sit up in bed on account of embarrassed cardiac action, nourishment for weeks having been taken through a tube. Upon examination there were found signs of extensive active tuberculous infection of each lung; in the right upper lung, in the front, a cavity, the size of a small orange with consolidation extending to the fourth rib, and in the back to the lower edge of the scapular; in the left lung a consolidation to the third rib and to the middle of the interscapular space. Throughout this entire region moist bubbling was easily recognized on easy respiration.

A hopeless prognosis was unqualifiedly made. Her family physician who accompanied her to Colorado stated that she could survive but a week or ten days at the most. She was kept in bed in the open air for nearly six months with liquid nourishment and nutri-

tive enemata for two months. She remained under my constant observation for two years, during which time she exhibited a slow, but remarkable improvement. During the first six months in bed she gained fifty pounds in weight, with a corresponding improvement in her general state, and in the condition of the lungs. At the time she was discharged there was a gain of nearly seventy pounds in weight, but with a slight persisting bronchial cough. There was no moisture whatever recognized upon physical examination, though fibrous tissue changes were quite pronounced. She moved to a remote part of the State and continued to maintain her improvement until she died two years ago of acute appendicitis.

Case III.—A woman, twenty-nine years old, arrived in Colorado February, 1899, two years after developing marked symptoms of pulmonary tuberculosis. During this period she progressively declined, exhibiting emaciation, daily elevation of temperature, weak, rapid, and irregular pulse, distressing, paroxysmal cough, copious expectoration with very numerous bacilli. Examination disclosed evidence of an active process involving a large portion of each lung. In the upper right lung, in the front, there was a cavity of the size of an orange in the midst of an area of consolidation, with numerous bubbling râles from the apex to the fourth rib, and in the back from apex to very base. On the left side there was a consolidation with moist râles from the apex to the third rib. Moisture was recognized in the left axilla, and in the back from the apex to the lower third of the interscapular space.

On account of the extensive pathological change, pronounced dyspnœa, irritable pulse, hysterical temperament, poor appetite, with frequent vomiting, an ultimately hopeless prognosis was entertained without reserve, which opinion was indorsed by Dr. Babcock, who saw her shortly after her arrival in Denver. She has remained under my close personal observation during a period of eight years. During the first three years very little change was noted either in the general state or in the condition of the lungs. The cough was frequent and exhausting, expectoration copious and bacilli numerous. During the fourth year a beginning improvement was observed in her general condition, the physical signs remaining practically stationary. During the fifth year a gain of fifty pounds was made in weight, followed by an astonishing improvement in all respects. During the past three years she has continued to gain still further in weight and remarkably in strength. For over two years there have been no bacilli found in the sputum after a vast number of exhaustive examinations. There is a persisting bronchial cough at intervals, with occasional expectoration. The examination of the chest shows no evidence of any existing tuberculous process, although fibroid changes are readily detected.

Case IV.—A young man, aged nineteen, consulted me in May, 1899, his illness having developed ten months previously with acute pneumonic onset, involving the major portion of the left lung. The patient was sent originally to Las Vegas, New Mexico, in company with a physician and trained nurse, and two months later to Arizona, where Koch's tuberculin was daily used for a prolonged period. Following an initial gain in the Southwest there ensued a persistent elevation of temperature, loss of weight and strength, followed by several recurring hæmorrhages. Upon arrival in Colorado there was a loss of thirty-two pounds in weight, temperature 104°, pulse 120. Numerous bacilli were found in the sputum. Signs of massive consolidation showed in the left front apex to the fifth rib with moist râles throughout, and semidry clicks in the left axilla. In the back bubbling râles were heard to the very base, with area of consolidation extending to the middle of the interscapular space. On the right side was a slight consolidation at the apex, with moist râles to the second rib and an area of infiltration with moisture at the base. In the back was a partial consolidation at apex with fine clicks in interscapular space.

In view of the age, the active advanced process in one lung, the extending invasion of the other, the hæmorrhagic tendency, persisting fever and rapid pulse, the prognosis could scarcely be other than distinctly unfavorable. There developed, however, a gradual resolution of the consolidation with lessened activity of the tuberculous process shown by slighter moisture, diminution of cough and expectoration, fewer bacilli, and increase of weight and strength. Two years ago, after five years' constant medical attention, there was entire absence of cough and expectoration, the bacilli disappeared, and the patient had gained nearly sixty pounds. Examination of the chest failed to indicate the existence of any tuberculous activity whatever, there remaining only a somewhat prolonged high pitched expiration, tubular in quality at left apex without moisture. He shortly afterwards married and has resided half the time in Illinois. At present, seven years after coming under my observation, the arrest is complete.

Case V.—A boy, nine years old, arrived in Colorado, June 1, 1903, exactly three months after the development of acute bronchitic symptoms. Following the initial onset he remained eight weeks in bed with a persisting fever and moderate cough. At the end of two months accompanied by his parents and family physician he was sent to New Mexico, remaining thirty days. During this entire period there had been a progressive rapid decline. At the time I saw him he was greatly emaciated, weighing exactly fifty pounds. His average afternoon temperature was 101.5°; there was marked dyspnœa on exertion, appetite exceedingly poor, pulse 124, persisting cough without expectoration. There were signs of consolidation throughout the entire left lung, with moist râles upon easy respiration from the apex to base front and back.

In view of the age, the history of the development of an idiopathic pleurisy, undoubtedly tuberculous, the continued fever, the great emaciation and physical signs, an unfavorable prognosis was rendered. The exclusive care of the child was committed to a trained nurse, and an unbroken regimen was maintained for a period of two years and one month. During this time the child exhibited most remarkable improvement in spite of the fact that at the end of four months he contracted a typhoid fever of eight weeks' duration, followed in the second year by an acute fulminating appendicitis operated during the first twenty-four hours. He was discharged as cured in July of last year, there being not the slightest trace of moisture to be recognized after repeated examinations of the chest, although fibrosis was extensive. His general condition was excellent in all respects, his weight approaching eighty pounds. He has remained well ever since.

Case VI.—A man, forty-one years old, came to Colorado in September, 1904, nine months after an acute pneumonia, which was followed by severe persisting cough and continued fever with night sweats. In the mean time he had experienced a severe hæmorrhage, and lost much weight and strength. The sputum had been found to be loaded with bacilli. He gained eighteen pounds, in a well known health resort, but exhibited continued elevation of temperature with occasional chills and severe sweats. There was subsequent loss of weight, increased cough and expectoration, although he had been in bed during day and night for months. The case was pronounced by a preeminent authority to be entirely hopeless. Upon arrival in Colorado the examination of the chest disclosed extensive active tuberculous infection of each lung. On the right side

moist râles were plainly heard in front to the third rib, and in the back from the apex to the very base. On the left side well marked consolidation in the upper portion, with but slight moisture in front, but with coarse râles from the apex to the lower angle of the scapula in the back.

A further decline was exhibited for several weeks. The temperature was constantly elevated, chills and night sweats were frequent, and there resulted greater loss of flesh and strength. The cough was extremely distressing, expectoration copious with numerous bacilli, temperament markedly nervous, the patient apprehensive and discouraged. The active disseminated tuberculous infection, unmistakable evidence of sepsis, impaired digestion with entire absence of appetite, a weak and rapid pulse, and the general prostration, were sufficient to justify, almost without reserve, an unfavorable prognosis.

After several months a gradual improvement was observed which has continued without interruption. In September, 1905, one year after coming West, there was but little or no expectoration, fever had been absent for many months, a gain of forty-five pounds in weight had been established, and the pulse was uniformly of good character. At the present time it is impossible to discover any physical signs attributable to an existing tuberculous process, no moisture being recognized after careful exploration. Searching examinations of the sputum fail to disclose the presence of bacilli.

CASE VII.—A young lady, eighteen years old, consulted me June, 1896, immediately upon coming to Colorado. Her illness was of one and one half years' duration, during which time she had spent several months in the White Mountains and in Asheville. There was great emaciation and pallor, dyspnœa upon the slightest exertion, nausea and daily vomiting with diarrhœa, pulse 120 to 130 at rest, cough exceedingly severe, expectoration purulent and copious. Upon examination the entire left lung was found to be involved. There were signs of pronounced consolidation throughout, coarse bubbling râles on easy breathing from apex to base, front and back, with a cavity nearly the size of a fist in the front of the left upper lung.

There was nothing in the history or condition to furnish a warrantable basis for the slightest encouragement. Her age was against her, she was profoundly septic, and her powers of resistance were evidently exhausted. Cavity formation had already taken place, and softening was rapidly going on in a lung partially consolidated from top to bottom. She has remained under my management during the ensuing ten years. Without entering into a tedious recital of the details of her progress I will state that during the greater portion of this time she was made to follow a scrupulous régimen with resulting improvement noted from time to time, despite the fact that her circumstances were limited and only absolute necessities permitted. Eight years of unremitting toil and patience sufficed to bring about a complete arrest. There was but little cough, and the expectoration was essentially bronchial in character. She had gained forty-three pounds in weight, had shown no constitutional symptoms for one or two years, and the examination of the chest revealed no evidence of existing tuberculous activity. Examination of the sputum was found to be entirely negative. She was married to an army officer very shortly afterwards, and for the past two years has led the gay and strenuous social life incident to an army post. At the time of her departure for the Philippines with the Second Regiment recently, I was privileged to make an exhaustive physical examination. In spite of her late hours of social dissipation it was found that there had developed no renewed activity of her former tuberculosis. A large cavity persisted in the upper left front without moisture. No râles could be heard in any portion of the lung, which was found to have undergone through the lapse of years extensive fibrosis. Some sputum was occasionally expectorated. This was subjected to examination with continued negative results.

The foregoing cases are selected from many which might be reported to illustrate the possibility of complete recovery even in apparently hopeless cases of tuberculosis, the arrest in these instances being thus far enduring and complete.

I will now cite three more instances, all of recent origin, to illustrate even more emphatically than the preceding the results possible of attainment in extremely desperate cases.

CASE VIII.—A woman, twenty-seven years old, placed herself under my care in March, 1905, two years after the beginning of her illness. At the time of arrival there was a loss of twenty-two pounds in weight in an individual of small stature. Night sweats had been persistent for four months, as had a daily afternoon temperature of 103°, preceded in each instance by a severe chill. Cough was very severe, expectoration in twenty-four hours about six ounces, dyspnœa pronounced, pulse averaging 140, while patient was in bed. There was an active involvement of the entire left lung from apex to base front and back. Throughout this region coarse bubbling râles could be heard, and there existed a small cavity in the upper interscapular space. In the right lung was slight consolidation at apex with moist râles to the fourth rib. Prognosis was apparently hopeless. She declined rapidly for the ensuing three months, meantime developing a left sided pneumothorax, which almost terminated her existence. During my absence from town she was cared for by Dr. Sewall, who agreed with me that her case was not only beyond hope, but that she could scarcely live to be sent home. She has now gained twenty-five pounds in weight, with only occasional slight elevations of temperature, is able to exercise moderately, and has a pulse ranging from 80 to 90. The signs of tuberculous infection have entirely disappeared from the right side. On the left side there still persists a circumscribed and closed pneumothorax with some moisture remaining in the uncompressed portion of the lung. No physician would at present regard her as a hopeless case.

CASE IX.—A boy, seventeen years old, consulted me April, 1905, one year and three months after residing in Colorado under constant medical supervision. At no time during his stay here had he shown the slightest improvement. During the last six months the diurnal variation of temperature in no day had been less than five degrees. There was great emaciation, marked dyspnœa, frequent cough and expectoration, severe digestive disturbance with tubercle bacilli in the bowel discharges as well as in the sputum, pulse 120° in bed. His physician had recommended his immediate return home, although such a move would have been attended with some difficulty. The examination of the chest showed very active and extensive tuberculous processes in each lung, on the left side coarse bubbling râles were heard from the apex to the base, front and back, with a large cavity in the upper portion, while on the right side medium sized moist râles from apex to fifth rib and to spine of scapula in the back.

An absolutely unfavorable prognosis was rendered, but active measures were instituted in his behalf. During the first eight weeks he declined still further, at one time his weight reaching ninety pounds, although six feet in height. He has been kept constantly in bed out of doors and has established a remarkable improvement. Digestive disturbances have largely disappeared. He takes a prodigious amount of nourish-

ment, has gained exactly thirty pounds, has at no time any elevation of temperature, and the pulse is invariably under 90. The physical signs have disappeared from the right lung, and there is very much less moisture in the left. There is very little expectoration, several days frequently elapsing without the slightest cough. Bacilli, though still found in the sputum, are decidedly attenuated. I look for the ultimate complete arrest of the tuberculous process.

Case X.—The last case to be reported is a young lady, twenty-two years old, coming under my care in April, 1905. Her illness at that time had been of nearly nine months' duration exhibiting throughout a progressive decline. In his letter of introduction her physician wrote, "Miss B. has a very rapidly advancing tuberculosis. We can hold out no hope of recovery." He further stated, "at the time she entered our sanatorium she had already lost twenty-five pounds in weight, was very anæmic with elevation of temperature, rapid pulse, tuberculous deposit in the left lung, with moist râles from apex to base. There was a beginning involvement of the right apex with superficial ulceration of both vocal cords. All her physicians and consultants have advised against the journey." Upon examination of the chest it was found that the left lung was diseased from apex to base, with a moderate sized cavity in the upper portion with pronounced tuberculous signs in the right. Like the two preceding cases the patient showed no evidence of improvement for several months, her weight receding to eighty-six pounds. The sepsis finally became less pronounced, the temperature gradually subsided with consequent improvement of appetite and digestion. She has gained exactly thirty-three pounds, and up to the time of a recent influenza infection has shown no elevation of temperature at any hour of the day, for four or five months. Her pulse has been about 80, cough and expectoration are diminished, and her strength is much increased. Upon examination there is no evidence of tuberculous trouble upon the right side, and the signs upon the left are considerably less active.

At the time of the meeting of this association one year ago, these cases were in as desperate and apparently hopeless condition as can possibly be imagined.

This remarkable series of cases is reported in justification of the belief that a permanent arrest of the tuberculous infection is sometimes possible, even in those cases which may be regarded at first as utterly hopeless.

In connection with these reports there are several important facts to be borne in mind: (1) That these cases are selected merely to illustrate the possibility of arrest in far advanced cases, and that numerous other instances equally as striking can be adduced from my own personal experience. (2) That the cases here described represent not simply what might be regarded as decidedly unfavorable cases, but were considered without exception, by other physicians as well as myself, as being utterly hopeless by virtue of every consideration which may ordinarily influence prognosis. (3) That with the exception of the last three cases reported, which are of very recent origin, the remaining seven have not simply undergone improvement with the ultimate outcome as yet uncertain, but have actually experienced a complete arrest of the tuberculous trouble, with entire absence of physical signs, sputum, and bacilli, with a complete restoration to former usefulness and activity. (4) That the necessity for the practice of strict economy has been no insuperable barrier to the acquirement of complete arrest in a suitable climate and under proper régime. (5) No claim is made that the results obtained were entirely referable to climatic influences. It is contended, however, that such results in equally desperate cases are impossible of attainment in what may be regarded as relatively unfavorable climates, no matter how perfect the régime. (6) No special methods of treatment were employed other than those familiar to every physician of experience in the management of pulmonary tuberculosis. (7) No credit for results obtained is assumed other than that which may relate to an unremitting personal attention to detail, according to the exigencies of the situation and an adaptation of means to ends at times somewhat radical. (8) No case is here reported that is not entirely subject to confirmation by the attending physicians whose names are not cited in the report.

As logical conclusions from such results, it may be stated, first, that no physician can assume with positiveness to pronounce death sentence upon any case, no matter how desperate the apparent extremity. Second, that each case is therefore entitled strictly on its merits to a determined, painstaking, and aggressive effort to secure arrest. It follows that while the rich are abundantly able to combat the disease through such means as their medical advisers may counsel, the poor, deprived of such advantages, are justly entitled at the hands of the State to adequate hospital provision in an effort to preserve life, rather than to be merely instructed as to the proper method of passing their remaining days.

Stedman Building.

MANDRAGORA. AN HISTORICAL SKETCH.

By Alexander Ralph Kennedy, A. B., M. D.,
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Description.

Mandragora, or mandrake, is a solanaceous plant of the group known as the belladonna series. It is indigenous to the Mediterranean countries and has, therefore, no connection with the American mandrake, *Podophyllum peltatum.*

It may be described as a shrublike plant with a short, hairy stem and lanceolate leaves, bearing a flower ranging in color from white or pale violet to dark blue, and a fruit about the size of a small plum, with a pronounced, but rather agreeable odor, and resembling a small apple. It has a large, soft, fleshy, perennial root, usually forked (1).

There are two varieties of mandragora officinalis; the *Mandragora autumnalis,* or autumnal mandrake, which flowers in the fall, and the *Mandragora vernalis,* the spring mandrake, which flowers in March and April. The latter is distinguished by its thicker root, its lighter colored leaves, and its smaller corolla and fruit (2).

Of the three alkaloids characteristic of the belladonna series—atropine, hyoscyamine, and scopolamine—the last two are said to occur in mandragora. It is the recent wide spread interest in scopolamine that has called attention to the wonderful history of this ancient plant.

History.

It would be no exaggeration to say that mandragora has been used for thousands of years. It has

been identified with the ancient Hebrew *dudaïm,* the Egyptian *apemoum,* and the plant Zoroaster calls *thiamorion.* It was well known to the Greeks. Hippocrates himself is said to be the first physician to prescribe it. Theophrastus and Euryphon referred to it, and it is said to have been mentioned by Aristotle and Demosthenes as well. Later Celsus and Galen wrote on its medical properties (3).

The earliest complete descriptions of mandragora that have come down to us are those by Dioscorides, the author of the celebrated Greek work on materia medica, and Pliny, the Roman naturalist, both of whom lived in the first century of the Christian era. They differentiated the spring and autumnal varieties, which, they said, were considered the male and female plants respectively. A third variety described by Dioscorides is thought to be the belladonna plant (4).

All parts of the plant were considered medicinal by the Greeks, but the root was justly considered the most powerful. A sort of tincture was made by pounding and boiling the root in red wine. Pliny states that mandragora juice was much used by the older Greeks for diseases of the eye, "beaten up with rose oil and wine." In his day, however, it was less commonly used for that purpose. It would, of course, act as a mydriatic. He also says it was sometimes used as a substitute for hellebore as an emetic and purge, but was less efficacious. According to Dioscorides, when applied in the form of pessaries, it was an efficient emmenagogue and might produce abortion, while the seeds of the fruit, combined with sulphur, "stop the fluxes of women" (5, 6).

It was particularly valued, however, as a sedative and hypnotic. Hippocrates is said to have advised its use in tetanus, "in doses not sufficient to cause delirium." Pliny says, "administered in doses proportioned to the strength of the patient, the juice has a narcotic effect," and warns us that too strong a dose is fatal. He even asserts that the odor of the plant "is highly oppressive to the head," and that one "is apt to be struck dumb by it."

Mandragora was commonly used as a narcotic for other than medical purposes. There is a tradition that Hamilcar, the Carthaginian general, after an indecisive battle with the Libyians, left upon the field vases filled with wine in which he had macerated mandragora roots. The unsuspecting barbarians drank the wine, which so stupefied them that the Carthaginians achieved an easy victory (7).

Richardson says that in the time of Christ the Jewish women were in the habit of giving prisoners upon the cross a sponge soaked in a wine of mandragora called *morion,* or death wine. The victims passed into a death like sleep, and so frequently revived after removal from the cross, that the Roman soldiers were commanded to mutilate the bodies before removal.

Its Use an an Anæsthetic.—It is rather surprising to learn that at least two thousand years before Morton made his "epoch making discovery," mandragora was used as a surgical anæsthetic. The recent use of scopolamine for that purpose seemed novel, but as mandragora depends upon scopolamine and hyoscyamine for its narcotic properties, it may be said that the "new" anæsthetic is probably the oldest in the history of medicine.

Dioscorides wrote as follows: "Physicians also employ this remedy (mandragora) when a necessity arises for amputation or the employment of the actual cautery." Pliny said: "It (mandragora) is given before incisions or punctures are made in the body, in order to secure insensibility to pain;" and adds: "Indeed, for this last purpose, with some persons the odor of it (wine of mandragora) is quite sufficient to produce sleep." In the fourth century, Apuleius wrote: "If one is to have a limb mutilated, burnt, or sawn, he may drink one half ounce (of mandragora) with wine, and whilst he sleeps the member may be cut off without pain or sense."

It was well known to the medical writers of the middle ages that the ancient surgeons used mandragora for this purpose. Isidorus, Paulus Ægineta, Serapion, and Kazwini refer to it. Theodoric, in the thirteenth century, used a "spongia somnifera," saturated with a mixture of mandragora and other narcotics, held to the patient's nostrils. But from that time until the days of Morton no attempt seems to have been made to produce a surgical anæsthesia (8).

Mandragora as a Magic Plant.—The peculiarly forked, fleshy root of the mandragora bears a rough resemblance to the human body. Pythagoras is said to refer to it as ἀνθρωπόμορφος, having the form of a man, and Columella, the author of a Latin work on agriculture, called it *semihomo.* It was doubtless this fact, in combination with the potent and even deadly properties of the drug, that gave rise to the many superstitions concerning the plant (9).

It was generally believed by the ancients to be a sort of magic plant and, as was usual in such cases, elaborate precautions had to be taken in gathering it. The directions in Pliny's *Natural History* are as follows: "Persons when about to gather this plant, take every precaution not to have the wind blowing in their faces; and after tracing three circles about it with a sword, turn toward the west and dig it up." Josephus, in the *Wars of the Jews,* referring to a plant he calls *baarus,* but which is generally conceded to be the same as mandragora, is even more cautious: "The usual mode of taking it is this," said he. "They dig a trench quite around it, till the hidden part of the root be very small. They then tie a dog to it; and when the dog tries hard to follow him that tied him, this root is easily plucked; but the dog dies immediately as if it were instead of the man that would take the plant away." This method is referred to by later writers and some of the illuminated manuscripts of the middle ages represent mandragora as a nude woman tied by the feet to a dog. An old manuscript of Dioscorides in the Vienna library represents the dog in the agonies of death.

It was believed from very ancient times that the mandrake could cause insanity, and that it was a powerful love charm. According to Pliny, it was sometimes called *circæon,* the plant of Circe—that is to say, "the bewitching plant." No doubt this had its origin in the delirium it sometimes produced. As this delirium was not unlikely often of an erotic type, and as the root itself was of such a suggestive shape, it is probable that the plant thus acquired its reputation as a philter. At any rate, Dioscorides says it was commonly so used by the Greeks and refers to Theophrastus, who made the same asser-

tion nearly four hundred years before. It was also used for this purpose in the East and later in Rome. The Emperor Julian, in one of his epistles, tells Calixenes that he drank mandragora juice nightly as a love potion. It is even said that Venus was sometimes called *Manthragorites* (10).

The Mandrake of the Bible.—An interesting point in this connection is the well known reference to mandrake in the Bible. In Chapter XXX of Genesis we read: "And Reuben went in the days of wheat harvest and found mandrakes in the field, and brought them unto his mother Leah. Then Rachel said to Leah, Give me, I pray thee, of thy son's mandrakes. And she said unto her, Is it a small matter that thou hast taken my husband and wouldest thou take away my son's mandrakes also? And Rachel said, Therefore he shall lie with thee to-night for thy son's mandrakes."

After this both Leah and Rachel bore children, although they had been barren for several years. Richardson thinks that Rachel was pregnant at the time and wanted the mandrakes to use as a narcotic to ease the pains of her confinement. From the text, however, considerable time seems to elapse before her son Joseph is born. It is generally thought by Bible commentators that she wanted the mandrakes as an aid to fecundation. This view seems to be born out by the reference to mandrake in the *Song of Solomon.* Chapter VII runs in part as follows:

"Let us get up early to the vineyards; let us see if the wine flourish, whether the tender grapes appear, and the pomegranates bud forth: there will I give thee mv loves. The mandrakes give a smell and at our gates are all manner of pleasant fruits, new and old, which I have laid up for thee, O my beloved."

A broad interpretation of this poem merely as an impassioned love song suggests that mandrake was looked upon as an aphrodisiac.

It is true some writers have attempted to identify other plants with the Hebrew *dudaïm,* which is translated mandrake in the King James version. Linné, the botanist, suggested cucumbers, others jasmine, and what not, but the best of the modern commentators and compilers of biblical cyclopædiæ have agreed upon the *Atropa mandragora.*

In Shakespeare's Day.—Although mandragora is said to be used as an hypnotic at the present time in Egypt and other Eastern countries, in Europe it fell into complete disuse during the middle ages. A knowledge of its properties was still handed down by the medical writers as a sort of tradition, but it was not until the great literary revival in the seventeenth century that allusions to it appeared in literature. Shakespeare refers to it twice. In *Antony and Cleopatra,* act I, scene 5, Cleopatra exclaims:

"Give me to drink mandragora,
That I might sleep out this great gap of time
My Antony is away."

In *Othello,* act III, scene 3, Iago remarks upon the entrance of the jealous Othello—

"Not poppy, nor mandragora,
Nor all the drowsy syrups of the world,
Shall ever medicine thee to that sweet sleep
Which thou owdst yesterday."

Richardson thinks the hypnotic given Juliet by Friar Lawrence, which caused her to lie as if dead for forty-two hours and then "awake as if from a pleasant sleep," was mandragora. This seems not unlikely, and possibly Shakespeare had it in mind also when he speaks in *Cymbeline,* act IV, scene 5, of

"A certain stuff, which being ta'en would cease
The present power of life, but in a short time
All offices of nature should again
Do their due functions."

A passage in Chaucer's *Knighte's Tale* (l. 1467-1474) is also very suggestive of mandragora:

". . . . Palamoun,
By helping of a freend, brak his prisoun,
And fleeth the citee, faste as he may go;
For he had give his gayler drinke so
Of a claree, maad of a certeyn wyn.
With narcotics and opie of Thebes fyn,
That al that night, thogh that men wolde him shake,
The gayler sleep, he mighte not awake."

Shakespeare's contemporary, Marlowe, mentions mandragora in the *Jew of Malta,* act V, scene 1, when Barabas on being asked "Didst break prison?" replies—

"I drank poppy and cold mandrake juice;
And being asleep, belike they thought me dead,
And threw me o'er the walls."

In Webster's *Duchess of Malfi,* act IV, scene 2, are these lines—

"Come violent death
Serve for mandragora, to make me sleep."

Burton, in his quaint medley called *The Anatomy of Melancholy,* (part II, sec. 4) suggested its use "after bathing and to produce sleep" in the form of an oil applied externally. It is mentioned in conjunction with "camomile, stæchados, violets, roses, almonds, poppy, nymphæa," etc. Sir Thomas Browne, in *Vulgar Errors,* gave a very interesting and learned account of the plant in an attempt to cast discredit upon the accepted version of the Rachel and Leah episode in Genesis.

As a magic plant, the mandrake lost none of its reputation in the dark ages. The belief in its power to produce insanity and awaken the passions survived among the superstitious when its medical properties were all but forgotten. It is said to be used even at the present time in Palestine to promote conception, and a few years ago Greek youths were observed wearing small pieces of the root as love charms.

In the fifteenth and sixteenth centuries the mandrake became so popular as a talisman that in Germany there was a regular trade in the roots, which they called *Alraun.* Imitations were also made by carving other roots in the form of little images. They were greatly prized by the Italian ladies, who are said to have paid as high as twenty or thirty ducats apiece for them. Great numbers were imported into England in the time of Henry VIII. This explains the familiarity with the root and the superstitions connected with it, shown by the Elizabethan dramatists (10).

In the second part of *Henry IV,* Falstaff refers to its human form in two amusing passages. In act I, scene 2, he is roundly cursing his page:

"Thou whoreson mandrake, thou art fitter to be worn in my cap than to wait at my heels."

And in act III, scene 2, the fat knight thus contemptuously describes Justice Shallow:

"When a' was naked, he was, for all the world, like a forked radish . . . a' was the very genius of famine, yet lecherous as a monkey; and the whores called him mandrake."

Shakespeare refers to the belief that it caused insanity in *Macbeth,* act I, scene 3, where Banquo says—

"Were such things here as we do speak about?
Or have we eaten of the insane root
That takes the reason prisoner?"

And in *The Duchess of Malfi,* act II, scene 4, Webster makes Ferdinand say—

"I have this night digg'd up a mandrake
And I am gone mad with 't."

In mediæval days the mandrake was supposed to shriek or groan when uprooted. The following lines are taken from the oldest witchsong extant—

"I last night lay all alone
On the ground to hear the mandrakes groan,
And plucked him up though he grew full low,
And as so I did, the cock did crow!" (10)

The shrieks of the mandrake were supposed to be so horrible that those hearing them went mad. It was customary, therefore, in gathering the plant not only to employ a dog but also to stuff tow in the ears. This curious notion was explained by Newton in his *Herball to the Bible* by the fact that the mandrake was popularly supposed to grow spontaneously under a gallows, engendered by the decomposed body of the hanged man and was therefore endowed with the spirit of the culprit. It seems probable, however, that, by some mental twist, the shrieks had become transferred to the plant from those delirious with it.

Shakespeare illustrates this old notion in *Romeo and Juliet,* act IV, scene 3, where Juliet, hesitating to take the hypnotic for fear she will awake in the tomb too soon, says—

"Alack, alack, is it not like that I,
So early waking, what with loathesome smells
And shrieks like mandrakes' torn out of the earth
That living mortals, hearing them, run mad."

In the second part of *Henry VI,* act III, scene 2, Suffolk exclaims—

"Would curses kill as doth the mandrake's groan
I would invent as bitter searching terms,
As curst, as harsh and horrible to hear."

The nameless horror of the plant is illustrated in the following passage from an old play by George Wilkins, entitled *The Miseries of Enforced Marriage:*

"Mantichoras, monstrous beasts, enemies to mankind, that have double rows of teeth in their mouths."

In Modern Times.—In the eighteenth century, the superstitions concerning mandrake died a natural death in England and the north of Europe, while its medical properties remained known to but few. In the nineteenth century references to the plant practically disappeared from English literature. Mrs. Browning is one of the few who alludes to it. In *Dead Pan,* canto II, are these lines—

"Have the pygmies made you drunken
Bathing in mandragora?"

Somewhere about the middle of the nineteenth century, Dr. T. H. Sylvester called attention to the fact that mandragora was used by the Greeks as an anæsthetic, and Richardson, in 1869, experimented with a tincture of the root upon animals and men. Recently, Dr. W. Wayne Babcock referred to its history in a paper on scopolamine anæsthesia read before the Philadelphia County Medical Society. The writer of this paper is indebted to Dr. Babcock for much of his information (11).

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1907 NORTH TWELFTH STREET.

COMPARISON OF RESULTS IN BLOOD COUNTING BETWEEN THE EINHORN-LAPORTE AND THOMA-ZEISS METHODS.

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and
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(*From the service of Dr. Max Einhorn at the German Hospital, New York.*)

A method for counting leucocytes and erythrocytes in the stained specimen was devised by Dr. Einhorn and Dr. Laporte, of New York, and a description of it published in the *Medical News,* April 19, 1902. Previous to that time the only approximately accurate method was the one of Thoma-Zeiss, in which the blood must be in the fresh state.

We have made a number of counts at the German Hospital in New York city, independent of the count made by Dr. Fichter, of the same institution, who used the Thoma-Zeiss method, whom we have to thank for his painstaking efforts in his work.

For a description of the Einhorn-Laporte method we quote from the original article:

Our method of examination was as follows: Starting from the supposition that in carefully prepared specimens the distribution of the blood elements, according as their number is larger or smaller, will vary correspondingly, we decided to count all the red as well as all the white corpuscles in a certain square area of the dried specimen and to compare the results thus obtained with those of the Thoma-Zeiss counter. As the unit of the square area counted we have taken a square millimetre. The number of red and white corpuscles contained in a square millimetre is calculated from the fields counted, and this result is then compared with the number of blood cells contained in one

cubic millimetre as determined by the Thoma-Zeiss apparatus.

For making this determination we have found a medium power dry objective (DD or E of Zeiss or 5, 6, or 7 of Leitz) most practical. With objective DD and eyepiece 2 the whole visual field comprised 0.25 square millimetres. The field area can easily be determined for each objective and eyepiece, according to the well known algebraic formula, which makes the square area of a circle equal to $r^2 \times 3.1415$; r = radius of the circle. The radius of a visual field is determined by means of a fine stage micrometer or the division in the Thoma-Zeiss counting chamber, or, given the magnification, by measuring the apparent size of the field at 250 millimetres visual distance and dividing the number thus obtained by the magnification.

Objective DD and eyepiece 2 were used for counting the white cells. As it would be impossible to count also the more numerous red cells in so large a field, we contented ourselves by counting only a certain known fraction of the field. For the sake of still further reducing the field we inserted in the eyepiece a glass diaphragm, the centre of which is marked off accurately in an area 3 millimetres square. This is again subdivided into four equal squares. We might give to this contrivance the name "blood counting diaphragm."

After preparing the coverglass specimen and selecting a suitable area, as described, we count with objective DD and eyepiece 2 all leucocytes visible in the field. Then count the erythrocytes visible through one or more squares of the measured area of the diaphragm without moving the specimen. This procedure is repeated until about six square millimetres (24 fields) have been counted. From these figures the number of leucocytes and erythrocytes in one square millimetre of the coverglass specimen is calculated. All we have to do now in order to obtain the number of corpuscles in a cubic millimetre is to multiply the number counted in one square millimetre by the average factors (500 for red and 400 for the white cells).

The following is an example of the method of counting. With the erythrocytes each figure represents the total number found in the four measured squares of the glass diaphragm. With the DD objective and 2 eyepiece the field is 14.3 times larger than the measured area; the field is 0.25 square millimetre and the number in one square millimetre would be four times as many. For example:

Elythrocytes count: $56 + 86 + 59 = 201 \div 3 = 67 \times 14.3 = 958.1 \times 4 = 3{,}832.4 \times 500 = 1{,}916{,}200$.

Leucocytes count:

$$\begin{array}{l} 5+3+5+4+10+6+6+4+6+5=54 \\ 4+11+7+5+6+7+7+8+12+6=73 \\ 10+10+10+13+9+5+11+12+15+9=104 \\ 4+11+6+5+5+5+6+5+4+5=56 \\ \hline 287 \div 40 = 7 \end{array}$$

+ average in each field; $7 \times 4 = 28 \times 400 = 11{,}200$.

The following is a comparison of the results of the two methods:

COMPARING RESULTS OF BLOOD COUNTING WITH THE EINHORN-LAPORTE AND THOMA-ZEISS METHODS.

	Einhorn-Laporte.		*Thoma-Zeiss.*	
	Erythrocytes.	Leucocytes.	Erythrocytes.	Leucocytes.
1. John L. Banti's disease, May 6th.	2,916,000	8,800	3,092,000	7,600
2. Willie H., pernicious anæmia, May 6th.	2,166,000	6,080	2,624,000	7,600
3. Mrs. A., pernicious anæmia, May 8th	852,000	7,840	720,000	6,800
4. Anton S., nephritis, May 11th.	1,944,000	11,200	2,127,000	10,400
5. Arnold E., cholecystitis, May 13th.	3,526,000	16,800	4,087,000	27,000
6. Carl P., gastric ulcer, May 15th.	4,576,000	8,800	4,497,000	9,800
7. G. Q., atonia ventriculi, June 20.	4,890,000	8,700	5,200,000	8,200
8. Albert S., ulcus ventriculi, June 21st.	4,800,000	7,500	4,500,000	8,600
9. A. G., dilatatio ventriculi, June 10th.	4,140,000	9,200	4,023,000	12,000
10. H. F., diabetes mellitus, June 10th.	4,660,000	12,800	4,672,000	11,000

As is well known in using the Thoma-Zeiss method it is very rare to get the number exactly the same, twice from the same individual, and the slight variation between this latter method and the Einhorn-Laporte method would probably not be greater if two different specimens were taken by the Thoma-Zeiss pipette.

There are a number of advantages to be derived by this newer plan. The blood may be obtained at the bedside and the count made at the office at leisure. A differential count can be made from the same specimen, whereas with the Thoma-Zeiss, where no stain is used, this is impossible.

In patients, whom at your first visit you find suffering with a high fever of doubtful origin, the presence or absence of a leucocytosis would aid materially in placing you on the right track in distinguishing between possible pneumonia, malaria, and typhoid fever. The stain used will bring out the *Plasmodium malariæ*.

Again when a familiarity with the plan is established a very few moments' observation will at once determine a leucocytosis, or that the erythrocyte count is markedly diminished; in fact, where one has worked with the method a short time the rapid viewing of a dozen fields will convince him whether or not he has a specimen of normal blood or one in which a careful count is required.

To obtain the very best results it is necessary to exercise the greatest care from the puncture of the finger to the mounting of the specimen. Always use coverslips for the blood drop. After carefully cleansing the finger tip with alcohol or ether puncture the area with a needle. Discard the first drop. Take a thoroughly clean coverslip and just touch the centre of it to the exuding blood, then allow it to spread between two coverslips without pressure. When finished spreading, slide the coverslips from each other by a rapid movement. The spread drop will very soon dry and it is ready for staining. We used the Jenner stain, and got the best results by covering the blood with about five drops of the stain and after one half to a minute adding fifteen drops of water by means of a pipette. This dilution made the stain give a clearer picture. Five to ten minutes is all that is required to bring out the blood corpuscles so that a differential count can be made. Mount on slides with Canada balsam. Of course a mechanical stage adds to the ease of manipulating the specimen.

The Einhorn-Laporte method is simple, and although a detailed description of it is perhaps somewhat complicated at first, it is one that every general practitioner can employ to advantage, and it will quickly aid him in a diagnosis in which the blood is a factor.

A TYPICAL CASE OF TABES DORSALIS IN A NEGRESS.

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(*From the service of Dr. Charles S. Potts.*)

From the paucity of cases reported and the comments on the rarity of tabes dorsalis in the colored race, especially the female, I deem it of some inter-

est to report a case which was under observation in the nervous wards of the Philadelphia General Hospital in the service of Dr. Charles S. Potts. During the past two years there have been sixty cases of tabes dorsalis in the nervous wards of this hospital distributed as follows:—fifty-five whites, forty-nine males and six females; five blacks, four males and one female. Philadelphia and vicinity having a large colored population and this being the only case of tabes dorsalis in a negress admitted to the hospital during the past two years shows it to be rare indeed. I have been able to collect twenty-one reported cases of tabes in the colored race, fifteen males and six females. The history of this case is as follows showing all the clinical signs and symptoms of tabes as depicted in the white race, in other words a typical case, a few of the cases reported seem somewhat atypical:

Mary J. B., black, age fifty-three years; born in Maryland; occupation housework; was admitted to the Philadelphia General Hospital on April 12, 1905.

Chief complaint on admission: Weakness of left knee, unable to stand or walk, feeling of corset like constriction about waist, and constipation.

Personal history: Habits good. Menstruation began at twelve years of age, painless, normal as to time, duration, and amount. Menopause occurred at forty-three years, and at that time patient began having "sweats," which continued for seven years. She married twice, five years after patient was first married her husband died with pulmonary tuberculosis; by this husband she had four still born and one child that lived but twenty-four hours; no children by her second husband.

Family history: Patient was born in slavery, and she knows nothing of her parents, brothers, and sisters, however, she has all the physical and mental characteristics of a full blooded negress.

Past medical history: As a child she only remembers having had scarlet fever. She says she suffered from "catarrh of the stomach" eight years ago, and was confined to her bed four months, she had cramps in her abdomen and convulsions at this time (probably gastric crises and girdle pain). Two years ago patient fell against a curb stone and injured her left knee, however, it was weak for some time previous to the fall.

Present illness: For the past three years patient says her left leg was weak, but it never caused her much trouble until she fell and injured her knee two years ago. The left knee has been swollen, but never painful; her left foot swells and is painful at times. She also complains of severe abdominal pain, sharp and shooting in character with at times retching and vomiting. Her eyesight has been failing for the past two months, and at the present time she says objects are dim before her eyes.

Examination: Patient is fairly well nourished. Mentality fairly good. She is unable to stand alone or walk, owing to extreme ataxia of the legs. The left leg seems to be somewhat weaker than normal and shows a partial foot drop, otherwise there is no loss in motive power in any of the limbs. A painless swelling of the left knee is present, and passive movements of the joint shows marked lateral motion, which is not painful. Argyll Robertson pupil is noted, but there are no extraocular palsies. Eye grounds examined by Dr. Kammerly, whose report stated there was evidence of optic atrophy and opacity of the lens. Tongue, slightly coated, protruded in median line, can be moved equally from side to side, is not tremulous. The pulse is small, rapid, compressible, and irregular in both radials. There is slight peripheral arteriosclerosis. Knee jerks, Achilles jerks, and triceps jerks are absent, biceps jerks present. Babinski reflex is absent. The abdominal reflexes are present. There is no tenderness over the nerve trunks. Dermographia is present over abdomen and chest. The left leg for about three inches below the knee is apparently hypæsthetic, and the patient complains of numbness in this region, over other parts of the body there are areas of hypæsthesia, anæsthesia, and paræsthesia. The heart: Soft systolic murmur is heard at the apex. The lungs: A few dry râles heard posteriorly over the right lung. The urine is normal. The lower part of the dorsal and the lumbar spine is rather rigid, and shows a marked lordosis, greater than normal, the buttocks protrude very prominently, and when the patient is on her back the lumbar and lower part of the dorsal region do not touch the bed.

During the patient's stay in the hospital she developed a marked cystitis and complained of severe abdominal pain with attacks of nausea and vomiting and inability to retain food. She finally developed a large and deep bed sore over the sacral region, became very weak and delirious, and died August 1, 1905.

Macroscopic examination of the cord at post mortem showed it to be small and firm, section at the lumbothoracic junction revealed typical gray degeneration of the dorsal columns.

Our Readers' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LV.—How do you treat acute articular rheumatism? (Closed October 15, 1906)

LVI.—How do you treat sciatica? (Answers due not later than November 15, 1906.)

LVII.—How do you use mercury in syphilis? (Answers due not later than December 15, 1906.)

Whoever answers one of these questions in the manner most satisfactory to the editors and their advisors will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short; if practicable, no one answer to contain more than six hundred words.*

All persons will be entitled to compete under the regulations laid down by the postal authorities. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL.

The prize of $25 for the best essay submitted in answer to question LIV, has been awarded to Dr. Heber Butts, of the Navy, whose article appears below.

PRIZE QUESTION NO. LIV.

THE TREATMENT OF SPASMODIC CROUP.

By HEBER BUTTS, M. D.,
United States Navy.

A very diligent search should be made for one or more of the numerous ætiological factors by means of a thorough physical examination. Careful inquiry should be made for all sources of centric or peripheral irritation. Especially should the physician look out for the child's dentition, and freely lance its swollen, tense gums, while the pharynx and postnasal mucous membrane should be freed from

all adenoid growths and other nasal hypertrophies. Its crooked nasal sæptum should be straightened, especially if the child is a mouth breather. If circumcision is needed this should be attended to at the earliest opportunity. The bowels should be carefully regulated as well as cleared of any intestinal parasites or their ova which may be present. If the child is of a high strung, nervous temperament all possible sedative influences should be brought to bear upon it; it should not be scolded for trifling offenses, and all sources of irritation should be carefully avoided. If the patient is a rickety subject, as these children frequently are, every effort should be made to improve its nutrition by proper nourishing diet, hygienic measures, and the judicious use of cod liver oil.

The prophylactic treatment of spasmodic croup is of the greatest importance. Upon it will depend, in large measure, the physician's success or failure to cure the disease. It may generally be assumed, even if it is not apparent, that the child is more or less of a nervous temperament. Acting upon this assumption, its daily life and diet should be regulated. The child should have quiet, pleasant surroundings. It should not be permitted to overload its stomach during the day, and the evening meal should be light. Highly seasoned articles of food and all condiments should be excluded from the dietary. Inasmuch as there is always more or less catarrhal laryngitis associated with the so called "functional spasm" of the muscles of the larynx, especial care should be taken to guard against cold catching. The child should be dressed warmly, and it should get an abundance of fresh air and sunlight during the day. If an abundance of nourishing food fails to improve the child's nutrition, it may be improved by the judicious use of tonics. As the general health improves the attacks will be milder and further apart. Daily cold sponging of the chest and the cervical and dorsal portion of the spine is a great advantage. The cold improves the circulation of the blood in the skin and larynx as well as the nervous tone of the larynx, and lessens the liability to spasm. The child should sleep, if possible, in a large, well ventilated room. It should sleep in a bed apart from its parents or other children, and should have only sufficient bed covering to keep it comfortably warm. The clothing should be quite loose. In addition, a very good prophylactic measure is to give the child several times during the day, and at bedtime, inhalations of steam, laden with the compound tincture of benzoin. This has a very soothing effect upon the mucous membranes of the respiratory tract, and especially of the larynx. The benzoin is best administered by adding five or ten c.c. of the compound tincture to a quart of boiling water, and directing the child to inhale the steam.

Nervous sedatives may be required, and a very good one for this affection is composed of ¼ grain of antipyrine and one grain of sodium bromide for every year of the child's age combined with simple syrup, and administered in teaspoonful doses at bedtime.

Treatment of the attack: To allay the spasm a whiff of chloroform, or a few whiffs of amyl nitrite, is most effective. If these measures are not available, the child should be put into a hot bath, and a nauseating emetic given. The best emetic for this purpose is one composed of ipecac and the compound syrup of squill. This should be administered until the child is slightly nauseated. The child should be directed to suck small pieces of ice ad libitum, while an ice bag should be intermittently applied to its larynx for periods of fifteen minutes each, and the cervical and dorsal portions of its spine should be cold sponged.

The sole object of all of these measures is to bring about a relaxation of the spasm of the adductor muscles of the larynx, the accomplishment of which at once relieves the child.

ANNAPOLIS, MD.

Dr. H. Page, of the army, writes:

1. *The Attack.*—The patient suffers from a laryngeal stenosis, spasmodic in character and, probably, purely functional. Viscid mucus accumulates in the pharynx, and this with the spasm causes severe dyspnœa and cyanosis, which greatly alarm both the patient, usually a babe under five years of age, and his parents. The cause is obscure and is usually ascribed to a slight bronchial catarrh or some reflex disturbance. Gastric irregularity is commonly associated with these attacks. Prodromal symptoms are absent or slight. One attack predisposes to subsequent seizures, and heredity seems to play a part.

The physician's duty is to quickly relieve the patient, and to quiet the parents with assurances that the disease is not fatal. A hot bath or hot poultice is ordered to be made, while a teaspoonful of syrup of ipecac is given the child. The dose is repeated every ten minutes, until the patient vomits. Emesis relieves the gastric reflex disturbance, general and local relaxation is produced, and the mechanical effort dislodges the mucus. This frequently is all that is required.

While awaiting emesis a few whiffs of chloroform often serve a useful purpose in relaxing spasm, and if materials are available to construct a croup tent, steam vapor inhalations are extremely efficient. It is, however, better to omit the latter than to use dangerous makeshifts and to run the risk of fire or burns. When the bath is ready place the baby in the tub and rub vigorously chest, back, and limbs. When the skin is reddened, remove the child from the bath, and wrap it up in hot blankets to promote diaphoresis. In the place of the tub bath, hot poultices over the throat and chest, or alternate douches of hot and cold water may be all that is necessary.

If, in spite of these measures cyanosis increases, as will rarely happen, the physician must intubate. This simple operation gives a maximum of comfort to baby, parents, and physician. It is easily performed, does not particularly frighten the parents, and gives instantaneous relief. It is far preferable either to further delay or to the use of really dangerous measures such as the administration of antimony and apomorphine, or to such doubtful ones as mopping the throat to produce emesis or to remove mucus. Second attacks in

the same night are unusual, but for one or two subsequent nights attacks may be expected.

2. *The Interval.*—On the day following an attack of spasmodic croup the baby should receive broken doses of calomel as a routine measure. The affection is probably but one of those expressions of reflex explosion seen in infancy in so many forms. Gastrointestinal disturbances certainly seem to be an exciting factor in a number of cases, and calomel, given to correct this, can do only good. There is nearly always in these cases some bronchial catarrh which should be vigorously treated. The patient should be kept out of drafts, the feet should be kept dry and warm, and, the weather permitting, the baby should have moderate exercise in the warm sunlight out of doors.

The physician should now make a careful examination to locate any source of reflex disturbance. Elongated uvula, hypertrophied tonsils, adenoids, or any other cause of occlusion or irritation of the respiratory passages demand attention, preferably surgical. Such remote possibilities as adherent prepuce or vaginitis should not be neglected on general principles.

The baby should receive a daily tepid bath with vigorous rubbing, and the neck and throat of this child (as well as every other child) should be sponged every morning with cold water to "harden the throat," which must never be covered up with an excessive amount of wraps; except in the most rigorously cold climates furs should never be placed around the throats of children. Tonics may be required for the weak and anæmic. The diet should be investigated and corrected when necessary; and most important of all, it is imperative that the child receive day and night an abundance of pure, fresh air.

(*To be concluded.*)

Therapeutical Notes.

Chloroform Water as a Hæmostatic.—Spaak (*Le Journal de médecine*, September 16, 1906) has used for several months chloroform water as a hæmostatic agent. He found it superior to all other styptics, and recognized the following advantages: It acts with marvellous rapidity. It has not the slightest disagreeable taste or odor. It is not escharotic. It is cheap and easily obtainable, and can be made as required. It is not unpleasant to apply and does not interfere with the surgeon in his operations. The solution he recommends is two per cent., in simple water, as the menstruum.

Rapid Cure of Dry Pleurisy by Potassium Iodide.—Lucien Jacquet and Luzoir reported to the Société médicale des hôpitaux three cases, illustrating to a remarkable degree the superior qualities of potassium iodide as a resolvent. Two were of long standing, and the friction sound was so marked that it could be heard at a considerable distance from the thorax (at least 65 centimetres); but these adventitious sounds entirely disappeared in a few days under the exclusive treatment by potassium iodide. The third was a more recent case, but the treatment was likewise successful.—*La Quinzaine thérapeutique*, July 10, 1906.

Veratrine in Severe Neuralgias.—Five centigrammes of veratrine, dissolved in five grammes of equal parts of diluted alcohol and distilled water, are recommended to be cautiously applied to the surface of the skin in rebellious and severe neuralgias. The quantity used at one time should be from two to eight drops (and care should be taken not to get any of it in the eyes). Another preparation, in the form of a pomade, is used by Durand, who prescribes it as follows:

℞ Veratrinæ, ...0.10 gramme;
Morphinæ hydrochloridi, ...0.10 gramme;
Unguenti aquæ rosæ,.....5 grammes.
M. ft. unguent. Apply a small portion to the painful area, and use slight friction, once or twice a day.

Le Journal de médecine, September 16, 1906.

Treatment of Buccopharyngeal Ulcerating Scrofulide Lesions by Potassium Iodide.—Jacques reported to the Société de médecine, of Nancy (*Revue médicale de l'Est*, July 1, 1906), his experience in treating perforating scrofulous ulcers of the soft palate and lupoid ulcers of the pharynx and tonsils. No results were obtained from any local treatment, except those having a calmative or cleansing effect. Injections of tuberculin were also without benefit. Although the cases had no syphilitic history, and in fact were not considered syphilitic, but of local bacterial origin, they healed rapidly under doses of thirty grains daily of potassium iodide with a little mercurial added.

A Diet Free from Chlorides for Epileptics.—Salonggi, Damo, and Zambelli (*Rivista critica di clinica medica* and *Revue de thérapeutique*, June 15th), after studying the influence of a diet free from chlorides, and also one with diminished chlorides upon epileptics and upon the effects of the bromide treatment, conclude that the chloride free diet notably diminished the number of attacks, and sometimes suspended them for months at a time. The reduced chloride diet only diminished the number of the attacks. The addition of a small quantity of bromide, however, reduced still further the frequency of the paroxysms. In the light forms of epilepsy the mere reduction of the chlorides is sufficient to reduce the attacks or even to banish them for a long time. In severe forms it is necessary also to give bromides. Finally, it was noted that the chloride free diet, alone or associated with the bromide treatment, even when continued for years, did not cause in the patients so treated any disturbance of the general health, either bodily or mental.

Treatment of Erysipelas in Infants with Antistreptococcic Serum.—In the *Annals de la société médico-chirurgicale de Liége* for June, 1906, appears a brief communication from Bouttiau, of Verviers, on the treatment of erysipelas in childhood. The author considers the disease as being always of serious import in young children, and protests against the loss of time in following the usual symptomatic treatment. He considers the injection of antistreptococcic serum as the only rational, causative treatment, and opposes the ad-

ministration of quinine or other internal remedies, except an anodyne or soothing potion, so as to satisfy the caretakers and make them feel that something is done. He particularly objects to the use of any ointment, whether antiseptic or other, contenting himself with simply dusting the surface with starch. He surrounded the patch of erysipelas with a zone of collodion, but it did not appear to influence it in any way. Injections of antistreptococcus serum (*Institut Pasteur*) were found to reduce the fever temperature and shorten the duration of the disease. In two reported cases, a child of six years and an infant of five months, this treatment was successful in producing a crisis in thirty-six hours after the injection, and a diminution in the duration of the disease. It is said that these injections are without bad effects even in very young infants.

The Injection of Saline Solutions Subcutaneously for Neuralgia.—The method suggested by Launois in 1889 for the treatment of sciatic neuralgia by subcutaneous injections of saline solutions, has been found applicable to other forms of neuralgia. The technics is simple. The spot selected is cleaned and made antiseptic by an alcoholic solution of corrosive sublimate. An aseptic syringe of ten cubic centimetres capacity is used for the injection. The needle of iridoplatinum is sterilized by passing it lightly through the flame. The solution consists of five grammes of sodium chloride, ten grammes of sodium sulphate, dissolved in 1,000 c.c. of distilled water. The addition of the sodium sulphate appears to avoid the pain that is caused by the use of simple solution of sodium chloride. The solution should always be sterilized immediately before using. The syringe is filled with the warm solution, and five cubic centimetres are injected at each of the painful points. In this way five or six injections may be made at each séance. The depth which the needle pierces is regulated by the region selected, and by the situation of the nerve. In certain cases, as in the sciatic region, it is made deeply (interstitial injections). The small degree of tumefaction following the injection rapidly disappears, especially if light massage be made with the tips of the fingers. This treatment may be repeated daily, without danger, for several days. Should the case prove rebellious, the injections may be continued for a time longer, but every second day. This method can be used with success, not only in treating sciatica of neuralgic form, but also in facial neuralgia, pleurodynia, headache, and lumbago.—*La Quinzaine thérapeutique*, July 10, 1906.

The Treatment of Ankylostoma, or Uncinaria Duodenalis in Brazil.—K. Schewald, of Joniville, Brazil (*Medizinische Blätter*, Wien, March 8, 1906), from his large experience in treating this disease, declares the following to be the best method to get rid of the ankylostomata. In the evening the patient takes a good dose of calomel and jalap to carry away the mucus which shields the worms. The following morning castor oil is given. In case the oil does not cause an evacuation in two hours, a dose of senna leaves is administered. By this means even children of one year of age have been treated with success. The bowels should be kept rather loose for at least eight days after the treatment, because some of the worms, which were sickened by the castor oil, may revive and commence to furnish eggs again. Malaria is common in Brazil, and the author found in his own experience that nearly every patient suffering with intermittent fever also had eggs of ankylostoma in his dejections. He also made the interesting observation that the parasites as the rule contained the malarial organisms. After entering the alimentary canal of the worm, the hæmatozoon found its way to the salivary glands, just as in the case of the anopheles. When the worm sucks the blood, the malarial organisms escape into the blood current of the host. In this way recurrent and refractory attacks of intermittent fever may be explained, and likewise the attacks which return at the same time each year. He did not succeed in finding the malarial organism in the eggs, but he suggests that malaria may be transmitted or acquired through their agency. As a matter of clinical experience, he has found it to be necessary to always give the "worm cure" to the patients before giving antiperiodics. In some cases he found that the worm cure was successful in breaking the chills without giving quinine or other medicine.

Potassium Permanganate for Bites of Serpents.—Muir Evans recommends a simple and expeditious method of treating serpent bites and the stings of poisonous fishes. He opens the wound freely and applies crystals of potassium permanganate to the surface. In the *New England Medical Journal* for August, 1906, there is a communication from C. W. R. Crum, of Jefferson, Md., who extols the permanganate treatment for bites of copperhead snakes. He claims better results from the following method than from any other treatment he had hitherto employed. He freezes the area around the bite with ethyl chloride spray, then incises the integument, usually making two parallel incisions of almost an inch in length through the two little wounds made by the fangs of the serpent. The wound is then mopped with a strong permanganate solution for a few minutes and a compress wet with the same solution is laid over the wound. The edges are lifted up, every half hour or hour, and fresh solution poured over the surface. The incisions, which are trifling, usually heal in a day. He remarked that an incision in an area poisoned with snake bite appears to heal with extraordinary rapidity, even in the absence of any effort at asepsis. The method has been employed successfully by Crum in eight cases. He is inclined to attribute some virtue to the freezing by ethyl chloride over and above the mere anæsthetic effect. If the patient be seen within one hour after the bite has been inflicted, he is usually all right in two or three hours, with the exception of a trifling swelling. The extension of the poison seems to be checked very shortly after the application. Internally, a few doses of strychnine may be given hypodermically and occasionally some whiskey and ammonia, perhaps in deference to local prejudice rather than with a belief that they exert any special therapeutic effect.

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THERAPEUTIC INOCULATION WITH BACTERIAL "VACCINES."

To those who have followed the literature of experimental medicine during the past few years the name of Professor A. E. Wright, of London, has become familiar, for it is linked with the discovery of the opsonins, that remarkable group of substances present in the blood which prepare the bacteria for the phagocytic action of the leucocytes. On Saturday evening, October 20th, the members and guests of the Harvey Society had the rare fortune to listen to this distinguished investigator, and to hear him expound the wonderful results obtained in the clinical application of his laboratory researches.

The speaker alluded to the different means that have been adopted to combat bacterial infection, namely, the expectant treatment, the use of antiseptics locally applied, the surgeon's method of extirpation, Bier's treatment by means of artificial hyperæmia, the tuberculin therapy of Koch, the Röntgen ray and the Finsen light treatment, and the various forms of serum therapy. The best results of the expectant treatment have been obtained in such general infections as typhoid and Malta fevers, endocarditis, etc., but in local infections it has offered nothing. In the latter the local application of antiseptics has found its sole plea for usefulness. The surgeon's method of extirpation became gradually limited chiefly to joint and bone diseases, but in some cases extirpation served only to increase the amount of systemic bacterial invasion. Bier's method of inducing hyperæmia was useful mostly in early and selected cases, particularly those of joint involvement. Serum therapy reached only a limited sphere of application, the antistreptococcus serum not yet having demonstrated its usefulness.

Was there a weapon that we might wield still more powerful than those mentioned? The study of the process of Nature's cure afforded an affirmative answer. The bacteria are confronted in the body with conditions quite unlike those present in the tube of nutrient broth. In the former, in addition to the protective rôle of phagocytosis, one finds the bacteriotropic substances, which are attracted by and unite with the bacteria, the agglutinins, the bacteriolysins, and, apparently the most important of all, the opsonins. These produce no visible changes in the external behavior of the bacteria, but alter them in such a manner as to render them more vulnerable by the phagocytes.

Professor Wright has found that in systemic infections the opsonic power of the patient's blood is remarkably reduced, and that, by inoculating the patient with sterilized cultures of the particular microorganism causing the infection, his opsonic power may not only be brought up to normal, but made to exceed it. Moreover, he has proved that such inoculation has distinct therapeutic value. He cited a number of cases illustrating his methods and results. In studying the effects of such inoculation Wright found that the latter was immediately followed by a drop in the opsonic power, which soon rose, and again came down, but remained at a higher level than the normal. The initial decline is known as the negative phase, and the later rise as the positive phase. With a series of successive inoculations there is a cumulative, or staircase, rise of positive phases, to which, however, there is a limit. With very large doses there is a cumulative negative phase. One might aim at the cumulative or discrete inoculations. The variation in opsonic power of patients under observation and treatment was charted after the manner of the temperature curve.

The variations in the opsonic curve noted in patients not artificially inoculated proved that these frequently inoculated themselves from the local areas of infection. Thus, a patient suffering from hip joint disease, who had been kept recumbent for a long time, would, whenever he moved the affected joint, show the same variations in opsonic power as if he had been artificially inoculated with dead tubercle bacilli.

These results explained the mechanism of cure in the ninety to ninety-five per cent. of typhoid cases that ended in recovery on the expectant

plan of treatment; and the same was true of Malta fever, septicæmia, etc. In these cases the patients are continually inoculating themselves from the local lesions, which inoculations cause an increased production of opsonins, with consequent accelerated phagocytosis. Thus, early cases of tuberculous adenitis showed a low opsonic index, while advanced cases showed a higher index. Dr. David Lawson had found that his sixty sanatorium tuberculous patients had a subnormal opsonic index.

In contrast with Nature's method of cure, Dr. Wright pointed out that the effect of the local application of antiseptics was to inhibit phagocytosis. He found that inoculation with "vaccines" of the tubercle bacillus was particularly valuable in the local forms of disease, such as tuberculous osteitis of the fibula, lupus, etc. In the light of what Dr. Wright has already contributed to this subject, who can venture to predict the ultimate therapeutic possibilities of bacterial inoculations? The numerous cases which have been cured by means of this method certainly make it worthy of a more extended trial.

THE SANITARY CONDITION OF THE ISTHMUS OF PANAMA.

The reports of the Department of Health of the Isthmian Canal Commission, which are issued monthly under the auspices of Colonel W. C. Gorgas, the chief sanitary officer of the isthmus, make interesting reading. The Isthmus of Panama has aways been considered to be one of the most unwholesome spots in the world, though possibly not quite so trying as the region of the Congo, but, nevertheless, a most trying region for men from temperate climates to live in.

The sanitary report for the month of August has just been received. It shows that there has been an entire absence of yellow fever throughout the isthmus for nearly a year, the last case having been reported from the city of Panama on November 11, 1905. The deaths from malaria were seventy-eight in August, against one hundred and five in July. There were twelve deaths from typhoid fever in August, against seven in July. There were nineteen deaths from dysentery in July and twenty from the same complaint in August. Three cases of smallpox were reported in Colon. Pneumonia, which for the preceding three or four months, had been one of the most fatal diseases, had decreased somewhat during the month of August. There were five deaths from beriberi in the city of Panama. The whole population of the isthmus is over 75,000, and the death rate, as shown in this report, is not large. The Canal Commission has on its rolls 29,555 employees, which is the largest force ever at work on the isthmus, being about twice as large as that the French had at work at any one time. Among these employees there were one hundred and fifty-three deaths, eight among the whites and one hundred and forty-five among the blacks. Four fifths of the whites are from the United States. The other fifth are foreigners, Spaniards, Italians, and others. The Americans, who number about four thousand, are made up of clerks, machinists, and other higher employees on the works. Among these four thousand there were only two deaths during the month of August, neither of them due to a preventable disease.

The sanitary condition of the isthmus shows best in the sick rate. Only forty-two men out of every thousand employed were excused from work daily on account of sickness. This is a very low ratio. Colonel Gorgas refers to a recent article in a magazine in which the sanitary condition of Colon is depicted gloomily, particularly as regards the water supply. He points out that the mortality table shows that no death from either typhoid fever or dysentery, the two diseases which would show an increase if the water supply were as bad as the popular writer indicates, occurred in Colon during August. Colonel Gorgas deserves great credit for the work he has done and is entitled to much encouragement in the work he is doing in the Canal Zone. Partially informed critics had better refrain from attacking a subject about which they are so incompetent to write. A perusal of Colonel Gorgas's reports month by month will satisfactorily refute any pessimistic accounts of the sanitary condition of the Isthmus of Panama.

SOME MISCONCEPTIONS REGARDING GERM DISEASES.

The rather old fashioned title adopted for this article will serve to call attention to one of these misconceptions. Infectious diseases are often alluded to in a general way as bacterial. In attempting to show statistically whether this word was allowable in a general sense or not, the following results were obtained:

Infections demonstrated to be due to bacteria	20
Infections probably due to bacteria	2
Infections demonstrated to be due to protozoa and other animals	7
Infections probably due to animal parasites	6
Infections due to fungi or similar vegetable parasites	2
Infections recognized clinically, but with conflicting or almost entirely negative results as to germ	5
Total	42

In making this count, attention was called to another misconception, namely, that it was a simple matter to classify or, at least, to list the infec-

tions. On the contrary, we doubt whether any two students could agree as to a list of infections or whether the same authority could make identical lists at intervals of a week, unless he committed his first list to memory. There are a number of diseases encountered in the tropics, known by various local names, about which there is much dispute. It is not yet decided whether yaws is or is not syphilis, although an organism similar to the *Spirochæta pallida* of syphilis has been found in the lesions. Dum Dum fever is at present usually attributed to the Leishman-Donovan bodies, and these are considered by several authorities as probably atypical trypanosomes. It is difficult to draw lines between dermal parasitism and true infection; thus, shall we count verruga peruviana as an infection or not? Again, it is sometimes difficult to determine whether various local names apply to a single or to several distinct diseases.

We have not included surgical sepsis in the list of specific infections. It may be caused by more than a dozen bacteria, singly or in mixed culture, and certain of these produce more or less readily recognizable lesions. Shall we count sepsis as one or many infections? Shall we count as one the bacteria that produce practically indistinguishable symptoms of "blood poisoning" and then add those which have fairly distinct features?

We have counted trichinosis and ecchinococcus disease as infections, but not the milder and rarer occurrence of larval stages of the other vermes in man. We have counted malarial disease, filariasis, and actinomycosis separate, although the first two are definitely subdivisible, both clinically and from the biological standpoint, since there are several species of each parasite. It is also maintained that there are two distinct species, or at least varieties, of the actinomyces.

These are by no means all the obstacles to a satisfactory listing of the infections. Indeed, it is rather difficult to define an infection in clear terms. As ordinarily employed, the word signifies a fairly definite symptom complex, supposedly and in some cases actually due to a definite germ, and of some degree of severity, as contrasted with various local lodgments of parasites, vegetable or animal in nature, in the skin, alimentary canal, etc. It must not be forgotten that, starting with a typical general infection, we can form a progressive series of analogous instances of parasitism, less severe and more localized, and finally wind up with beasts of prey and toxic plants, which are not parasitic at all.

Within the last few years the term ultramicroscopic has been applied to undiscovered germs which have apparently passed through porcelain filters that retain ordinary bacteria. Hektoen has mentioned the virus of foot and mouth disease, peripneumonia, rinderpest, sheep pox, chicken typhus, horse sickness, and the epithelioma contagiosum of fowls. Even the virus of syphilis has been considered in this category, although the evidence inculpating the *Spirochæta pallida* seems conclusive. On purely theoretical grounds, it is doubtful whether there is an underworld of living organisms decidedly smaller than the ordinary bacteria. Moreover, the facts that the spirochæta has been considered ultramicroscopic and that, in some instances, conclusions as to ultramicroscopic size have been drawn from experiments with filters subsequently shown to have been faulty justify considerable skepticism. Extremely contagious diseases are obviously due to microorganisms of unusual tendencies to dissemination. Such germs are probably very numerous, light, and lacking in hygroscopism. The last characteristic may be connected with a resistance to stains that partially explains the fact that the germs have not been seen, while all these characteristics render accidental contamination of the filtrate quite possible. *A priori*, it may be conceded that undiscovered germs are really very minute, though not ultramicroscopic in any true sense, but experience shows that this is not necessarily true.

EUROPEAN WORK AGAINST TUBERCULOUS DISEASE.

In a very interesting paper published in the *Johns Hopkins Hospital Bulletin* for October, Dr. Joseph Walsh gives an account of the campaign as it is being carried on in different countries of Europe, and suggests some items in which this country might profit by observation. He found the greatest number of sanatoria for the treatment of the disease in Germany, and the smallest number in France. The latter country concentrates its efforts upon preventing and curing tuberculous disease in children, and supports a number of sanatoria for that purpose. England comes second to Germany in the number of such institutions, and in both countries they have been built and equipped regardless of expense, but in Germany the maintenance is equally well assured, whereas in England he found magnificently equipped wards almost or quite empty, owing to lack of funds. The reason for this seems to be that the funds for the conduct of the sanatoria are collected from subscription, and even where the money is forthcoming it carries with it the

privilege of the subscriber to send a certain number of patients to the institution, an arrangement which results in the forced acceptance of unsuitable cases and the shortening of the stay of the individual patients. In Germany the charity sanatoria are built and supported largely by the health insurance companies, and adequately maintained.

The private sanatoria of Germany are also expensive and beautiful, but cannot, in Dr. Walsh's opinion, compare with the public ones. In one particular a difference is noticeable, namely, the accommodations for sleeping out of doors, which are extensive in the public institutions and lacking in the private ones, even the opening of windows in the sleeping rooms being dependent upon the whim of the patient. Theoretically, however, the value of the fresh air treatment is everywhere insisted upon. Elaborate douche rooms and inhalation rooms are commonly found in these foreign institutions, but the former are hardly ever used, and the latter, according to the statement of a physician, solely for their psychic effect. Some of the sanatoria use tuberculin freely; others do not. Throughout Europe he found in use the Detweiler pocket sputum cup, with which he was far from satisfied, as he thinks it affords but defective protection against contamination of the pocket and the hands. Various germicides were employed, but in the only place where a careful study had been made of them the choice fell upon caustic potash, which is also used in the Phipps Institute, of Philadelphia.

Dr. Walsh emphasizes the usefulness of hospitals for advanced cases, which thus remove the patient from his home at a time when he is especially a source of danger to those around him. He is of the opinion that the low death rate from tuberculous disease in London is due to the presence of these hospitals. Even more to be desired is the special dispensary. According to Calmette, who founded such a dispensary, or "preventorium," at Lille, its purpose is not merely to diagnosticate the case and distribute medicine to the poor, but to investigate and draw tuberculous patients under control; to give them sufficiently often and for a sufficiently long time the care they need; to advise them and their family properly; to give them, when they are obliged to stop work, proper nourishment, clothes, bedding, sputum cups, and germicides; to make their lodging hygienic; to insist on frequent cleansing and disinfection; to procure for them when necessary a more hygienic lodging; to wash their linen gratuitously in order to avoid the spread of contagion to the family or laundress; to see that private benefaction is properly expended; and to obtain succor for the patient in every possible way.

Calmette's statistics on the general cost of such a dispensary give about thirty cents a day for each patient, and he urges the establishment of one in the populous quarter of every large town. A number of well equipped institutions of this kind are found in Berlin and in other parts of Germany. Another effective means of combating the disease is found in the park convalescent camps, where patients may spend the day under the care of a nurse in pleasant outdoor surroundings, with provision for shelter when need be, food, etc. In closing, Dr. Walsh recommends the cooperation which societies abroad are securing from other organized bodies of reform in every direction, a movement which is beginning to gather headway in this country as well.

THE SHAMELESS SNEEZER.

Being in its essence involuntary and irrepressible, sneezing has to be tolerated even in solemn gatherings, but society is too tolerant of the vulgar sneezer who thinks it humorous to intone a maliciously prolonged sequel to the explosion. Such a performance, repulsive as it is, is a mere piece of vulgarity, but the sneeze in itself may be so mismanaged—neglected, we might say—as to be a menace to the health of the bystanders. One would suppose that any decent human being, finding himself about to sneeze in company, would take pains to put his handkerchief to his face or, lacking time for that, at least break the nasal shower with his hand. Some there are who, traveling in a public conveyance, are considerate enough to throw up their newspaper as a shield; but there are a few, and their number seems to be growing, who deliver their spray broadcast, all its germs of course included. It needs no very lively imagination to conceive that various diseases may thus be spread, and it is a pity that the shameless sneezer is not suppressed.

STARCH GRAINS IN URINE.

Starch grains have sometimes been found in urine, but they have always been regarded as adventitious matter. Dr. Rahel Hirsch, however (*Zeitschrift für experimentelle Pathologie und Therapie*, iii, 2; *Berliner klinische Wochenschrift*, September 17th), finds by experiment that starch grains are capable of passing unchanged through the intestinal mucous membrane into the blood, from which they are excreted by the kidney. In the human subject he has not found them in the blood, but only in the urine.

News Items.

NEW YORK CITY AND STATE.

The New Pavilion at St. Luke's Hospital, the gift of Mrs. Margaret J. Plant-Graves, was dedicated on Thursday, October 18th. The new ward, which will accommodate seventy patients, cost about $500,000.

Personal.—Dr. Roswell Park, of Buffalo, has been elected to membership in the Association of French Surgeons, he being the fourth American surgeon upon whom this honor has been conferred.

The Buffalo Academy of Medicine.—The following programme has been arranged for a meeting of the *Section in Surgery,* to be held on Tuesday, November 6th: Arthritis Deformans of the Spine, by Dr. Prescott LeBreton; The Present Status of Lumbar Anæsthesia, by Dr. Max C. Breuer.

The West Side Clinical Society of New York will hold a meeting at the New York Athletic Club on Thursday, November 8th. The programme includes a paper on Some Debatable Questions in Medicine and Surgery, by Dr. J. A. Bodine. The nomination of officers for the ensuing year will also take place.

The New York Academy of Medicine.—The *Section in Pædiatrics* held a meeting on Wednesday evening, October 24th, with the following programme: Treatment of Chronic Valvular Disease in Children, by Dr. E. E. Cornwall; Report of a Case of Vesical Calculus (with specimen), by Dr. Archibald D. Smith.

The Medical Association of Central New York.—At a meeting of this association held at Syracuse on Tuesday, October 16th, officers were elected as follows: President, Dr. William B. Jones, of Rochester; vice-presidents, Dr. C. C. Frederick, of Buffalo, and Dr. P. M. Dowd, of Oswego; secretary, Dr. C. A. Greenleaf, of Canoga; treasurer, Dr. William M. Brown, of Rochester.

The Medical Society of the County of Onondaga.—The following programme was presented at a quarterly meeting of this society held at Syracuse on Tuesday, October 23rd: Demonstration of Some New Rectal Instruments, by Dr. D. H. Murray, Syracuse; Some Observations on Anæsthesia and Anæsthetics, by Dr. J. J. Buettner, Syracuse; Address: A Century's Progress in Therapeutics, by Dr. J. L. Heffron, Syracuse; Clinical Thermometry (stereopticon illustrations), by H. G. Norwood, Rochester.

The Associated Physicians of Long Island.—The programme for a joint meeting of this association with the one hundredth annual meeting of the Queens-Nassau Medical Society, held at Greenpoint, L. I., on Saturday, October 13th, included the following: A History of the Suffolk County Medical Society, by Dr. Frank Overton, of Patchougue; Historical Notes, by Dr. James S. Cooley, of Glen Cove; and an address on Therapeutics: The Old and the New, by Dr. James P. Warbasse, of Brooklyn.

The Clinical Society of the New York Postgraduate Medical School and Hospital.—The following programme was arranged for a meeting held on Friday, October 19th: Presentation of Patients; Presentation of Specimens, Instruments, and Apparatus: Exhibition of a New Gas and Ether Inhaler, by Dr. H. D. Furniss; Reports of Cases: A Case of Tertian Malaria, Complicated with Hæmatemesis, by Dr. J. G. Hunt; Paper of the evening: The Preventive and Abortive Treatment of Mastoiditis, by Professor William Sohier Bryant; Discussion to be opened by Professor Phillips and continued by Professor Douglass, Professor McKernon, Professor Ray, and Professor Held, and Dr. McFarland, Dr. MacPherson, and others.

The Hospital Conference of the City of New York.—A meeting of the conference will be held at the New York Academy of Medicine, 17 West Forty-third Street, on Tuesday afternoon, October 30th, 1906, at half past three o'clock. The regular order of business will be supplemented by a discussion of the recently promulgated system of uniform hospital accounting, the discussion to be led by a well-known authority. The conference will be invited to consider, also, a plan for collecting and preparing, in suitable form, the facts upon which its collective reasoning and its joint action for the promotion of economy and efficiency in hospital management should be based.

The New York Infirmary for Women and Children is trying to raise money for a new hospital building. Promises of $94,000 have been received and only $30,000 more is needed, but this must be raised by November 1st in order to secure some of the money promised. The hospital has seventy beds, a dispensary and a large outdoor department. Last year there were 1,043 patients treated in the hospital, 45,389 in the dispensary and 8,968 visits were paid by infirmary doctors to persons in their homes. With one exception the infirmary is the only hospital where women can be treated by physicians of their own sex. Contributions may be sent to E. C. Henderson, 40 Wall Street; Edwin Latham, 82 Beekman Street, or Miss Julia B. de Forest, 121 East Thirty-fifth Street.

Society Meetings for the Coming Week:

TUESDAY, *October 30th.*—Rome, N. Y., Medical Society; Boston Society of Medical Sciences (private).

WEDNESDAY, *October 31st.*—Auburn, N. Y., City Medical Association; Berkshire, Mass., District Medical Society (Pittsfield).

THURSDAY, *November 1st.*—New York Academy of Medicine; Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua, N. Y.; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington); Medical Society of City Hospital Alumni, St. Louis; Atlanta Society of Medicine.

FRIDAY, *November 2nd.*—New York Academy of Medicine (Section in Surgery); New York Microscopical Society; Gynæcological Society, Brooklyn; Manhattan Clinical Society (private); Practitioners' Society of New York (private); Clinical Society of the New York Post-graduate Medical School and Hospital; Baltimore Clinical Society.

SATURDAY, *November 3rd.*—Manhattan Medical and Surgical Society, New York (private); Miller's River, Mass., Medical Society.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending October 20, 1906:

	October 20.		October 13.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	121	25	113	15
Smallpox	2	..	..	..
Varicella	20	..	9	..
Measles	61	4	50	2
Scarlet fever	89	3	73	1
Whooping cough	24	13	33	11
Diphtheria	194	22	205	22
Tuberculosis pulmonalis	359	174	390	169
Cerebrospinal meningitis	11	13	5	4
Totals	881	254	878	224

PHILADELPHIA AND THE MIDDLE STATES.

Change of Address.—Dr. Charles S. Potts, to 1728 Chestnut Street, Philadelphia.

Milton (Pa.) Hospital.—The physicians at Milton, Pa., have undertaken to raise $20,000 for the building and equipment of a hospital.

Franklin Institute.—Dr. Henry Leffman delivered a popular lecture on Monday, October 15th, under the auspices of the Franklin Institute on The Modern Methods of Purification of Water Supply and Sewage.

Suit for Malpractice.—Dr. Ellwood M. Corson, of Norristown, Pa., has been sued by Patrick Naylor and his wife, of Bridgeport, Pa., for $15,000 damages, for alleged failure to properly reduce and dress a fracture and dislocation of the right arm.

Philadelphia Municipal Hospital Census:

	Remaining last report.	Received.	Discharged.	Died.	Remaining.
Diphtheria	45	90	72	10	53
Scarlet fever	51	22	21	1	51

Training School for Nurses, Protestant Episcopal Hospital of Philadelphia.—The commencement of the training school for nurses of the Protestant Episcopal Hospital of Philadelphia was held at the hospital, Front Street and Lehigh Avenue, on the evening of October 10th. Dr. David L. Edsall delivered the address. The diploma was awarded to sixteen young women.

The Health of Pittsburgh (Pa.)—The recent large incidence of typhoid fever and other transmissible diseases in Pittsburgh has led the Pittsburgh Board of Trade to take active steps toward the improvement of the sanitary con-

dition of the city. Among the matters that have received attention at the hands of the Board of Trade are the destruction of the refuse not covered by the garbage contract, the use of sprinkling wagons on the streets and avenues in the East End, and the improvement of the water supply.

Medical Club Reception.—On the evening of Friday, October 19th, the Medical Club of Philadelphia tendered a reception to Dr. George McClellan, professor of Descriptive Anatomy in the Jefferson Medical College, and Dr. Edward Anthony Spitzka, professor of Applied Anatomy in the Jefferson Medical College. The reception was held in the Bellevue-Stratford Hotel and was attended by about 350 people. Both Dr. McClellan and Dr. Spitzka made short addresses.

Is the Office of State Dairy and Food Commissioner Unconstitutional?—In Pittsburgh, Pa., on October 9th, argument was heard by the Supreme Court in a case instituted on the ground that the office of State Dairy and Food Commissioner, held by Dr. B. H. Warren, is in violation of the constitution. There has been much dissatisfaction among producers and manufacturers of food products with the method of administering the office pursued by Dr. Warren, and this dissatisfaction has culminated in the present law suit.

Lecture by Sir A. E. Wright.—Sir Almroth E. Wright lectured in the upper lecture room of the College of Physicians of Philadelphia on the evening of Monday, October 22nd, under the auspices of the Henry Phipps Institute for the Study, Prevention, and Treatment of Tuberculosis. Doctor Wright's subject was the Treatment of Bacterial Diseases by the Inoculation of the Corresponding Vaccines, a subject which he is eminently able to discuss, by reason of his long and careful work, particularly relating to typhoid fever and tuberculosis.

Medical Society Meetings in Philadelphia for the Week Ending November 3, 1906.—Monday, October 29th, Society of Normal and Pathological Physiology, University of Pennsylvania. Tuesday, October 30th, Medicolegal Society. Thursday, November 1st, Obsterical Society; Medical Society of the Southern Dispensary; Section Meeting, Franklin Institute; Northwest Branch, Philadelphia County Medical Society. Friday, November 2nd, American Philosophical Society. Saturday, November 3rd, Executive Committee of the Medical Club.

Personal.—A complimentary dinner was given to Dr. H. Genet Taylor at the City Dispensary building, Camden, N. J., on October 10th. Addresses were made by Dr. Joel W. Fithian, Dr. E. L. B. Godfrey, Dr. John R. Stevenson, Dr. Alexander Marcy, Sr., Dr. W. H. Iszard, Dr. Daniel Strock, Dr. Alexander Marcy, Jr., Dr. William J. Chandler, and Dr. C. E. English.

Dr. H. R. Loux has been appointed visiting surgeon to the Philadelphia Hospital, vice Dr. Orville Horwitz, resigned.

Miss Elizabeth Lobb has resigned as assistant superintendent of the Medicochirurgical Hospital to accept the position of superintendent of the Chester (Pa.) Hospital.

The Clinical Society of the Elizabeth, N. J., General Hospital and Dispensary.—The thirteenth annual dinner was given on October 16th, by the retiring president, Dr. Stephen T. Quinn. The guest of the evening was Dr. Britton D. Evans, medical director of the State Hospital for the Insane at Morris Plains. Dr. Evans delivered an address in which he urged physicians to use their influence in the passing by the legislature of necessary laws which should insure a greater regard for the public health on the part of manufacturers of foods, etc. At the business session of the society officers were elected as follows: President, Dr. Stephen J. Keefe; vice-president, Dr. James L. Perkins; secretary, Dr. Russel A. Shirrefs; treasurer, Dr. Frederick H. Pierson.

The First Annual Conference of New Jersey State and Local Boards of Health was to be held in the State House at Trenton on October 19th and 20th. Among the questions to be discussed were the following: Isolation Hospitals for Acute Communicable Diseases; The Use of Abandoned Wells as Receptacles for House Sewage, etc.; The Disinfecting of Clothing, etc.; Reporting of Infectious and Contagious Diseases and the Isolation of Patients so Affected; Unwholesome Milk; The Abatement of Nuisances Injurious to the Public Health; Relations with Adjoining Municipalities; Spitting in Public Places, Conveyances, Upon Sidewalks, etc.; Measures for Preventing the Spread of Infectious Diseases, Not to Include the Closing of Schools, etc., Except in Rare Instances.

"Medicology."—A year or more ago, we noted in these columns the fact that the United States Government had taken proceedings against the Historical Publishing Company, of Philadelphia, requiring them to eliminate a certain phrase in an article in their popular medical book known as "Medicology." Recently one of the Philadelphia newspapers has undertaken to expose the methods of the publishers of "Medicology" in selling their work throughout the country. It was discovered that of the five physicians who are supposed to have written the articles in the book three are dead and the other two cannot be located. It is alleged that the publishers have made sales aggregating over $3,500,000.

The Philadelphia Bureau of Health Statistics.—During the month of September, 1906, in the Division of Medical Inspection, 3,317 inspections were made, exclusive of schools; 365 fumigations were ordered; 17 cases were reported for special diagnosis; 3,887 visits were made to schools; 485 children were excluded from school; 173 cultures were taken; 94 injections of antitoxine given and 1,393 persons vaccinated. In the division of vital statistics 1,850 deaths, 2,933 births, and 1,340 marriages were reported. In the division of milk inspection 6,561 inspections were made of 132,173 quarts of milk, of which 570 quarts were condemned. Nine samples of milk were tested chemically, and 717 samples were examined microscopically. In the division of disinfection 69 fumigations were ordered for scarlet fever, 193 for diphtheria, 83 for typhoid fever, 162 for tuberculosis, and 123 for miscellaneous diseases. Fifteen schools were fumigated. In the bacteriological laboratory 580 cultures were examined for diphtheria bacilli; 416 specimens of blood were examined for the Widal reaction; and 372 specimens of milk and 114 specimens of sputum were examined; 2,251,000 units of antitoxine were supplied and 6 disinfection tests were made. In the chemical laboratory 90 analyses were made.

The Pennsylvania Antivaccination League met in the parlors of the Continental Hotel, Philadelphia, on October 4th. The president of the league, Mr. C. Oscar Beasley, made the opening address, in which he denounced the present compulsory vaccination law. The address, as is usual with such efforts, was filled with inaccurate statements and appealed to the emotions of the people and not to their sober judgment. Among the inaccurate statements contained in the address was the statement that compulsory vaccination was supported by the commercial instincts of the vaccine manufacturers, by the political doctors, and public pensioners, and by private practitioners who gained great revenue from the practice of vaccination. The secretary of the league subsequently introduced a resolution of the same type as the president's address, in which the people of Pennsylvania were urged to use their influence for the repeal of the compulsory vaccination law. This resolution alleged that vaccination was a prime factor in the introduction of smallpox into communities free from the disease, and that the best informed medical opinion was hostile to vaccination. The league states that it has obtained thirty thousand signatures to a petition for the repeal of the compulsory vaccination law. We do not believe that the Antivaccination League will have the least influence on the vaccination law in Pennsylvania; but we think that the amount of publicity given to its vaporings by the daily press is distinctly harmful to the sober consideration of the vaccination law. The best policy is to allow such bodies to have their say without taking the least notice of them.

The Health of Philadelphia.—During the week ending October 13, 1906, the following cases of transmissible diseases were reported to the bureau of health:

	Cases.	Deaths.
Typhoid fever	86	10
Scarlet fever	28	0
Chickenpox	7	0
Diphtheria	89	0
Cerebrospinal meningitis	2	0
Measles	12	0
Whooping cough	13	9
Tuberculosis of the lungs	93	68
Pneumonia	28	26
Erysipelas	1	0
Puerperal fever	1	0
Mumps	2	0
Cancer	23	36

The following deaths were recorded from other transmissible diseases: Dysentery, 3; diarrhœa and enteritis, under two years of age, 26; tuberculosis, other than tuberculosis of the lungs, 11. The total mortality was 493, in an estimated population of 1,469,126, corresponding to an annual death rate of 17.45 in a thousand population. The total infant mortality was 123; under one year of age, 101; from one to two years of age, 22. There were 30 still births, 15 males and 15 females. The temperatures as recorded by the United States Weather Bureau were rather high, reaching a maximum of 73 degrees on the 9th. The total precipitation was 0.14 inch.

BOSTON AND NEW ENGLAND.

Dr. Pierre Janet, of Salpetriere, Paris, who is to give a course of lectures at the Lowell Institute, Boston, on psychotherapeutics, began on October 17th at the Harvard Medical School a series of lectures on hysteria. The address was delivered in Administration Building, where Dr. Janet spoke in English to a large group of special students.

Personal.—On the occasion of the commemoration at the Massachusetts General Hospital, Boston, on October 16th, 1906, of the sixtieth anniversary of the first administration of ether, Dr. John Collins Warren, the grandson of Dr. Warren who performed the first operation upon an etherized patient, severed his connection with the hospital after a service of thirty-five years.

The Cumberland County, Maine, Medical Society.—The annual meeting of this society was held at Portland on Thursday, October 18th, under the presidency of Dr. Stephen H. Weeks. The election of officers, which should have taken place in June, but which was deferred on account of the absence of Dr. Weeks and others from the city, was held and resulted in the choice of the following: President, Dr. S. C. Gordon; vice-president, Dr. Charles O. Hunt; secretary, Dr. Herbert F. Twitchell; treasurer, Dr. Edwin Gehring; member of board of censors for three years, Dr. Stanley P. Warren.

BALTIMORE AND THE SOUTH.

The Fifth District, Georgia, Medical Association.—At a meeting of this association held at Atlanta on Tuesday, October 16th, officers were elected as follows: President, Dr. J. C. Olmsted, of Atlanta; vice-president, Dr. E. B. Block, of Atlanta; secretary and treasurer, Dr. E. W. Ragsdale, of Covington.

The Kentucky Midland Medical Society.—The forty-third quarterly meeting of this society was held at Versailles on Thursday, October 18th. The officers of the society are as follows: President, Dr. W. B. McClure, Lexington; vice-president, Dr. C. W. Kavanaugh, Lawrenceburg; secretary and treasurer, Dr. J. H. Arnold, Versailles. The membership of the society is composed of about seventy-five of the physicians in Central Kentucky.

The Jefferson County (Ky.) Medical Society.—A meeting of this society was held at Louisville on Monday, October 22nd. The programme for the meeting included reports of cases; exhibition of pathological specimens, by Dr. J. S. Chenoweth, and a paper by Dr. I. N. Bloom. The officers of the society are: President, Dr. John J. Moren; vice-president, Dr. Sidney J. Meyers; secretary, Dr. J. Hunter Peak; treasurer, Dr. Edward Speidel.

The Jackson County, Missouri, Medical Society.—The twenty-fifth anniversary of the founding of this society was celebrated at a banquet at the Coates's House, Kansas City, on October 18th. Dr. E. Von Quast, chairman of the banquet committee, reviewed the history of the society. Addresses were made by four charter members—Dr. N. A. Drake, on The Origin of Our Society; Dr. A. A. Freymann, Past and Present; Dr. E. W. Schauffler, In Memoriam, and Dr. John Wilson, Professional Sociability—Then and Now.

The Johns Hopkins Medical Society.—The programme for a meeting of this society, held on Monday evening, October 15th, included the following: Exhibition of Two Cases of Focal Epilepsy, Dr. Thomas; Excision of the Sigmoid in a Case of Volvulus, Dr. Bloodgood; The Paravertebral Triangle (Grocci's Sign) in the Diagnosis of Pleural Effusion, Dr. Thayer and Dr. Fabyan; Sahli's Desmoid Reaction in Gastric Diagnosis, Dr. Boggs. Dr. W. G. MacCullum and Dr. R. I. Cole are president and secretary, respectively, of the society.

CHICAGO AND THE WEST.

The Chicago Neurological Society.—The programme for a meeting of this society, held on Thursday, October 25th, included a paper on Chronic Progressive Chorea, by Dr. A. S. Hamilton, of Minneapolis, and some European experiences related by Dr. Hugh T. Patrick, of Chicago.

The Colorado State Medical Society.—At the annual meeting of this society, held at Denver on October 2nd to 4th, the election of officers resulted as follows: President, Dr. H. R. Hull, of Grand Junction; vice-presidents, Dr. Herbert P. Whitney, of Denver; Dr. E. R. Neeper, of Colorado Springs, and Dr. Mary E. Phelps, of Canon City; secretary, Dr. Melville Black, of Denver; treasurer, Dr. S. E. Solly, of Colorado Springs. The board of councilors consists of Dr. J. N. Hall, Denver; Dr. Hubert Work, Pueblo; Dr. C. F. Gardiner, Colorado Springs; Dr. S. D. Hopkins, Denver; Dr. J. T. Melvin, Saguache; Dr. W. W. Reed, Boulder; Dr. Frank Finney, La Junta, and Dr. E. T. Boyd, Leadville.

The Alumni Association of Miami Medical College.—An association with this title was organized in Cincinnati at a meeting held at the office of Dr. W. E. Murphy on October 1st. The following officers were elected: President, Dr. W. H. Campbell; vice-presidents, Dr. W. E. Murphy, Dr. Francis J. Iliff, Dr. C. B. Conwell, and Dr. G. K. Dennis; treasurer, Dr. A. J. Markley; secretary, Dr. G. S. Mytinger. It was decided that meetings should be held on the last Friday of each month, and that at each meeting a paper bearing upon some medical topic be read and discussed, and that members shall make reports of cases and exhibit specimens. The next meeting was to be held at Dr. D. T. Vail's office the last Friday in October.

Statement of Mortality in Chicago for the Week Ending October 13th, 1906, compared with the preceding week and with the corresponding week of 1905. Death rates computed on United States Census Bureau's figures of mid-year population—2,049,185 for 1906, 1,990,750 for 1905:

	Oct. 13, 1906.	Oct. 6, 1906.	Oct. 14, 1905.
Total deaths, all causes	528	566	477
Annual death rate in 1,000	13.43	14.40	12.49
Sexes—			
Males	298	321	252
Females	230	245	225
Ages—			
Under 1 year of age	110	142	104
Between 1 and 5 years of age	51	63	51
Between 5 and 20 years of age	33	44	34
Between 20 and 60 years of age	229	223	187
Over 60 years of age	105	94	101
Important causes of death—			
Apoplexy	13	8	13
Bright's disease	36	27	28
Bronchitis	7	11	15
Consumption	74	55	53
Cancer	24	26	24
Convulsions	10	7	14
Diphtheria	11	11	7
Heart diseases	39	61	38
Influenza	1	0	0
Intestinal diseases, acute	62	103	69
Measles	1	1	1
Nervous diseases	23	18	21
Pneumonia	48	51	38
Scarlet fever	3	3	1
Suicide	15	6	10
Typhoid fever	9	8	13
Violence (other than suicide)	31	34	37
Whooping cough	6	2	5
All other causes	115	134	90

GENERAL.

The Alvarenga Prize of the College of Physicians of Philadelphia.—The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about one hundred and eighty dollars, will be made on July 14, 1907, provided that an essay deemed by the Committee of Award to be worthy of the prize shall have been offered. Essays intended for competition may be upon any subject in medicine, but cannot have been published. They must be typewritten, and must be received by the secretary of the college on or before May 1, 1907. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the college; other essays will be returned upon application within three months after the award. Thomas R. Neilson, M. D., Secretary.

Pith of Current Literature.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

October 11, 1906.

1. Acute and Chronic Indigestion, By JOHN B. DEAVER.
2. Observations in One Thousand Adenoid Operations, By FRANK B. SPRAGUE.
3. Killian's Operations, By HARRIS P. MOSHER.
4. Hysteria from the Point of View of Dissociated Personality (*Concluded*), By MORTON PRINCE.

2. Observations in One Thousand Adenoid Operations.—Sprague expresses his opinion that we do not have exact data of the ætiology of adenoids; it is an excessive activity of the lymphoid tissue of the pharynx at first normal, stimulated by constant irritation from particles of dust or secretions with mild infection; the rapidity and development of the growth being governed by the atmospheric, climatic, and constitutional conditions, and of hygiene. The author describes the subjective symptoms: Repeated colds, difficult breathing, mouth breathing, snoring, cough, croup, hoarseness, tonsillitis, asthma, thick speech, discharge from the nose, periodical earache, with spells of deafness, and discharge from the ears, nervousness, etc. Of the objective symptoms he speaks of the face, mouth, nose, ears, neck, chest, throat, etc. The diagnosis is easy in typical cases which show the facial expression and the effects of mouth breathing. In his operations the author is best satisfied with ether, under which anæsthetic the patient is turned on his right side, and the mouth held open with the Jansen gag. The method of operation is then described. Immediately after operation as a safeguard an application of tannic glycerin is made to the denuded parts of the pharynx and fauces. The after treatment is also fully given, and the complications which may arise, such as hæmorrhages, infection, earaches, etc. Recurrence is exceedingly rare, and it is a question if it happens at all, and is not only a left over condition from former operations. Of the results the writer says that the effect of the operation on the general health is, in nearly every case, very pronounced. The whole appearance of the child changes; the nervous, irritable, peevish disposition soon fades away, and the child seems like a new being.

3. Killian's Operations.—Mosher states that Killian's operation for chronic suppuration in the frontal sinus and in the ethmoidal cells is the most radical operation which we have. It has the advantages of medical measures in that it offers a greater chance of a cure, but also the disadvantages, in that it can cause much disfigurement. As an extensive operation it can be only used in selected cases, and in such cases it is the only method of choice.

4. Hysteria from the Point of View of Dissociated Personality.—Prince reviews only clinically a type of hysteria which so often follows traumatism and emotional shocks, and is then known as a form of traumatic neurosis or psychosis, but also follows other conditions. As such, hysteria is a manifestation of disintegration, and the neurasthenic state, one of the stigmata of hysteria, is pathologically a type of dissociation of personality. Conversely, disintegrated personality is no bizarre phenomenon, but in its mild forms an almost every day clinical affair, though ordinarily, in consequence of the absence of amnesia, it passes unrecognized.

October 18, 1906.

1. A Small Fibroma of the Ileum Resulting in Obstruction of the Bowel, with a Consideration of Various Forms of Benign Intestinal Tumors, By JOHN W. DEWIS.
2. On the Bier Treatment of Infections and Septic Wounds of the Extremities, By E. A. CODMAN.
3. A Deceiving Case of Head Injury, By BENJAMIN T. BURLEY.
4. A Case of Angina Sine Dolore, By ALBERT N. BLODGETT.

1. A Small Fibroma of the Ileum Resulting in Obstruction of the Bowel, with a Consideration of Various Forms of Benign Intestinal Tumors.—Dewis says that benign tumors of the intestinal tract are probably less uncommon than generally supposed, and disturbances of the functions in this region due to the presence of intraintestinal tumors are usually referred to other causes. To illustrate the course such cases may follow and the difficulty of determining the cause of the symptoms, and also because of the rarity of fibromata of the bowel, he reports a case. From the existing literature he collects two hundred and nineteen cases in the intestinal tract, three being angiomata, five fibromata, forty myomata, forty-four lipomata, and one hundred and twenty-seven adenomata. He observes that benign intraintestinal tumors occur with sufficient frequency to require consideration in all obscure derangements of the intestinal functions, and particularly if accompanied by a history of intractable constipation, attacks of colic, or vomiting, not the result of gastric affections. In the majority of cases, however, and except where the tumor may be felt, it would be impossible to diagnosticate intestinal disturbances due to these neoplasms from other possible causes.

2. On the Bier Treatment of Infections and Septic Wounds of the Extremities.—Codman has made some experiments with the Bier treatment on infections and septic wounds of the extremities and, although he has been very reluctant to admit the value of this treatment, and although he began it with a strong prejudice against it, he does now indorse it, as he believes it to be safer in the hands of the inexperienced than an attempt at a radical operation, and found it to be a valuable adjunct to the "medical incision," and *vice versa*. On the whole, he states that cases of frank suppurations of the staphylococcus type have done the best, while the streptococcus or erysipeloid type has been less markedly affected.

3. A Deceiving Case of Head Injury.—Burley reports an interesting case. A conductor of a trolley car, while leaning back from his car to adjust a trolley pole, lost his balance and fell to the street. He apparently struck on his head, but was only slightly dazed. He reported the accident correctly to the inspector, traveled with his car a distance and then walked a short way to the office of the railway surgeon, who examined him and finding nothing wrong with his head, concluded that he was not seriously hurt, and sent him home in an automobile. The patient lay down on a couch, where he fell asleep. But as he could not be aroused and there appeared convulsive movements of body and limbs, with heavy breathing the surgeon was called in, who then ordered his removal to a hospital. The examination of the head failed to disclose any bruise or sign of fracture of the skull, but there were absolute signs of extreme cerebral pressure: Deep coma, every muscle in a state of tonic spasm, occasionally varied with clonic movements, especially in the arms and hands, of equal strength and frequency on both sides; the respiration was with extreme stertor and would cease entirely for several seconds. The absence of external marks of injury and the equality of the signs on both sides of the body presented unusual difficulty in the way of localization. Banking, however, on the greater degree of the nerve paralysis on the right as being due from hæmorrhage to divert pressure of a lesion of that side, and realizing that further observation and delay would cost the patient his life, an operation was decided upon. A small trepine opening was made through the posterior squamous portion of temporal bone and from this

a rongeur cut was made upward, forward, and then downward, forming a small horseshoe. When the temporal bone was dissected back a clean crack could be seen extending vertically through the anterior portion of the parietal and temporal bones in the region of the middle meningeal artery, from which blood had oozed. The clotted mass of blood was over an inch thick at the centre, and spread out over the whole frontal and the anterior temporal and parietal regions of the right hemisphere. The hæmorrhage was fairly readily controlled by packing gauze. The patient had felt nothing of the operation, which had been done without an anæsthetic, until the last two skin sutures were applied, which provoked a low muffled groan. After making an uninterrupted recovery the patient left the hospital eighteen days after the operation in excellent condition.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

October 20, 1906.

1. The Simultaneous Occurrence of Two Nonrelated Tumors in a Mouse, By E. E. TYZZER.
2. The Use of Sodium Citrate as a Modifier of Cow's Milk. From a Chemical and Physical Point of View, By JOSEPH W. ENGLAND.
3. Publicity as a Factor in Venereal Prophylaxis, By PRINCE A. MORROW.
4. The Duty of the Medical Profession to the Public in the Matter of Venereal Diseases and How to Discharge It. By W. J. HERDMAN.
5. The Duty of the State Toward Venereal Diseases, By HENRY D. HOLTON.
6. The War Against Venereal Diseases in France, By THEODORE TUFFIER.
7. What Shall We Teach the Public Regarding Venereal Diseases? By ALBERT E. CARRIER.
8. What Shall We Teach the Public Regarding Veneral Diseases? By GEORGE WHITESIDE.
9. What Shall We Teach the Public Regarding Veneral Diseases? By BRANSFORD LEWIS.
10. The Chemistry of the Organic Silver Compounds, By W. A. PUCKNER.
11. The Influence of X Rays in the Treatment of Leucæmia and Hodgkin's Disease, with a Report of Two Cases. By AUGUSTUS H. ROTH.
12. Polycythæmia, By WILLIAM ENGELBACH and ORVILLE HARRY BROWN.
13. A Study of Acute Leptomeningitis (*Streptococcus Pyogenes*), By E. E. SOUTHARD and R. R. STRATTON.
14. The Early Diagnosis of Abdominal Hæmorrhage, By H. S. HOLLENBECK.
15. Experiments on Venous Blood Pressure and Its Relations to Arterial Pressure in Man, By HENRY SEWALL.
16. The Treatment of the Intracranial Complications of Middle Ear Suppuration, By EDWARD BRADFORD DENCH.
17. Tuberculosis of the Ear and Mastoid, By E. A. CROCKETT.
18. Pleuritic Exudates in Children, By MELINDA KNAPHEIDE-GERMANN.

2. The Use of Sodium Citrate as a Modifier to Cow's Milk.—England observes that sodium citrate, which is a neutral salt, has no decomposing action on calcium casein in the cold, but that it does not exert an important physical influence on the casein of milk; that when the citrated milk is brought in contact with the gastric juice, the sodium citrate is decomposed into sodium chloride which has important physical, chemical, and therapeutical properties in the digestion of the proteids of cow's milk, more important, probably, than has been hitherto believed. Whether the free citric acid formed has any more important therapeutical value than the hydrochloric acid of the gastric juice would seem to be very doubtful.

3 to 9. Venereal Disease and the Teaching of the Public Regarding It.—Publicity, education of the public, of the children, with the help of public institutions, if necessary of the States, is the answer of the writers to the question, how to combat the spread of venereal diseases. Morrow voices his opinion that the concealment of facts regarding venereal diseases is a help to perpetrate the evil. Publicity is not only desirable, but absolutely indispensable to the successful working of any scheme for the prophylaxis of the disease. Since the newspaper press, the most powerful of all agencies of publicity, is not available, at least for the present, we must have recourse to other agencies of popular enlightment—pamphlets, tracts, conferences, lectures, etc. A journal of popular medicine, devoted to the study and prevention of all communicable diseases should be founded; there is such a project which, the author hopes, will be realized.—Herdman informs us that the State Medical Society of Michigan has adopted a campaign against venereal disease, a year ago. Under its auspices a standing committee of twenty, many members being chosen from the laity, has been formed with subcommittees on publication, education, and legal enactment.—Holton says that before we seek aid from the State there must be created a public sentiment which will sustain action by authority, together with a strong demand for State intervention. This can only be brought about by an educational movement, which should begin in the house, and continue in high and preparatory schools and colleges.—Tuffier describes the system in use in France to combat venereal disease. It is composed of two separate branches, the public and medical service. Government surveillance is exercised in reference to houses of prostitution as well as to the so called free prostitutes who are registered at police headquarters. They all are obliged to be examined once in every one or two weeks. There is propaganda of educating the public through lectures and pamphlets.—Carrier, Whiteside, and Lewis treat the same subject: What Shall we Teach the Public Regarding Venereal Diseases. They come to the same conclusion: Tell the truth, the whole truth, and nothing but the truth. The instruction should be given at home to the children and carried through all ages and both sexes, girls as well as boys.

12. Polycythæmia.—Engelbach and Brown report such a case, the thirty-fifth so far recorded. On account of the variety of pathological findings no definite ætiology has so far been established. The general course of the disease is progressively worse, with remissions of short duration, the average is from six to eight years. The positive diagnosis is made on the findings of chronic cyanosis, enlargement of the spleen, and polycythæmia without an anatomical explanatory cause. Other conditions causing chronic cyanosis must be excluded, such as abnormalities of development of the heart and aorta, organic heart disease, adhesive pericarditis, aneurysm, emphysema, other enlargements of the spleen which can be easily differentiated by the blood findings, displacement and deformities of the liver, etc. The prognosis is absolutely bad as to cure, as the treatment has been very unsatisfactory.

14. The Early Diagnosis of Abdominal Hæmorrhage.—Hollenbeck describes a trocar which he uses for early diagnosis of abdominal hæmorrhage. It is about three inches long, the needle point projecting over the cannula. The instrument can be inserted into the abdominal wall, and by careful manipulation forced through it and the parietal peritonæum, the needle can be withdrawn and the aspirator attached.

15. Venous Blood Pressure in Man.—Sewall, from experimental work and clinical observations, concludes that venous blood pressure may be raised either by increasing the inflow into or by decreasing the outflow from the veins. The former results may be obtained by local exercise of the member examined, the latter by elevating one arm while the venous pressure is measured in the hand of the other. Muscular exercise, either local or general, increases venous blood pressure and

presumably pressure within the right side of the heart. Intrinsic contractility of the superficial veins plays an important part in their physiology. It is probably through this that the valves are brought into action. The natural external stimuli of the venous contraction are cold and light mechanical irritation. Venous pressure is lowered by cold, which contracts the arterioles, and is raised by heat, which dilates them. The respiratory movements of the veins correspond with the respiratory changes in arterial blood pressure. Transmission of cardiac pulsation into the veins is of frequent occurrence.

MEDICAL RECORD.

October 20, 1906.

1. Angina Pectoris. Its Mechanism and Treatment, By FRANCIS HARE.
2. Diagnosis and Treatment of the Acute Infections of the Gallbladder, By LUCIUS W. HOTCHKISS.
3. Illustrative Cases of Prostatic Carcinoma, By J. BENTLEY SQUIER.
4. Koplik Spots: Their Relation and Interest to Laryngologists, By H. GLOVER LANGWORTHY.
5. The Medical Museum, By D. BRYSON DELAVAN.
6. Dried Tetanus Antitoxine as a Dressing for Wounds, By J. J. KINYOUN.
7. A Case of Intestinal Obstruction in a Child Due to Tuberculous Peritonitis Following Bronchopneumonia, By HENRY HUBBARD PELTON.
8. Disinfection of Rooms by Formaldehyde. Comparative Bactericidal Value of Various Methods, By HENRY A. HIGLEY.
9. A Case of Perforative Appendicitis Caused by a Foreign Body, By FRANK H. JACKSON.

1. Angina Pectoris: Its Mechanism and Treatment.—Hare frames the following hypothesis: The pain of angina depends upon vascular distention in the mediastinum, which is the result of a more or less localized vasodilatation and of a more or less generalized peripheral vasoconstriction. It would seem that the angina is not due to the organic lesions any more than is asthma due to emphysema, or migraine to atheroma of cranial vessels. The connection between the organic lesions and angina should then be ascribed to the chronic peripheral vasoconstriction, which constitutes the earliest stages of many forms of chronic organic disease of the heart and vessels. The treatment is twofold: 1. The treatment of the paroxysm consists of inhalation of amyl nitrite, as the most prompt and reliable means of relief in most cases. Where this fails morphine, hypodermically, or chloroform inhalation, will usually succeed. But, in the absence of these drugs, the extensive application of heat to the surface, combined with hot drinks, will generally afford effectual relief. 2. Preventive treatment resolves itself into the prevention of exaggerated peripheral vasoconstriction, continuous or recurrent. Purin free diet, cutting down of the intake of carbohydrates, especially the saccharine carbohydrates, and the fats is advocated. But the author advocates intranasal procedure as used in asthma. Empirical is also the use of potassium iodide in large doses.

2. Diagnosis and Treatment of the Acute Infections of the Gallbladder.—Hotchkiss says that the symptoms of an acute attack of cholecystitis are similar to those of an ordinary attack of biliary colic, except that the gallbladder is enlarged, tender, and frequently palpable. Jaundice is never present in these cases unless the inflammation extends down the mucosa of the cystic and involves that of the common duct. The varieties of acute inflammation of the gallbladder are (1) the catarrhal, (2) the suppurative, and (3) the phlegmonous or gangrenous. Any of these forms may arise independently of gallstones, but in most cases it is the damage done by a calculus that opens the path to infection either from the contiguous gut or through the blood stream. The attack can be mistaken for appendicitis. Early operations should be advised before perfectly preventable complications exist. Satisfactory results should be expected as in cases of appendicitis.

3. Illustrative Cases of Prostatic Carcinoma.—Squier remarks that prostatic cancer presents itself at the two extremes of life, namely, in early childhood or in advanced years. About four fifths of all malignant growths of the prostate are carcinomatous. There is a diversity of opinion as to the relative frequency of the growth being primary or secondary in the prostate. Not infrequently tumors are described as primary, when the origin is really from the epithelium of the bladder, the growth invading the gland secondarily. He believes it is more often primary than is ordinarily supposed, and develops either in the mucosa of the prostatic urethra, diffusely through the entire gland, or may form a discreet nodule in one portion of it. The process may be of the medullary type, or show the structure of adenocarcinoma. In regard to extension to other organs, carcinoma, which is primary in prostatic origin, is more liable to invade the pelvic lymphatic system than to extend directly to the bladder. If the growth invades the bladder it is along the ejaculatory ducts into the posterior wall. Extension into the pelvic tissues and viscera, with final invasion of the bones of the pelvis, is met with only in late cases. Exceptionally, the entire skeleton may be involved even when the primary growth is relatively small. Secondary carcinoma is usually due to an extension of a renal, vesical, or genital lesion. Early diagnosis and operation are imperative if lasting results are to be accomplished.

6. Dried Tetanus Antitoxine as a Dressing for Wounds.—Kinyoun states that the results which have followed the application of dried serum to the wound show very conclusively that it possesses qualities other than its specific body, the antitoxine. This must be of the nature of an immune body, which, when brought in conjunction with the serum or cells in the wound, becomes bactericidal. In such immune serum there appears to be a body, an amboceptor, which is entirely separate and distinct from the specific immune body which is responsible for the germicidal action. This might be termed, for want of a better name, the common immune body. It may be normally present in the blood, but it increases in amount under treatment, *pari passu* with the increase in the number of the leucocytes. The dried serum powder seems to have some advantages over the serum, as it dissolves rather slowly and therefore is not so apt to be washed away by exudates.

8. Disinfection of Rooms by Formaldehyde.—Higley has experimented with formaldehyde for disinfection of rooms. He used: 1. Trillat autoclave. 2. Heating formalin in an open vessel over a powerful flame. 3. Paraform tablets. 4. Potassium permanganate method, as proposed by Evans and Russell. 5. Lime method, as proposed by H. V. Walker. By far the best comparative bactericidal result were obtained by the lime method.

BRITISH MEDICAL JOURNAL.

October 6, 1906.

(Seventy-Fourth Annual Meeting of the British Medical Association.

Section of Dermatology.

1. The Place of Dermatology in the Medical Curriculum, By N. WALKER.
2. The Influence of Light Hunger in the Production of Psoriasis. By J. N. HYDE.
3. Evidence of the Existence of an Autotoxic Factor in the Production of Bullous Disease, By J. C. JOHNSTON.
4. Demonstration by Lantern Slides, By J. A. FORDYCE.
5. Errors in the Treatment of Cutaneous Cancer, By A. R. ROBINSON.
6. The Evolution of Intraprimary Lesions of Syphilis: Successive Chancres and Prodromal Syphilides, By R. W. TAYLOR.

7. A Case of Pityriasis Rubra Followed by Gangrene of the Left Foot and the Distal Half of the Right Hand, By T. C. GILCHRIST.
8. Dermatitis Vegetans, By W. T. CORLETT.
9. On the Wrong and Right Use of Milk in Certain Diseases of the Skin, By L. D. BULKLEY.
10. Observations on the Ætiology and Treatment of Eczema, By G. CHAMBERS.
11. The Blood in Relation to Skin Diseases, By T. HOUSTON and J. C. RANKIN.

Section of State Medicine.

12. The International Cooperation in the Inspection of Emigrants and Immigrants, By P. H. BRYCE.
13. The State Control of Health, By J. G. DRENNAN.
14. Legislation Regarding Food Preservatives, By A. MCGILL.
15. National Supervision and Standardization of Food, By H. L. E. JOHNSON.
16. Sailors' Food, By W. SPOONER.

2. **Psoriasis.**—Hyde advances the proposition that psoriasis in man is an expression of resentment on the part of the skin against the partial or total exclusion of light from its artificially covered surfaces. In support of this view he cites the following facts: 1. Psoriasis is a disease that never affects the lower animals, whether these be feral or in a state of domestication, for the reason that the integument of such animals is very rarely screened from the light by artificial covering. 2. The number of persons whose skin is thus abnormally sensitive to the shutting off of light is relatively small. Just as in the case of cancer of the skin, a certain special sensitiveness of the skin is required. 3. Psoriasis is most prevalent and most severe at those seasons of the year and in those countries in which sunlight is least abundant, and heavier, thicker garments are worn. The coarseness of the woolen garments worn in winter is responsible for much of the aggravation of symptoms. The disease is confined almost exclusively to white races. It is very rare in Africa. 4. The localization of the disease in the integument is largely determined in the regions of exclusion of light from protected portions of the body. 5. The most effective treatment of the disease is by illumination of the regions chiefly involved. For the last ten years the writer has been treating psoriasis by exposure of the skin to sunlight, with very satisfactory results, considering all the difficulties met with. He sums up his theory as follows: There is good reason to believe that the phototaxis of the skin, when it is normally active, exerts an inhibitory influence upon the interplay of the elements of which the skin, or, at least, its more superficial portions is composed. Under the influence of light the molecules of matter swing in proper rhythm. If the light be wholly or partially withheld by covering the body with clothing, as a rule, no marked perversion occurs. But in the few, when such inhibition is wholly or partially prevented by the interposition of a light screen, the skin rebels.

3. **Bullous Disease Due to Autotoxæmia.**—Johnston, under the term bullous disease, includes four affections —pemphigus, dermatitis herpetiformis, pompholyx, and epidermolysis bullosa. Bullous eruptions due to accident or infection are excluded. From his study of these four diseases he concludes that they are due to an autointoxication. There is clinical evidence of nonbacterial systemic poisoning, eosinophilia, indicanuria, and good results following the adoption of eliminative treatment. During the course of proteid metabolism there is probably elaborated, possibly among many other toxic bodies, one with an action on vessel walls as specific as that of snake venom or the nettle. It operates, probably, everywhere in the body as well as in the papillary layer of the skin. The skin lesions are local expressions of a general disturbance, and the bullous group is only a striking variation from the other poisonings, having their origin in perversion of the body processes.

6. **Skin Lesions of Syphilis.**—Taylor's studies have convinced him that syphilis is systemic from the very date of its inception. His conclusions are as follows: 1. That by the autoinoculation of the secretion of the hard chancre in the primary period a proliferative lesion resembling a secondary papule rather than a true chancre is produced. 2. In many cases a syphilitic is infected many times following a first infection, and a succession of primary lesions is produced. 3. In some cases infection of one or more portions of the body, usually extragenital, is produced by a second syphilitic individual or donor a short time after the development of the initial lesion. 4. Infection of a patient by a second syphilitic a short time after his or her virgin or primary infection occurs in exceptional instances. 5. Successive syphilitic lesions run a regular course and do not usually portend malignancy. 6. The view that syphilitic infection is for a time local, and that there is an immunity to further early specific neoplasms in contiguous parts, is based on a false conception of the course of syphilitic infection. The poison of syphilis acts promptly, early, and progressively, and is a potential factor until its culmination is achieved in the developed systemic secondary stage. 7. The claimed immunization in primary syphilis is a chimera and founded on false pathology. 8. Though in general syphilis pursues a tolerably orderly course and its general exanthematic manifestations appear at the classical secondary climax, sparse precocious exanthemata may not infrequently be observed.

9. **Milk in Skin Diseases.**—Bulkley calls attention to the fact that milk, as generally used, aggravates the various skin diseases, and disturbs the action of the liver. He claims that if it be given at the right moment, however, it passes directly into the circulation without undergoing the process of digestion, and is then of the greatest benefit and assistance. Milk is alkaline. In order that it may be directly absorbed, therefore, it must be given during the "alkaline tide" of the stomach, when there is no acid gastric juice present, which is usually most marked about an hour before meals.

LANCET.

October 6, 1906.

1. The Scientific Investigation of the Psychical Faculties or Processes in the Higher Animals (Huxley Lecture), By I. P. PAWLOW.
2. The General Medical Council: Its Powers and Its Work, By D. MACALISTER.
3. The Theory and Practice of Medical Education, By N. H. ALCOCK.
4. Abstracts of Introductory Addresses Delivered at Medical Schools.
5. The Injection of Antitoxine in Diphtheria by the Intravenous Method, By A. D. BISSON.
6. Notes on Purin Free Diets, By W. A. POTTS.

5. **Intravenous Injection of Diphtheria Antitoxine.**—Bisson reports on two hundred cases of diphtheria treated by the intravenous injection of antitoxine. Intravenous injection may be done by incision or by direct puncture. Incision. The usual site is the bend of the elbow. The skin is first thoroughly disinfected, and the arm is then placed in a sterilized towel and grasped by the nurse just below the axilla so as to make the veins more prominent. The antitoxine is poured into a sterilized glass and heated to blood heat by placing the glass in warm water. The patient is anæsthetized with either ethyl chloride or chloroform; an incision is made over the median cephalic vein which is thoroughly cleared; the syringe having been filled with antitoxine, the coat of the vein is picked up with toothed forceps, and the needle inserted close to the end of the forceps in a direction parallel with the axis of the vein. After the syringe has been carefully adjusted and slowly emptied, the incision is closed with one stitch

and a dressing applied. Direct Puncture. More skill is required, especially in young and fat children. No anæsthetic or instruments are required. If the elbow veins are invisible the external jugular may be chosen. The nurse holds the patient's arm fully extended with one hand just below the axilla and the other on the wrist, thus making the veins stand out. The arm must be kept absolutely still during the whole of the operation, in order to avoid puncturing the vein twice or allowing the needle to slip out of the vein. If the serum is escaping into the subcutaneous tissues, the injection should be stopped and another vein tried, or the serum be given subcutaneously. A sharp pointed, thin needle is thrust straight into the vein in a direction parallel with its long axis. If the needle has penetrated there will be a free flow of blood; if only a few drops come away, the needle should be slightly withdrawn and pushed in a little farther. The advantages are that no anæsthetic is ever required; no wound is made; it is more rapid; and there are no after effects of the operation. The only disadvantage is that it cannot be used in every case, and requires a little more practice. The writer divides the cases as follows: A. Pharyngeal cases. 1. Mild. There were ninety patients, and all recovered. 2. Severe. Here the membrane covered the tonsils, the pillars of the fauces, and the uvula. Thirty such patients were injected, three died, death was due to paralysis. The total doses of antitoxine varied between 20,000 and 70,000 units. 3. Very severe. In these patients the posterior wall of the pharynx was also involved. Thirty-one patients were injected, sixteen of which died. Death was due in all to cardiac paralysis. B. Laryngeal cases. 1. Mild. All of the three patients injected recovered, neither intubation or tracheotomy being necessary. 2. Severe cases. Intubation was performed on all of the ten patients injected, and all recovered. Six of the patients were permanently extubated on the third day. 3. Very severe cases. In the five patients in this group tracheotomy was either done on admission or following intubation which failed to relieve. There was one death due to bronchopneumonia. C. Pharyngolaryngeal cases. 1. Mild. There were four patients, none of which required operation, all recovering. 2. Severe. All of the eight patients in this group had to be intubated on admission, and two died, one from bronchopneumonia and one from heart failure. 3. Very severe. All of the three patients had to have tracheotomy performed; two died of cardiac failure and bronchopneumonia, respectively. D. Hæmorrhagic cases of a grave type. The development of subcutaneous ecchymoses and hæmorrhages from the mucous membranes is practically a fatal sign in diphtheria. There were seven such patients seen and all died. E. Mixed cases. These were admitted with scarlet fever and diphtheria. There were nine patients with two deaths, due to bronchopneumonia and cardiac paralysis.

LA PRESSE MEDICALE.

September 26, 1906.

1. Twin Producing Ova, By Cyrille Jeannin.
2. Injections of Isotonic Salt Water (Plasma of Quinton) in Hæmophilia of the Newly Born, By Pelissard and Benhamou.
3. Treatment of Acute Purulent Conjunctivitis, By Gaillaud.
4. Thymus and Calcification of Bone, By R. Romme.

1. Twin Producing Ova.—Jeannin divides twin pregnancy into two forms, biovarian and monovarian. The existence of biovarian pregnancy has been proved by the presence of a true corpus luteum in each ovary, as found in certain laparotomies and autopsies, and explains the occurrence of twin pregnancy in cases of double uterus. The existence of the monovarian type has been proved by the appearance of twin pregnancy in a woman from whom one ovary had previously been removed. Two Graafian follicles in the same ovary may mature together and each furnish an ovule. In this case, as in biovarian twin pregnancy, there are two distinct ova, two placentæ are developed, and each embryo is enveloped in three membranes, amnion, chorion, and decidua. In very rare cases this monovarian, bifollicular condition results in a coincident intrauterine and extrauterine pregnancy. The two germs may come from the same Graafian follicle, separated by the ovisac, and this condition may be biovular or uniovular. The uniovular may be biamniotic or monoamniotic.

3. Acute Purulent Conjunctivitis.—Gaillaud recommends active treatment with solutions of silver nitrate until the inflammation has been brought under control and then the substitution of a ten per cent. solution of protargol.

September 29, 1906.

1. Applied Physiology. General Ideas About the Antibodies, By L. Hallion.
2. Tuberculosis and the Thyreoid Gland, By Morin.

1. Antibodies.—Hallion gives a very fair account of what is now known of the antibodies, which are substances developed in the organism by the reaction against certain other substances. It is supposed that it is through the antibodies that the organism secures immunity from a disease from which it has suffered, from smallpox as the result of vaccination, or from certain other diseases as the result of the use of certain sera.

2. Tuberculosis and the Thyreoid Gland.—Morin calls attention to the fact that while the thyreoid body is swollen in the acute infectious diseases it is atrophied in tuberculosis, and he believes that the atrophy of the gland establishes a condition in which the power of resistance on the part of the organism toward tuberculous disease is diminished. He then mentions various preparations which contain iodide that have been useful in the treatment of tuberculous affections.

LA SEMAINE MEDICALE.

September 26, 1906.

Leucæmia and Radiotherapy, By Ch. Aubertin.

Leucæmia and Radiotherapy.—Aubertin speaks very confidently of the excellent results to be secured in leucæmia by the x ray treatment, and gives full credit to the American physicians for the first observation of the influence exercised by the x rays on this disease.

BERLINER KLINISCHE WOCHENSCHRIFT.

September 17, 1906.

1. Three Cases of Traumatic Tetanus Treated with Serum. By J. Kentzler.
2. The Value of the Method of Complement Deviations in Bacteriological Diagnosis, By C. Moreschi.
3. Nystagmus Toxicus, By Theodor Weyl.
4. Pathology and Treatment of Biliary Calculi, By L. v. Aldor.
5. Treatment of Gonorrhœa with Arbovin, By K. Ganz.
6. Congenital Myxœdema and the Development of the Skeleton in the Same (*Concluded*), By P. Argutinsky.
7. The Climate and Winter Resorts by the North Sea, By Wohlberg.

1. Traumatic Tetanus.—Kentzler reports three cases of traumatic tetanus successfully treated, one with Tizzoni's serum, the other two with Behring's. No local reaction was caused by the injections, but in two cases a cutaneous eruption was produced. In none of the cases was the first injection followed by a noticeable improvement, but after repeated administrations of the serum the improvement progressed rapidly. The author presents collated statistics which go to show that, although such a percentage of success cannot always be expected the prognosis in this disease is much better when the serum is used than when it is not. No particular after effects have been noticed.

3. **Nystagmus Toxicus.**—Weyl reports two cases in which he obtained nystagmus in rabbits by poisoning with carbolic acid in the course of some experiments.

4. **Pathology and Treatment of Biliary Calculi.**—Von Aldor, of Carlsbad, discusses cholecystitis and cholelithiasis, and because of the dependence of the latter on the former advocates the regimen of Carlsbad and the cholagogue action of its waters in the treatment of this disease.

6. **Congenital Myxœdema and the Development of the Skeleton.**—Argutinsky concludes that in congenital myxœdema the portions of the skeleton which suffer the least arrest of development are those in which the most energetic growth of bone takes place normally, and that those parts suffer most in which the energy of development is normally least marked.

September 24, 1906.

1. The Present State of Our Knowledge Regarding Epidemic Cerebrospinal Meninigitis, By M. WESTENHOEFFER.
2. Common Renal Hæmorrhages, By CASPER.
3. The Healing of Postoperative Fistulæ of the Abdomen by Means of Vaccine Treatment According to Wright's Principle, By E. M. WEINSTEIN.
4. Clinical and Experimental Studies Regarding Gastroptosis, By E. ROSENBERG.
5. The Conception of Neurasthenia, By THEODOR DUNIN.
6. The Climate and Winter Resorts by the North Sea (*Concluded*), By WOHLBERG.

2. **Renal Hæmorrhages.**—Casper reports four cases of very severe renal hæmorrhage in which the kidney was exposed by operation and in three removed. A piece was removed from the remaining one for examination, the patient recovered and had no further trouble. Two were cases of chronic diffuse bilateral nephritis which had existed for a long time without symptoms and presented no casts, no excretion of albumin, no œdema, and no circulatory disturbances. In the third case the kidney was found to be œdematous, to have patches of necrosis of the epithelium and to contain here and there blood in the canaliculi, but the epithelium of the canaliculi was preserved throughout, the nuclei stained well and the glomeruli were unchanged. In the fourth case, in which nephrotomy was performed, nothing pathological could be found in the kidney. No cause to account for the hæmorrhages was found in either the third or the fourth cases.

3. **Healing of Postoperative Fistulæ.**—Weinstein reports four cases in which he has successfully employed this method. The bacteriological examination revealed in the excretion from the fistulæ streptococci alone in three and mingled with the bacillus coli in the fourth. Cultures and vaccine were prepared from these, and the first three cases were cured after repeated injections, but the fourth continued to discharge fæcal matter.

4. **Gastroptosis.**—Rosenberg gives as the practical result of his investigations that atony is present in the majority of cases and that the old theories in regard to the conditions of motility in ptosis of the stomach were correct.

MUENCHENER MEDIZINISCHE WOCHENSCHRIFT

September 25, 1906.

1. Isolated Apraxial Agraphia, By HEILBRONNER.
2. Pernicious Anæmia and Leucæmia, By KELLING.
3. Spontaneous and Postoperative Implantation of Tumors, By STICKER.
4. Transplantation of Human Ovaries, By CRAMER.
5. Chloroma of the Skull, a Typical Clinical Picture. By PFEIFFER.
6. The Action of the Mercury Quart Glass Lamp, By SCHREIBER and GERMAN.
7. The Early and Prophylactic Action of Stasis Hyperæmia in Infected Wounds (*Concluded*). By JOSEPH.
8. Indications for the Choice of Mineral Waters in Chronic Diseases and Disturbances of Metabolism (*Concluded*), By FLEINER.
9. The Opening of the Institute for the Experimental Study of Cancer in Heidelberg, By VÖLCKER.
10. Dental Therapeutics of the African Natives, By STRUCK.

1. **Isolated Apraxial Agraphia.**—Heilbronner reports the case of an educated man, fifty-eight years old, who lost the power to write even a simple letter, though perfectly conscious of what he wished to say. He also had symptoms of paresis on the right side, though not very marked. The condition of his left hand, in which there were no signs of paresis, was of particular interest. While the patient could perform certain movements with it, which were rather of a reflex order, other voluntary movements were fruitless and not directed to attain the end desired. Heilbronner considers this to have been a case of pure, double agraphia without aphasic disturbance due to a lesion in the left side of the brain. The agraphia of the left hand he classes as apraxic, of the same nature as the other apraxic motor disturbances of the right hand. The agraphia of the right hand was confined to writing from memory while the power to copy remained.

2. **Pernicious Anæmia and Leucæmia.**—Kelling reports a number of cases of pernicious anæmia and leucæmia which he has studied. He thingks the two diseases probably belong together because under certain circumstances the latter may develop from the former, and he also believes that there is a close connection between them and malignant tumors, because of the relative frequency with which malignant tumors are met with associated with these diseases, and because in them the blood forming tissue proliferates in an embryonal form.

3. **Implantation of Tumors.**—Sticker undertook a series of experiments from which he has determined that: 1. If a number of tumor cells are implanted in an organ a single, solitary nodule is usually developed which grows only by propagation. If the implantation is double, either in the same organ or in different organs, a solitary nodule appears in each place. 2. After a tumor has been developed from implantation a second, third, or fourth attempt to implant fails. That is while several simultaneous implantations are possible, several implantations at different times are not. 3. After an implanted tumor has been extirpated another implantation may be successfully performed. 4. If the implanted tumor has been only partially extirpated and the remaining portion continues to grow a subsequent implantation is without results.

4. **Transplantation of Human Ovaries.**—Cramer reports two cases in which he has transplanted human ovaries on account of ovarian atrophy. The operation proved successful in one case, but not in the other.

5. **Chloroma of the Skull.**—Pfeiffer reports a case of chloroma in a child, four years old. The principal symptoms were painful exophthalmos with subsequent atrophy of the optic nerve, otitis media of the right ear with swollen and painful mastoid, acute lymphatic leucæmia with swollen lymphatic glands and hæmorrhages beneath the skin and mucous membranes. The course was rapid, and the child died at the end of four months.

7. **Early and Prophylactic Action of Stasis Hyperæmia in Infected Wounds.**—Joseph adds to the clinical cases detailed in the last number two cases of fractured patella associated with suppuration of the knee joint, a case of infected depressed fracture of the skull, a case of an acute suppuration after operation on a hygroma, several cases of infection after operations on the long bones, and a case of diabetic gangrene of the toes, in all of which the influence of the hyperæmia stasis was evidently beneficial and contributed to the recovery of the patients.

ZENTRALBLATT FUER GYNAEKOLOGIE.

September 29, 1906.

1. A Self-Retaining Instrument for Holding the Vulva and Vagina Apart for Vaginal Operations, By M. Blumberg.

1. Self-Retaining Speculum.—Blumberg describes an apparatus of his device which holds apart the vulva and exposes the vagina, and which is useful for all vaginal operations. In colporrhaphies and suture of perineal tears, assistants are unnecessary; in fact, these operations are more easily done than with assistants. By keeping the labia entirely out of the field of operation, asepsis and view of the operative field are enhanced in colpotomies, curettages, and manual cleansing of the uterus. The instrument is easy to handle, and is readily rendered sterile.

GAZZETTA DEGLI OSPEDALI E DELLE CLINICHE.

September 23, 1906.

1. Some Conditions Required for the Decomposition of the Virus of Rabies by Means of Radium, By Guido Tizzoni and Alessandro Bongiovanni.
2. On the Relations of Typhoid and Pseudotyphoid Germs, By Spiro Livierato.
3. Pedunculated Thrombus of the Heart in the Stage of Organization, By Carlo Bassoni.
4. Echinococcus Cysts of the Left Lung. Removal of the Cystic Fluid. Antiseptic Injections, By Ferrucio Bindi.
5. Circumcision in the Treatment of Phimosis and of Venereal Ulcers, By Luigi Nelli.
6. Habitual Vomiting in an Infant Cured by the Administration of Potassium Iodide to the Mother, By Aleardo Cerioli.

6. Treatment of Vomiting in Infants by Potassium Iodide Administered to the Mother.—Cerioli reports a case of obstinate vomiting in a nursing infant in which he gave very small doses of potassium iodide to the mother. The remedy was given with the idea of diminishing the activity of the mammary gland; for the milk in this case seemed too rich for the child's digestion. The success of this treatment exceeded all expectations, as the vomiting ceased from the very first day and the child began at once to improve rapidly. The treatment was continued for two months, after which it was abandoned, as it no longer appeared necessary.

ROUSSKY VRATCH.

September 9, 1906.

1. On the Spirochætæ of Syphilis, By Th. Z. Omeltchenko.
2. Treatment by Means of Bier's Hyperæmic Method, By Th. I. Gramenitsky.
3. The Value of Bacteriological Examinations of the Urine in Diagnosis, By N. N. Klodnitski.
4. Möbius's Serum in the Treatment of Basedow's Disease, By M. L. Abelman.
5. Echinococcus Cysts of the Kidneys, By M. S. Davidoff.

1. The True Nature of the Spirochætæ of Syphilis.—Omeltchenko supplements the observations which he published in *Roussky Vratch,* 1905, No. 29 (see *New York Medical Journal,* September 30, 1905, p. 713), on the true character of the so called spirochætæ of syphilis. Omeltchenko at that time announced his conviction that these spiral bodies were nothing but fragments of elastic fibrillæ which may occur in any tissue that contains these histological elements in any degree. In the present article he reaffirms his conviction, at least he asserts that as yet the spirochæta of Schaudinn and Hoffmann has not been excluded from the group of so called "false parasites." He presents microphotographs of elastic fibrillæ, some of which truly resemble the spirochæta in a remarkable degree. A review of the work of other observers, especially of those who occupied themselves in devising methods of staining the spiral organism, is given in the article, which is one of great interest on account of the peculiar views expressed therein. It was hoped that the silver nitrate method of Levaditi would differentiate spirochætæ from elastic fibres in staining preparations containing both these elements, but Omeltchenko points out that the method of silver staining was first applied to connective issue fibrils by Bielschowsky and Pollak, and that there is nothing specific about the behavior of the spirochætæ towards this staining method.

2. Bier's Method of Treating Abscesses, Etc.—Gramenitsky reports success in the treatment of one hundred and nineteen cases of local inflammatory and suppurative conditions by means of Bier's method of artificial hyperæmia. Among these cases there were fifty-eight phlemonous abscesses, three ordinary abscesses, twelve panaitia, seven cases of acute suppurative tenosynovitis, six of acute suppurative lymphadenitis, etc. The method of Bier not only impedes the growth of bacteria and reduces inflammation, but considerably relieves pain. He is very much in favor of this mode of treatment.

4. Moebius's Serum in Goitre.—Abelman obtained excellent results in a case of exophthalmic goître with the use of Möbius's serum known as antithyreoidin. Following Möbius's idea that myxœdema and Basedow's disease are diametrically opposed conditions, Burghardt first employed the serum of patients with myxœdema in the treatment of exophthalmic goître. Möbius's antithyreoidin is a preparation of the blood of sheep in which the thyreoid gland had been removed some time previously. This serum was at first used subcutaneously, but now it is employed with just as good results by mouth. Several authors, among them Alexander, Lomer, During, Eulenburg, etc., have reported successful cases treated with the serum of Möbius. The present case occurred in a girl aged thirteen. The dose was from two to twelve drops three times daily, given for a period of twenty days. No untoward symptoms were noted. The exophthalmos, the rapid pulse, and the general condition of the patient greatly improved under this treatment.

5. Echinococci in the Kidney.—Davidoff's case of echinococcus cysts in the kidneys shows how closely these cases resemble those of stone in the kidneys, accompanied by renal colic. Only the detection of the echinococcus in the urine can determine the diagnosis. The cysts cause the colicky pains in their passage along the ureter.

ANNALS OF GYNÆCOLOGY AND PÆDIATRY.

September, 1906.

1. Pelvic Abscess and Its Treatment, By N. MacPhater.
2. The Relation of the Major Gynæcological Postoperative Cases to the Country Doctor, By H. Hamilton.
3. Review of Obstetrical Literature, By H. E. Plummer.

1. Pelvic Abscess and Its Treatment.—MacPhater believes there are many cases in which the vaginal route is preferable to the abdominal for operative procedure upon the female pelvic organs. Inflammatory conditions within the pelvis or their consequences are present in most women. A knowledge of the anatomy of the peritonæum is essential to satisfactory work upon the pelvic organs. Likewise a knowledge of the distribution of the pelvic tissue which is beneath the folds of the peritonæum and is by no means an imaginary quantity. The principal vascular nervous and lymphatic supply is described, and the suggestion offered that operative procedures would be deprived of their opprobrium in many cases, if operators were more conversant with the fundamental facts of pelvic anatomy. Pelvic inflammations are frequently the result of traumatic causes. Improper and imperfect curettage, and the dragging down of the uterus, during operations within the vagina, especially when the uterus is already the seat of inflammation of its consequences are responsible for many of these cases. Other causes are the retention of the products of conception and gonorrhœa. When suppuration and abscess have oc-

curred within the pelvis and the areolar tissue beneath the peritonæum is involved, the safest procedure is an incision in the vagina, and evacuation of the abscess by that route. The principal point is to keep close to the uterus and peel back its peritoneal covering with the finger, in approaching the abscess.

2. **The Relation of the Major Gynæcological Post-operative Cures to the Country Doctor.**—Hamilton thinks the tendency of the gynæcologist everywhere is to encroach upon the field of the general practitioner. He thinks the latter should anticipate the work of the former by studying in his patients, the normal position of the uterus, and remedying abnormalities before they have caused serious damage. He should also comprehend and be able to relieve dysmenorrhœa in its various forms, and educate his female patients as to the physiological functions of the pelvic organs. By such a course there would be very little occasion for the services of the gynæcologist. The major gynæcological operations may cure the patients in some cases, but in very many cases they do not, and leave the patients unable to attend to sexual or household duties. The writer thinks that if those who suffer with pelvic disease had more confidence in the family doctor, and came to him earlier for relief, there would be less need of the gynæcologist and his major operations.

Letters to the Editors.

THE WORD PHRENITIS.

1744 N STREET, N. W.,
WASHINGTON, D. C., *October* 16, 1906.

To the Editors: Though I disapprove entirely of the plan of Dr. A. Rose to make modern Greek the basis of a reformed medical nomenclature (or onomatology), it is concerning a single word, *phrenitis,* that I now wish to take issue with him. Dr. Rose has for some time put forward this word as *the* proper term for various mental derangements of undefined pathology. In the *New York Medical Journal* for October 6, 1906, he quotes a good story from that prototype of Münchausen, the Greek historian Herodotus, which tells of one Kleomenes, who, being insane, so mutilated himself that he died. Dr. Rose cites this as an example of "phrenitis (miscalled psychosis)." As he takes here an authoritative stand, I wish to give reasons against this use of the word:

1. *Phren,* from which the word is derived, means primarily *diaphragm.* It also means mind, because the ancient Greeks regarded the diaphragm as the seat of the intellect, just as with us the heart is commonly considered the seat of the emotions. Later the word *diaphragma* was introduced, and *phren* came to be used only in its derived sense.

2. *Phrenitis* is an old word in medical literature, having been used by Hippocrates in the sense of an *acute* inflammation of the brain. Its use in this sense has persisted till recent years. See Hooper (1834), Dunglison (1900), Gould (1898). Quain (1895) gives it this meaning, but states that it is obsolete, while his 1902 edition omits it altogether. The modern Greek (Pervanoglou) defines it likewise. The French word *phrénite* (Gasc, 1876) means inflammation of the diaphragm. As *frenzy,* it is obsolete. Gould (1898) also defines phrenitis as an inflammation of the diaphragm.

3. The termination *-itis* is accepted as meaning inflammation of the part to which it is affixed. Inflammation is a definite set of changes in concrete tissue. Mind is a highly specialized form of energy, a manifestation of brain function, a quality or condition, and not a concrete entity. We cannot speak of a concrete affection of an abstract quality—as well speak of inflammation of taste, or smell, or locomotion. The only sense in which it is proper to join *-itis* to *phren* is that of inflammation of the diaphragm.

Dr. Rose is advocating the use of an already overworked word in an illogical sense. I hope to see the day when the only scientists using it thus will be the phrenologists. B. M. RANDOLPH.

Proceedings of Societies.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Meeting of June 11, 1906.

The Vice-President, Dr. R. E. VAN GIESEN, in the Chair.

Lupulin in the Treatment of Gastrointestinal Diseases.—Dr. HEINRICH STERN read this paper. It was essential, he said, that the drug should be absolutely fresh. It was especially indicated in functional disturbances of the stomach, in sensory as well as motor neuroses, and in neurasthenia gastrica. In nervous anorexia it might be prescribed in capsules containing five grains each, from one to three capsules to be taken with carbonated water one or two hours before meals. If a more energetic action was desired, the lupulin might be combined with berberine phosphate and capsicin or with condurangin and cinchonidine. These combinations were also useful in other functional disturbances. In hyperæsthesia of the gastric mucosa lupulin was best combined with silver nitrate. In exceptional instances codeine, belladonna, or monobromated camphor was called for. In the most painful of all gastric neuroses, cardialgia (gastralgia, gastric spasm, gastrodynia), lupulin was a valuable remedy, provided the pain was due to neurasthenia, hysteria, chlorosis, or general weakness. During the acute attacks, when severe, medication by the mouth was useless; but when the attack was less severe, and particularly in the intervals, the drug, in fifteen grain doses, repeated every hour of necessary, was of great service. The administration of spirit of chloroform or spirit of nitrous ether did not interfere with its action. In some instances it was advisable to give lupulin in the form of suppositories. In these it might be advantageously combined with extract of cannabis indica, with camphor and extract of belladonna, or with extract of belladonna and extract of physostigma. In the various forms of nervous vomiting lupulin had a decidedly more lasting effect than either bromides or valerates, while it did not give rise to secondary trouble, as these were apt to do. In the vomiting of pregnancy its combination with menthol had proved of advantage in many cases. In aerophagia and gastric spasm it was also useful. In atony (diminished motility without demonstrable anatomical changes) it acted as a gastric stimulant. He thought the fact should not be lost sight of that lupulin not only was a symptomatic remedy, but, since it stimulated the general and local circulation and improved the tone of the gastrointestinal tract, might also alleviate or eradicate the cause of certain alimentary disorders. Gastric secretory disorders of all forms and degrees were usually greatly benefited by it. In hyperchlorhydria belladonna or atropine might be given with it, but only for limited periods. In subacidity or anacidity of nervous origin it might be advisable to combine with it such agents as those recommended for nervous anorexia or to give bitter stomachics, in addition to the lupulin. In neurasthenia gastrica (the so called nervous dyspepsia), it might be advantageous to combine it with an iron preparation or some other tonic. Although not to the extent as in functional disorders, lupulin might frequently prove of service in diseases of the stomach having an anatomical basis, as in chronic gastric blennosis or in gastrectasia, both of mechanical and atonic origin.

In functional disorders of the intestine lupulin was even more useful than in those of the stomach. In intestinal diseases Dr. Stern's observations have led him to the following conclusions: That, administered by the mouth, lupulin should be given in capsules, that the dose should be one and a half times or twice as large as in analogous gastric disorders, that in disease of the colon or rectum suppositories were to be preferred, and that the drug might be given for protracted periods without causing cumulative or other deleterious effects. Among the affections in which he had employed it, either alone or in combination with other drugs indicated by the existing condition, were enteralgia and the motility neuroses of the intestine—nervous diarrhœa, peristaltic unrest, enterospasm, and nervous flatulency. It had also proved of service as an adjuvant in mucous colic, which had an anatomical as well as a neurotic basis, and in affections with strictly anatomical basis, such as acute and chronic enteritis.

The Relations of the Gastrointestinal Tract to Nervous and Mental Diseases.—Dr. Robert Coleman Kemp read this paper. His remarks, he said, would be entirely based on the theory of autointoxication as brought out in the investigations of Bouchard, Vaughan, Novy, Herter, E. E. Smith, Hamilton, and others. He first described the relations of the gastrointestinal functions to toxæmia, mentioning in detail the sources of infection met with in the stomach, the large and small intestine, and the liver. In speaking of the latter he stated that Herter had demonstrated that the liver was the chief organ for the removal of indol, and that by it various toxines, such as that of typhoid, were similarly destroyed or chemically changed. Therefore any diminution of the functional mass of the liver, or interference with its functions, impaired this property, so that toxæmia resulted. The bile itself, when absorbed into the system, acted as a poison and produced a definite toxæmia.

In the second portion of the paper he called attention to the following propositions: 1. That epileptoid seizures, or even true epilepsy, might in some instances result from autoinfection. 2. That nervous, neurasthenic, or even melancholic symptoms might result from toxæmia. 3. That in many cases of nervous or mental diseases derangements of the gastrointestinal functions, with resulting autoinfection, might aggravate the original condition from which the patient suffered and thus create a vicious circle. 4. That it was the duty of the physician to place his patients, whether inmates of a public asylum or private patients, in the best possible physical condition. 5. That on the admission of every patient to an institution for the insane a thorough investigation should be made into the existing conditions in the gastrointestinal tract, and appropriate treatment carried out; for by this means alone could a scientific study of the relations of toxæmia to nervous and mental diseases be made, and the results of treatment observed. The late Dr. E. C. Dent had been one of the first to appreciate the value of this method, and it had already been instituted as the Manhattan State Hospital.

In his study of convulsive seizures in infants and young children resulting from improper food or from overloading the stomach, Dr. Kemp had found it practicable to distinguish two classes of cases, the gastric and the enteric. In the gastric cases the seizures came on a short time after the administration of food, and emesis often produced immediate relief. He had noted acute dilatation, and believed this to be caused by autoinfection resulting from fermentative or putrefactive changes in the stomach. Such attacks, being repeated, might predispose to the convulsive habit and become a factor in the production of epilepsy. In the enteric type the convulsions occurred several hours after the administration of food and were the result of toxæmia from the intestinal canal. They were relieved by the use of an enema, and, as an adjuvant, castor oil or calomel should be given afterward. Instead of these well defined types, we might have a combination of the two. In speaking of epileptoid attacks in adults, he said that Mangelsdorf, of Bad Kissengen, had examined four hundred cases of epilepsy and several hundred of migraine, and found acute dilatation of the stomach just preceding or during the attacks. Another interesting type was gastric tetany, in which dilatation of the stomach was a factor, and a case reported by Smith was cited. The recurring attacks were entirely relieved by lavage and nonnitrogenous diet, but whenever the treatment was withdrawn symptoms at once showed themselves. Red meats, Dr. Kemp said, always tended to aggravate nervous conditions, and in the modern treatment of epilepsy, as well as many other nervous diseases, it was customary to eliminate them from the dietary. In his own cases of epilepsy resulting from toxæmia he had noted that the patients were large eaters, especially of the red meats. Many other authors had reported cases similar to that of Smith, and in five cases given by Moynihan gastroenterostomy was performed, with resulting cure. This was most significant, as by thorough drainage of the dilated stomach the recurrence of autoinfection was prevented. The brilliant surgical work of the Mayos among the insane and those suffering from nervous diseases was well known, and he believed that in certain cases of marked dilatation or ptosis of the stomach, with resulting autoinfection, surgery would in the future play an important part in relieving nervous and mental trouble.

In a number of cases of epilepsy seen during the past few years Dr. W. H. Thomson had cured the patients by treatment of the gastrointestinal tract. His treatment was by means of intestinal disinfectants, regulation of the bowels, and the use of diet and medication suitable to the individual case. Sodium bromide, combined with antipyrine, was given temporarily to lessen reflex irritability and break the convulsive habit. Recently Dr. Kemp had treated several cases of epilepsy which were unquestionably due to autoinfection from the digestive tract, and one of them was described in detail. Having spoken of some of the conditions found among the epileptics in the Manhattan State Hospital, and of the treatment now being carried out there, he stated that on Thanksgiving Day all the epileptics were given a full diet, with the result that every one had an exacerbation of convulsions. This he thought was very suggestive. Interesting nervous cases resulting from autoinfection were those in which ptosis of the gastrointestinal tract was the primary factor. With the descent of the stomach and bowels there was ptosis of the right kidney (sometimes of both kidneys), and there might be, in addition, ptosis of the liver and spleen. The gastric condition might be one of hyperchlorhydria, or hypochlorhydria, or even of achylia gastrica. In a recent work on Graves's disease, Dr. W. H. Thomson had held that gastrointestinal toxæmia was the cause of that affection, the implication of the thyreoid being secondary; and it was a suggestive fact, in view of Dr. Thomson's conclusions, that ethylidenediamine, a ptomaine found by Kulneff in some cases of dilated stomach, would, when injected into mice and guinea pigs, produce exophthalmos and some of the other symptoms observed in Graves's disease. There seemed to be an unfortunate disposition on the part of neurologists to consider various gastrointestinal disturbances in their cases as invariably the result of the nervous or mental disease. This was no doubt the case in some instances, but he thought that even now it had been fully demonstrated that in others the gastrointestinal disturbances were primary.

Appendicostomy and Cæcostomy for the Relief of Chronic Diarrhœa.—Dr. S. G. Gant read this paper. Its object, he said, was to give his experience in the

treatment of nine cases of persistent ulcerative colitis and chronic diarrhœa by means of appendicostomy or cæcostomy. He expressed his conviction that in a large percentage of cases of chronic diarrhœa the disease causing it was located in the lower bowel. While the trouble might have originated higher up in the alimentary canal, the discharges from the original disease produced lesions in the lower bowel which often persisted long after such primary trouble had been relieved or cured. In the lower bowel the most common cause of chronic diarrhœa was colitis, and the inflamed and ulcerated condition of the mucosa of the colon might be the result of simple inflammation or of trauma, syphilis, gonorrhœa, tuberculosis, or amœbic dysentery. The latter had proved quite common since the recent war with Spain, and three of his nine cases were of this character. When diet, internal medication, and irrigations had failed to arrest the progress of a chronic colitis, it was time to resort to surgical procedures. While Mayo Robson, in 1893, and Hale White, in 1895, had reported cases cured by establishing an artificial anus in the colon, colostomy for this purpose had not become popular because of the frequent and involuntary escape of gas and fæces resulting, and because of the difficulties and dangers attending the operation to close the opening after the relief of the disease. The operation known as valvular cæcostomy, described later by Gibson, was preferable to colostomy, but at the present time appendicostomy, suggested by Weir and named by Willy Meyer, was most in vogue. In eight of Dr. Gant's nine cases, the outlines of which were given in the paper, the appendix was brought up, attached to the skin, and opened, in order to permit through and through irrigation. In the remaining case the cæcum was opened and a catheter introduced, after the method of Gibson. The operation of appendicostomy was comparatively simple, could be quickly performed, and was no more dangerous than the interval operation for appendicitis. The technique employed by him was as follows: The abdomen was opened by a short intermuscular or gridiron incision, such as was made for appendectomy. The appendix was freed, if adherent, and brought outside the abdomen, and a probe inserted to make sure of its patency. If found to be too short, strictured, or otherwise unsuitable, it should be removed, and cæcostomy performed. If, however, the appendix was sufficiently long and patent, it was ligated and cauterized. The cæcum at its base is sutured to the abdominal wall, and the parietal peritonæum, muscles, and skin were closed with plain catgut sutures. The appendix was anchored to the skin by one or two sutures, and the wound covered with protective tissue and gauze held in place by adhesive plaster. In some cases the meso-appendix was left intact, and in others the artery was ligated and the peritonæum stripped off; but apparently neither method had any advantage over the other. Usually the part of the appendix exterior to the ligature sloughed about the fourth or fifth day. The irrigations were begun immediately, with the use of saline solution, ice water, or preparations of boric acid, potassium permanganate, phenol, krameria, ichthyol, mercuric chloride, or silver nitrate. It appeared to make very little difference what irrigating fluid was employed, provided that it was used twice daily and in sufficient quantity to cleanse the bowel thoroughly. About a quart was generally required.

In practically all cases the abdominal discomfort and frequent evacuations ceased immediately after the operation or after the first irrigation, and within a few days the stools became almost normal. The operation was not followed in any case by serious shock or great discomfort. In only one instance was there nausea, and in this it was due to the inclusion within the wound of a portion of the cæcum. Primary union occurred in all but two or three cases, where there were stitch abscesses. Only when the opening was small or showed a tendency to close was a catheter found necessary to enlarge it and allow of free irrigation. The appendix was kept open for periods varying from three to twelve months. The opening closed spontaneously in some cases, while in others it was necessary to cauterize the mucosa in order to close it. The only unpleasant sequela was a small ventral hernia in one case, and this was believed to be probably due to the character of the incision, which in this instance, instead of being of the usual gridiron variety, was one carried directly down through the skin, muscles, and peritonæum. In one attempted appendicostomy the appendix was found short or completely occluded, necessitating its removal and the performance of cæcostomy. In another the appendicostomy was successfully done, but through and through irrigation was rendered impossible by the existence of a stricture of the transverse colon, which was discovered at a second operation, when the appendix was removed and the abdomen closed. In one case the examination showed, in addition to the presence of ulcerative colitis, an invagination of the sigmoid flexure into the rectum. After appendicostomy had been performed the abdomen was opened in the left inguinal region, the sigmoid drawn up out of the pelvis, and attached to the inner abdominal wall, and the wound closed. The patient, a man of forty-five, did well for three days, when he was seized with a high temperature and other febrile symptoms. On the fifth day he was anæsthetized and sloughing of the appendix and a large part of the cæcum around its base was detected. He died shortly after the second operation.

Dr. WILLIAM H. THOMSON, in discussing Dr. Kemp's paper, said that at the present time rational therapeutics demanded a recognition of the radical and fundamental difference between organic and functional diseases of the nervous system. This difference was as great as that between diabetes mellitus and smallpox. A patient suffering from syphilitic gumma of the brain might have just the same symptoms as one with an attack of migraine; yet the latter was not a nervous disease at all. Functional nervous diseases were not inferior to or of less importance than organic, and some of them, such as tetanus and hydrophobia, were terrible in character. In epilepsy the existing cause might be some lesion of the brain, such as a tumor, but the instability was as much due to the condition of the blood as was the case in poisoning by strychnine. Any disease due to an organic lesion was permanent, but the characteristic of all functional diseases was intermittency, and toxæmia was the only thing that could explain this intermittency. The study of toxæmia was as yet in its infancy, and it was only within the past fifteen years that we had been able to get at some little idea of the real processes of digestion and the numerous sources of autointoxication furnished by derangements of them.

Book Notices.

Gli Uomini primitivi delle selci e delle caverne. Pel Professor ANGELO ZUCCARELLI, dell'Università di Napoli. Con 112 Illustrazioni. Napoli: Francesco Perrella, 1906. Pp. 128.

This is a compendium of observations upon primæval man as he existed in the flint age and the age of cave dwellers. The book is illustrated with a number of half tone cuts and drawings in line, showing primitive flint implements, bones, etc. The work is largely based upon an extensive and painstaking study pursued by the author among the relics of primitive man in a cave near Cape Polinuro, known as "Grotta" or "Cola delle ossa" (the cave of bones). The flint

implements found in the cave were nearly all of small size. They bear evidences of rude skill in fashioning. The implements of bone were evidently made with flint tools of the period and are whittled as children now whittle articles from wooden sticks. The author does not feel able to decide whether the articles found belonged to the neolithic or paleolithic age.

A Manual of Medical Treatment, or Clinical Therapeutics. By I. BURNEY YEO, M. D., F. R. C. P., Emeritus Professor of Medicine in King's College, London, etc. Volume I. Chicago: W. T. Keener & Co., 1906. Pp. 696.

This new edition of a work first published in 1893 is an evidence of its usefulness and popularity, for this is practically a reprinting of the revised edition of 1902 with the addition of a table that shows the differences in strength between British and American medicinal preparations, based on the last pharmacopœias. The goal of medicine is to cure disease, and in this work the practitioner will find many useful and practical suggestions for the treatment of his patients.

Operative Otology. Surgical Pathology and Treatment of Diseases of the Ear. By CLARENCE JOHN BLAKE, M. D., Professor of Otology in Harvard University, and HENRY OTTRIDGE REIK, M. D., Associate in Ophthalmology and Otology, Johns Hopkins University. New York: D. Appleton & Co., 1906. Pp. xii-359.

As a whole, this work is one which deserves strong commendation as being exact and clear. It deals exclusively with the surgery of aural diseases, beginning with those of the auricle and thence proceeding inward along the auditory canal to the middle ear and the mastoid, with their intracranial complications. A chapter is devoted to a consideration of operations which, while not strictly a part of otology, must nevertheless be occasionally performed by the aural surgeon, adenoidectomy, subcutaneous and intravenous infusion, and lumbar puncture. The first chapter, on the surgical anatomy of the temporal bone and adjacent parts, deserves special mention as an excellent bit of description associated with numerous illustrations which truly illustrate the text.

The reviewer thinks it well to quote a couple of sentences from the second chapter, in which the preparation of the patient is discussed, because they not only exemplify the literary style which characterizes the work and renders its perusal a pleasure, but also voice a truth potent in every branch of surgery. "If the surgeon himself can find the opportunity to speak a kindly word to the patient, sounding a note of promise or encouragement, just prior to the commencement of the anæsthesia, it often helps greatly to produce a tranquil state of mind and to inspire confidence in the assistant who is to conduct the sufferer into the temporary sleep. With thorough confidence in those about him, and a hopeful feeling as to the outcome, a patient is less inclined to struggle against the disagreeable sensations induced by the anæsthetic and to require a less amount for the production of insensibility."

The work is one which will be found useful by every surgeon who has to deal with this class of cases, and particularly useful by the one who practises operative otology only on rare occasions.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending October 19, 1906:

Smallpox—United States.

Places.	Date.	Cases	Deaths.
Georgia—Chatham County	Oct. 10	2	
Illinois—Moline	Sept. 23-30	2	
Indiana—South Bend	Sept. 29-Oct. 6	1	
Missouri—St. Joseph	Oct. 2-9	1	
Tennessee—Knoxville	Sept. 29-Oct. 6	1	
Texas—Houston	Sept. 29-Oct. 6	1	*
Wisconsin—Appleton	Sept. 29-Oct. 13	3	
Smallpox—Foreign.			
Africa—Cape Town	Aug. 25-Sept. 1	1	
Brazil—Bahia	Aug. 25-Sept. 15	9	
Brazil—Rio de Janeiro	Sept. 2-15	3	
Chile—Antofagasta	Aug. 14-Sept. 3	55	15
Chile—Coquimbo	Aug. 11-31	65	5
Chile—Iquique	Aug. 23-Sept. 8	Present.	
Ecuador—Guayaquil	Sept. 1-15		19
Great Britain—Bradford	Aug. 25-Sept. 18	2	
India—Bombay	Sept. 4-11		1
India—Calcutta	Sept. 1-8		1
India—Karachi	Aug. 26-Sept. 2	4	
India—Madras	Aug. 25-Sept. 7		3
India—Rangoon	Aug. 18-25		2
Italy—General	Sept. 21-27	3	
Nicaragua	Sept. 27-Oct. 4	1	
Russia—Moscow	Sept. 8-16	6	
Russia—Odessa	Sept. 8-22	2	
Russia—St. Petersburg	Sept. 1-8	1	
Spain—Barcelona	Sept. 20-30		11
Turkey—Constantinople	Sept. 8-16		1
Yellow Fever—Foreign.			
Cuba—Guines	Oct. 13	1	1
Cuba—Habana	Oct. 10-16	10	1
Cuba—Santa Clara Province	Oct. 11-13	2	
Ecuador—Guayaquil	Sept. 1-15		2
Mexico—Merida	Sept. 23-29	4	4
Mexico—Tustepec	Sept. 23-29	1	
Mexico—Vera Cruz	Sept. 23-29		1
Cholera—Insular.			
Philippine Islands—Manila	Aug. 18-Sept. 1	58	48
Philippine Islands—Provinces	Aug. 18-Sept. 1	639	490
Cholera—Foreign.			
China—Fuchau	Aug. 10	Present.	
India—Bombay	Aug. 28-Sept. 18		161
India—Calcutta	Aug. 25-Sept. 8		15
India—Rangoon	Aug. 18-Sept. 8		11
Plague—Foreign.			
Australia—Sydney	July 22-28	1	
Brazil—Bahia	Aug. 25-Sept. 1	1	1
Brazil—Campos	Sept. 10	1	
Brazil—Rio de Janeiro	Sept. 2-15	16	3
China—Fuchau	Aug. 10-Sept. 10	Present.	
China—Hong Kong	Aug. 11-18	3	2
India—General	Aug. 25-Sept. 1	3,503	2,523
India—Bombay	Aug. 28-Sept. 18		82
India—Calcutta	Aug. 25-Sept. 8		19
India—Karachi	Aug. 26-Sept. 2	6	4
India—Rangoon	Aug. 18-Sept. 8		188
Japan—Formosa	Aug. 21-31	1	4
Peru—Lima	Sept. 1-12	4	
Peru—Paita	Sept. 1-8	1	1

* Imported.

Public Health and Marine Hospital Service:

List of Changes of Station and Duties of Commissioned and Noncommissioned Officers of the Public Health and Marine Hospital Service, for the seven days ending October 17, 1906:

EAGER, J. M., Assistant Surgeon General. Directed to proceed to Harrisburg, Pa., for special temporary duty, upon completion of which to rejoin his station in Washington, D. C.

GODFREY, JOHN, Surgeon. Placed on waiting orders effective October 13, 1906.

GRUBBS, S. B., Passed Assistant Surgeon. Leave of absence granted by bureau letter of August 30, 1906, revoked.

HOUGHTON, M. W., Acting Assistant Surgeon. Leave of absence granted Acting Assistant Surgeon Houghton for fifteen days, from October 15, 1906, amended so as to be effective from October 20, 1906.

SHEHAN, L. B., Acting Assistant Surgeon. Granted leave of absence for seventeen days, from August 21, 1906.

SHEHAN, L. B., Acting Assistant Surgeon. Granted leave of absence for thirty days, from July 21, 1906, on account of sickness.

WALKLEY, W. S., Acting Assistant Surgeon. Granted leave of absence for five days, from October 15, 1906, and excused for a further period of six days, without pay, from October 20, 1906.

WILLE, C. W., Passed Assistant Surgeon. Directed to proceed to New Orleans, La., for special temporary duty, upon completion of which to rejoin his station at Gulf Quarantine.

Board Convened.

A board of medical officers was convened to meet in Baltimore, Md., October 17, 1906, for the purpose of making a physical examination of a cadet of the Revenue Cutter Service, said board to continue in session until October 23rd, for the purpose of examining other cadets of the Revenue Cutter Service. Detail for the board: Surgeon L. L. Williams, Chairman; Assistant Surgeon Frienchi Simpson, Recorder.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, for the week ending October 20, 1906:

BUCK, CARROLL D., First Lieutenant and Assistant Surgeon. Reported at San Francisco, Cal., for duty at the Army General Hospital.

CHIDESTER, WALTER C., Captain and Assistant Surgeon. Granted leave of absence until January 15, 1907; resignation accepted to take effect on that date.

EASTMAN, WILLIAM R., First Lieutenant and Assistant Surgeon. Returned to the Army General Hospital, Presidio of San Francisco, Cal., from leave of absence.

HEYSINGER, JAMES D., First Lieutenant and Assistant Surgeon. Granted leave of absence for fourteen days.

JONES, HAROLD W., First Lieutenant and Assistant Surgeon. Arrived at the Presidio of Monterey, Cal., from duty in Sequoia National Park.

LEWIS, WILLIAM F., Captain and Assistant Surgeon. Relieved from duty as attending surgeon at Chicago, Ill., and ordered to Fort Smelling, Minn., for duty.

LYSTER, WILLIAM J. L., Captain and Assistant Surgeon. Left Fort McIntosh, Texas, on leave of absence for two months and twenty-four days.

MAUS, LOUIS M., Lieutenant Colonel and Deputy Surgeon General. Granted hunting leave for ten days.

PINKSTON, OMAR D., First Lieutenant and Assistant Surgeon. Reported for duty as surgeon of the transport *Sherman*.

RHOADS, THOMAS L., Captain and Assistant Surgeon. Left Fort Riley, Kas., for his station, West Point, N. Y.

SKINNER, GEORGE A., Captain and Assistant Surgeon. Arrived at Fort Snelling, Minn., per telegraphic instructions, Headquarters, Department of Dakota.

STEDMAN, CHESTER J., First Lieutenant and Assistant Surgeon. Granted leave of absence for one month.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending October 20,1906:

DERR, E. Z., Medical Director. Commissioned a medical director in the United States Navy from September 6, 1906

EAGLING, E., Pharmacist, retired. Died at Yokohama, Japan, September 22, 1906.

FIELD, J. G., Surgeon. Ordered to additional duty at the Marine Barracks, Washington, D. C.

PRYOR, J. C., Surgeon. Detached from duty at the Marine Barricks, Washington, D. C., and ordered to additional duty at the United States Naval Medical School Hospital, Washington, D. C.

Births, Marriages, and Deaths.

Born.

BROWN.—In Chicago, on Sunday, October 7th, to Dr. Henry H. Brown and Mrs. Brown, a son.

STADELMAN.—In Sta. Maria del Oro, Durango, Mexico, on Saturday, September 12th, to Dr. Eugene Stadelman and Mrs. Stadelman, a daughter.

Married.

BAUER—JURGENS.—In Brooklyn, on Tuesday, October 9th, Dr. John Leopold Bauer and Miss Marie Rebecca Jurgens.

DAVIS—HOGATE.—In Salem, N. J., on Wednesday, October 17th, Dr. Richard M. A. Davis and Miss Ella Ford Hogate.

DORSEY—WITHAM.—In Atlanta, Georgia, on Thursday, October 18th, Dr. Rufus T. Dorsey and Miss Laura Witham.

FLANNERY—DONAHUE.—In Philadelphia, on Wednesday, October 17th, Dr. Henry Flannery and Miss Mary G. Donahue.

GRIFFIN—COREY.—In New York, on Tuesday, October 16th, Mr. Henry Seymour Griffin to Miss Florence A. Corey, daughter of Dr. Charles Corey, of Brooklyn.

GROVER—FISKE.—In Somerville, N. J., on Wednesday, October 10th, Dr. Arthur Lanny Grover and Miss Clara Elizabeth Fiske.

HICKS—SHEPARD.—In Cambridge, Maryland, on Wednesday, October 10th, Dr. Fessenden Fairfax Hicks and Miss Helen Shepard.

KEIDEL—SMITH.—In Baltimore, on Monday, October 15th, Dr. Albert Keidel and Miss Janet Smith.

McCLURG—MASON.—In Saugerties, N. Y., Dr. Walter A. McClurg, United States Navy, and Mrs. Theodorus M. B. Mason.

NORTON—SOLE.—In Canada, Dr. Albert A. Norton and Miss Annie Sole.

SAYLOR—MOLAND.—In Philadelphia, on Wednesday, October 10th, Dr. Curwen S. Saylor and Miss Florence A. Moland.

WADSWORTH—DEWES.—In Brooklyn, on Tuesday, October 16th, Dr. Emory Miner Wadsworth and Miss Sophie Grace Dewes.

WAGNER—JACKSON.—In Washington, D. C., on Wednesday, October 10th, Dr. Charles W. Wagner and Miss Jeannette M. Jackson.

WHITEHALL—JOHNSON.—In West Newton, Massachusetts, on Wednesday, October 10th, Dr. Robert White and Miss Lucia O. Johnson.

Died.

ALLEN.—In Ford's Station, Virginia, on Sunday, October 7th, Dr. Peter W. Allen, aged sixty-five years.

BOILIN.—In Wapakoneta, Ohio, Dr. Cicerel Boilin.

BROWN.—In Newburyport, Massachusetts, on Thursday, October 18th, Dr. Alphonse B. Brown.

CASSIDY.—In Rutland, Vermont, on Thursday, October 11th, Dr. W. A. Cassidy, aged twenty-eight years.

CHURCH.—In Mountain City, Tennessee, on Friday, October 12th, Dr. Connelly Church, aged thirty-five years.

CORTAN.—In Brooklyn, on Wednesday, October 17th, Dr. Frank Cortan, aged fifty years.

DOUGLAS.—In Oxford, N. Y., on Tuesday, October 9th, Dr. George Douglas, aged eighty-three years.

DRYER.—In Reedsburg, Wisconsin, on Sunday, October 7th, Dr. John W. Dryer, aged forty years.

GILMORE.—In Chicago, on Wednesday, October 10th, Dr. Arnold P. Gilmore, aged fifty-four years.

HATCHER.—In Ridgley farm, near Dorsey, Illinois, on Sunday, October 14th, Dr. M. G. Hatcher.

HEMPEL.—In St. Louis, Missouri, on Tuesday, October 9th, Dr. Max Hempel, aged forty-three years.

KIMBALL.—In New York, on Wednesday, October 16th, Dr. George F. Kimball.

LAURANT.—In New York, on Friday, October 12th, Dr. Henry A. Laurant, aged forty-three years.

MAXWELL.—In Louisville, Kentucky, on Friday, October 12th, Dr. Joseph Maxwell, aged seventy-three years.

OATIS.—In Hazlehurst, Mississippi, on Tuesday, October 9th, Dr. C. E. Oatis.

ROYER.—In Allentown, Pennsylvania, on Wednesday, October 17th, Dr. Samuel Royer, aged fifty-nine years.

SCANGA.—In Providence, R. I., on Wednesday, October 10th, Dr. Pietro Scanga, aged thirty-six years.

SCHMELTZER.—In Brooklyn, on Thursday, October 11th, Dr. Robert P. Schmeltzer, aged fifty-four years.

SELOVER.—In Newark, N. J., on Tuesday, October 16th, Dr. W. Updyke Selover, aged sixty-three years.

STEWART.—In Montreal, Canada, on Saturday, October 6th, Dr. James Stewart, aged fifty-nine years.

STOCKWELL.—In Port Huron, Michigan, Mrs. Stockwell, wife of Dr. Charles B. Stockwell, aged fifty years.

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Original Communications.

THE SCIENTIFIC FOUNDATION OF MODERN TREATMENT OF DISEASE.*

BY JOHN V. SHOEMAKER, M. D., LL. D.,
Philadelphia.

Before taking up in a systematic manner the subject of *therapeutics,* which we shall study together during the present term, I wish to say a few words to you about the methods which long experience in teaching has led me to adopt in this classroom, and in which I will expect to have your cooperation. I am very much gratified by seeing among you some whose intelligent and interested faces have been impressed upon me by their faithful attendance during a former term. As they are already familiar with our methods of procedure here, I depend upon them to set a good example to all others and to strive to maintain the good reputation of the class by their punctuality and deportment. To those who appear here for the first time, I extend a cordial welcome, and bid them not to be discouraged by the difficulty of the task that is before them.

The investigation of the properties of drugs, and their effects in health and disease, and especially their utilization in clinical medicine, is a vast subject, full of details of the highest importance to you as physicians. It may at first sight seem almost an impossibility for the human mind to acquire a good working knowledge of the materia medica in the comparatively brief period that you can devote to it in connection with your numerous other studies. Nevertheless, it can be done if the work is performed faithfully and systematically. In order to make the greatest possible progress in the time at our disposal, therefore, several things will be necessary on your part. The first of these is faithful attendance; to keep up with the class, you cannot afford to miss a single lecture. The second of these is punctuality; and to encourage this, I will call the roster of the class at the beginning of each lecture. The third is close attention, and to ensure this there will be frequent quizzing upon the subjects of the lectures, both by myself and my assistants. In addition to the present didactic course, I shall hold clinical conferences at appointed times during the winter, in which I shall assign patients to certain members of the senior class, who will make the diagnoses, explain the pathology, and write appropriate prescriptions suited to the conditions in the respective cases. They will also be expected to defend their therapeutic opinions in the amphitheatre. Finally, I will follow the same course as in previous years of making my clinical teaching very practical, so that it will supplement and fasten in your minds the lessons of the classroom and laboratory. My methods of teaching, therefore, are based upon an intimate combination of theory with practice; the ascertained facts regarding the action of drugs are, by means of clinical illustration, correlated with their therapeutical applications; and, on the other hand the curative effects are constantly explained by referring to the physiological action of remedies. In this way, the vital connection between the science and the art of therapeutics is kept constantly in mind.

Let me dwell for a moment upon the word therapeutics in order to bring out its meaning. It comes from the Greek verb θεραπεύειν, which means "to care for" or "to take care of those who are ill." The Latin word *curare* means almost precisely the same thing, whence comes our word curator, a caretaker. Ambroise Pare, therefore, in saying that he did not cure his patients (Je les panse, Dieu les guérit) erred on the side of excessive modesty. He was more pious than righteous. Any real service rendered to the sick is, strictly speaking, curative. It has no necessary relation or connection with the recovery of the patient, or the ultimate result of the treatment. In fact, "no cure, no pay" is a perfectly equitable arrangement from the etymological standpoint. On account, however, of the popular error which prevails as to the meaning of the word "cure," it is not advisable, for the present at least, to place this legend upon your coat of arms, or inscribe it on your doorplates. It is true that in many cases we cannot predict, and much less promise, the restoration of the patient to health,—which is the common idea of what is meant by a cure, but we can declare what are the most favorable conditions to facilitate his recovery, and at the same time administer remedies which will lessen his suffering and disability, and, perhaps, remove the cause and materially shorten the duration of the disease. In other words, to take the best care of him.

The subject of our study in the concrete is the human being in a state which is more or less of a departure from the physiological or normal standard. I will not stop to affirm the reality of disease, which a modern sect of crazy egotists have foolishly denied. As we cannot refuse to believe the testimony of our own senses as to the evidence daily presented to us in our hospital and dispensary service, and in our individual experience, and also derived from our knowledge of infection, we must

* Address introductory to the course of lectures at the Medico-Chirurgical College of Philadelphia.

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take the existence of disease, as a real problem in human life, for granted. As regards the essential nature of disease, we now know that Hippocrates was right in making his celebrated declaration that "there is no sacred disease, and diseases arise from natural causes." Modern medical science, indeed, is distinguished preeminently above that of preceding eras of medical history by its knowledge of the intimate causes of diseases. The flood of light which has been thrown upon this subject by the growth of biological chemistry and the discoveries of bacteriology has demonstrated the true nature of many diseases, and has placed therapeutics upon a solid and enduring scientific foundation.

As regards the relation which therapeutics bears to your other medical studies, it is evident, as the late J. Milner Fothergill observed, that it is the "superstructure of the building;" all others are subsidiary and of secondary importance. Medicine is properly called the *ars medendi,* or the healing art. Anatomy, physiology, pathology, bacteriology, and all other branches of special study are acknowledged beyond all question in themselves to be both interesting and instructive, but they derive their greatest importance, as every one must admit, from the fact that they are contributory to therapeutics.

In its relation to the other natural sciences, therapeutics has an assured position. Did not Lord Bacon say that the end which he proposed for his philosophy was the multiplying of human enjoyments, and the mitigation of human sufferings? Therapeutics then may justly claim a prominent position in the great system of philosophy, which has become generally accepted and which has accomplished so much for the advancement of civilization. In the words of a writer in the Edinburgh Review, the "new philosophy," as it was called in the time of Charles the Second, has effected great advantages for mankind, foremost among which he cites the lengthening of life, the mitigation of pain, the extinction of diseases; in other words, the objects of our study. The distinction between ancient philosophy and modern is a radical one. The philosophy which Bacon taught was essentially new; its object was the good of mankind. The aim of the Platonic philosophy was the impossible task of exalting man to be a God. The aim of the Baconian philosophy was to supply the wants of man while he continued to be a man. A few of the benefits of the inductive system are so well summarized in the article just referred to that I cannot forbear quoting the concluding paragraph. "It has lengthened life; it has mitigated pain; it has extinguished diseases; it has increased the fertility of the soil; it has given new securities to the mariner; it has spanned great rivers and estuaries with bridges of form unknown to our fathers; it has guided the thunderbolt innocuously from heaven to earth; it has lighted up the night with the splendor of the day; it has extended the range of human vision; it has multiplied the power of human muscles; it has accelerated motion; it has annihilated distance; it has facilitated intercourse, correspondence, all friendly offices, all dispatch of business; it has enabled man to descend to the depths of the sea, to soar into the air, to penetrate securely into the noxious recesses of the earth, to traverse the land with cars that whirl along without horses, and the ocean in ships which sail against the wind. These are but a part of its fruits and of its first fruits. For it is a philosophy which never rests, which is never perfect. Its law is progress. A point which was yesterday invisible is its goal today, and will be its starting post to-morrow." Since these eloquent words were penned, half a century has passed, during which the prophecy of continued progress has been abundantly fulfilled. Therapeutics itself has been greatly advanced, notably in two directions; first, in our exact knowledge of ætiology or the causes of disease, and consequently in the means of preventing them; and, secondly, in our positive and demonstrable information as regards the physiological action of drugs, in consequence of which the problem of treatment is greatly simplified.

This class is very fortunate in one respect, and that is that the eighth revision of the *Pharmacopœia* was completed just a year ago, and is now the established authority and standard which we will follow in all our classroom and laboratory work. It required a little time to become accustomed to the changes from the preceding edition, but they have now been everywhere accepted, and we have settled down to the new order of things. The new members of the class are especially fortunate, inasmuch as they have nothing to unlearn, but commence their studies with the new *Pharmacopœia.*

In addition to the remedies officially recognized by the United States *Pharmacopœia,* there are a large number of extrapharmacopœial or unofficial preparations. New drugs are constantly being added to the materia medica in the progress of pharmacology, a few of which, being of real value, will find their way ultimately into a subsequent revision of the *Pharmacopœia;* but the very great majority of them will not stand the test of experience, and will eventually be left behind and become obsolete. Each revision, therefore, may be regarded as an inventory of the remedies of established value in therapeutics of the period at which it is published. I would advise, therefore, that you follow most attentively the teaching in this department, which will be arranged and thoroughly explained to you in accordance with the eighth revision of the *Pharmacopœia.* I have especially anticipated this last session your needs by carefully revising my textbook on *Materia Medica and Therapeutics,* and adapting it to the last *Pharmacopœia.* I will thus be able every class day to assign to you, beginning with this week, a lesson from this sixth edition of my work. You will be expected to studiously study each lesson from this textbook and recite day by day in classes and subclasses until you know each and every drug considered by the eighth *Pharmacopœia.* In our attitude towards the avalanche of new remedies that is poured upon our pathway by the skill and enterprise of the manufacturing pharmacists of all parts of the world, but especially of Germany, I will recommend conservatism. The old adage, "Be not the first by whom the new is tried, nor yet the last to lay the old aside," is a safe course for the student and physician to follow. Be not carried away by the extravagant claims made for new remedies and new methods of treatment by their enthusiastic advocates and supporters. Remember that while the statements made in the

textbooks with regard to the effects of established remedies are based upon the facts of many years' experience, the statements made with regard to remedies of very recent introduction, in the nature of things, cannot be based upon such long experience, which is necessary in order to reveal the unsuspected dangers of the drug, as well as to determine its real clinical value.

As regards the use in private practice of certain brand new and untried remedies, it is evident that a moral principle is involved. When you make an implied contract with a patient to give him the best results of your skill and experience, it is questionable if you have the right to abandon the fruits of such knowledge and experiment upon him, even though you should thereby incidentally increase your knowledge of new drugs. The proper place for such experimentation is in the laboratory, and under proper restrictions, in the clinic. Moreover, when you are running after new remedies, the public may misconstrue your zeal for knowledge, and naturally conclude that your actions are inspired by a want of confidence in the power of the older remedies to accomplish what is claimed for them. In this way you may sow the seeds of distrust and skepticism, and strengthen the hands of the therapeutical nihilists, who loudly assert that all medical treatment is useless. Upon this subject my advice to you is not to be eager to try all things, at least upon your patients; but urge you to hold fast to those which are good and utilize them for your patients' benefit.

1519 Walnut Street.

A PLEA FOR CONSERVATISM IN ELECTROTHERAPEUTICS. WITH REMARKS ON DOSAGE.*

By A. D. Rockwell, A. M., M. D.,
New York,
Neurologist and Electrotherapeutist to the Flushing Hospital, etc.

Some time ago, the writer had occasion to visit the office of a physician who was thinking to abandon the general practice of his profession and devote himself to the use of electricity in medicine. He was well equipped with static apparatus and high frequency attachment, but with no apparatus for the administration of the direct and induced currents (galvanic and faradic). His enthusiasm was unbounded. He had greatly benefited locomotor ataxia, had reduced enlarged prostates, was always and quickly successful in all forms of rheumatism and neuritis, and, among other marvels, uniformly cured his cases of arthritis deformans. It occurred to me then, as it had occurred to me before, that some discussion along the lines indicated by the title of this paper would be not altogether without value.

Electricity in its several forms is undoubtedly here as a permanent addition to our methods of treatment. It has been compelled to push its way through much indifference, sometimes actual opposition, and it behooves those who are directly interested in an agent which has already served us well, not to hinder its progress by claiming for it more than it is capable of giving.

In surveying the current literature of electrotherapeutics, one cannot but be impressed with a certain lack of judicial fairness that prevails. This want of judicial candor works in a twofold way, very much according to the temperament and environment of the individual. On the one hand, the enthusiast becomes an altogether illogical pessimist and denies the efficacy of the agent which he has crudely tested. On the other, enthusiasm develops in the opposite direction, and overconfidence and overstatement characterize every public utterance or written report. The one encouraging feature in the development of electrotherapy is, that the more we know about physical methods, the more are we inclined to exercise rational judgment in testing them.

We are yet very far from perfection in this direction, and medical literature teems with ill considered and foolish statements, but we have only to turn to the literature of the past and be comforted. We there read that with the very imperfect means at command, among the diseases that were successfully treated by electricity, were blindness, consumption, deafness, epilepsy, gravel, King's evil, agues, etc. At the present day there are few so rash as to claim that much can be done through electricity for the conditions just named, although occasionally we find some over ardent disciples exploiting the use of electricity and other physical methods in the ataxies, etc. In such cases it is charitable to ascribe these statements of cures, in the majority of instances to misconception, to a faulty diagnostic sense rather than to wilful misrepresentation. It is so easy, if one's experience is limited to mistake a functional condition for one that is structural, especially when the milder strongly simulates the graver disease, as is so often the case. A case in point occurs to me that I have frequently alluded to and which I am glad to record, for it seems to me to teach a useful lesson:

Some twenty years ago a brilliant young clergyman from a distant city consulted me for pronounced locomotor ataxia, i. e., so pronounced by the physician to whom he first applied and who was then treating him for that condition. After a careful examination I felt justified in saying to the patient that so far as locomotor ataxia was concerned he might live a hundred years. To-day this patient occupies one of the foremost pulpits in the city of New York, and is among its most distinguished representatives. If it had not been his good fortune to be undeceived as to his actual condition, undoubtedly to the means that were being used in his case would have been attributed the cure of a true case of locomotor ataxia. Of far more importance, however, than a possible therapeutical misconception, was the damage to the morale, the blow to the resisting powers of the system, occasioned by the unjustifiable mistake in diagnosis in this case.

Now, it is no very difficult matter, it seems to me, to decide in any given case whether electricity is indicated or contraindicated, and if indicated what manifestation is most likely to yield results. To indicate the measure of benefit to be expected is quite another matter.

Idiosyncrasies vary, and it is difficult to accurately gauge the extent or severity of existent pathological conditions. Fortunately, there are comparatively few contraindications for the use of electricity in chronic conditions of disease. With a good working knowledge of physics and a skilled technique, if it does no good, it need do

* Read before the annual meeting of the American Electrotherapeutical Association

no harm, but lacking these essentials, it is more than likely that acutely painful and hyperæsthetic conditions will become aggravated with more or less permanent injury. The first broad general principle to be considered in the therapeutics of electricity, using this term in its generic sense without reference to any special modality, is its influence over nutrition, and that these nutritive effects which are secondary are far more valuable than its primary effects, be they stimulating or sedative. For let it not be forgotten that this agent is double edged and cuts both ways. It may act as a stimulant or an ugly irritant, or in many a hyperæsthetic condition of the nervous system as a prompt and unequaled sedative.

It is simply a question of technique and differentiation in the choice of modalities. If one is to be master of an efficient technique, without which the use of electricity in medicine will result in a fruitless quest, he must be familiar both with its physics and physiology. Above all, he must study Ohm's law, a law competent to explain all the phenomena with which it has to do, and which if clearly and generally understood would do much to stem the unfortunate and increasing disregard of that most important manifestation of the continuous current, commonly termed the galvanic.

Many of the more recent workers in the field of electrotherapy seem to be in entire ignorance and some of the older ones to have quite forgotten that in this manifestation of energy we have a kind of electricity, so to speak, for which in certain conditions no other kind can be substituted. Familiar examples are its direct effects upon inflammatory exudates, and upon the central nervous system, especially the brain. These effects are based upon chemicophysical action, and both experiment and experience teaches that in the action of the continuous current of magnitude alone do we get an effective and satisfactory electrolytic and absorptive effect.

Reverting to the fundamental idea of the nutritional effects of electricity upon which in great measure must be based its utility in medicine, I would emphasize the fact that its greatest value lies in its general, rather than in its local administration. Where one local pathological condition is benefited by a purely local application, many constitutional conditions with their varied localized symptoms are benefited by general applications. Both analogy and experience teaches that the full nutritional effects of electricity can be obtained only, as it effects either directly or reflexly the whole central and peripheral nervous system, including the entire muscular and circulatory system under their control. It acts, therefore, not merely as a stimulant or a sedative. If this were so the cause of electrotherapeutics would have little vitality. Its well attested action is nutritive and constitutional as well as local. As Niemeyer recognized long ago, referring, however, only to the constant current, "we have in it a means more powerful than any other in modifying the nutritive conditions of parts that are deeply seated." Whatever the modality employed, in varying degree, the disposition and capacity for both mental and physical effort is undoubtedly increased by these general applications. They act indeed very much, as do other tonic remedies, whether medicinal or hygienic. In selected cases there follows improvement in sleep, a more vigorous digestion with increased power of assimilation. The rationale of these results depends undoubtedly upon the power of electricity to modify physiological function, either by an increase, a diminution, or some modification of quality. To no one method of general application alone can be ascribed the power to produce these results.

With the requisite equipment we have at our command high frequency currents with the methods of autoconduction and autocondensation, static electricity with its various methods of application, the galvanic current with its central and generalized methods, and last, but not least, the older and well attested, but now neglected method of general faradization. While fully recognizing and carefully testing every new process in the evolution of electrotherapeutics, there are two strong and sufficient reasons why I would urge a recrudescence of general faradization.

1. Because in a long and varied experience I have found that general faradization has an individual merit, at least equal to any other of the general methods and not unfrequently a merit and an effect all its own. It should not supersede other methods any more than other methods should supersede it or each other; but it is a fact of common experience that in the domain of internal or external medication and in hygienic a change of treatment is often of the greatest service. In its relation to climate this principle is especially marked, a change from one atmospheric condition to another often being of decided advantage to the patient. In the treatment of long standing cases by electricity I have seen this fact illustrated hundreds of times, where under one modality and one method of administration, a case seems to hang fire or halt in its progress, under another the case hastens to recovery. It thus becomes evident that to do the best work, one should be well equipped, and he who has abandoned general faradization or who knows not its technique is by so much the poorer in the therapeutical possibilities of the agent employed.

2. Admitting the value of general faradization another argument for its study and more general use is the slight expense even of the very best apparatus. It certainly requires more skill to administer a satisfactory application of general faradization than that required by most of the other methods, and to this conjoined to the partial disrobing of the patient, and the time and labor required of the physician is to be ascribed in part at least, this neglect of a most important part of our art.

Let no one, then, deny the utility of general faradization until he has had adequate practical experience in its use; indeed after such experience no one, I venture to assert will care to do this.

The question of dosage is an important one, and especially so in its relation to the galvanic current, first because of its chemical or electrolytic power and its profound influence

upon the central nervous system and again because it is the only manifestation of electricity that is both physiologically exact and the slightest variation of which can be measured with absolute accuracy and satisfaction. In the use of the galvanic current for the relief of deep seated neuritis, as in sciatica, for the pain due to parenchymatous degeneration and internal cancer, and especially for the relief of that ordinarily intractable disease, exophthalmic goître, we must have massive doses. On the theory of hyperthyreoidization as the causative factor in this condition surgery steps in to limit this excess of secretion by partial resection of the gland, or the ligature of the nutrient arteries, while medicine attempts a neutralization of the toxines by an antitoxine. Much as has been accomplished by surgery in certain cases, and valuable as may be the antitoxine treatment I am constrained to say from a very large experience in the treatment of Basedow's disease, that with the galvanic current the results are quite as good, if not better than those offered by surgery or antitoxine. Its disadvantage is that it is slow in its action, although there are some notable exceptions.

On the other hand, there is no danger and the antitoxine method might be profitably used in connection with the electrical.

But the dose must be massive. There is no use for suggestion here. The idea that two or three milliampères can be of any real essential service is based upon faulty observation, inadequate experience, and an imperfect appreciation of the physics of electricity. The question arises: What constiutes a massive dose? My answer would be, baring its surgical uses where an anæsthetic is demanded, a massive dose of the galvanic current is where it is carried up to, but not beyond the point of endurance, but without injury to the skin. An analogous condition confronts us in the use of the x ray when deep penetration is desired without injury to the skin. This is best accomplished as is now agreed by using tubes of high capacity and great penetrating power, rather than tubes of low capacity, where the effect is expended upon the skin. This is but an imperfect parallel, but still a parallel, the size and quality of the electrode combined with current strength determining the penetration and localization of the current, as the vacuum of the tube and the force actuating it determines the efficiency of the rays.

Bearing in mind the law that the greater the area the less the resistance, it follows that in order to get the best effects in deep seated pathological conditions the area covered by the electrodes should be as great as the nature of the parts permit. The nature of the electrode is also of importance, and in sculptor's clay of the proper consistence we have an ideal electrode for the purpose of giving the maximum effect with the minimum of injury to the skin. Unfortunately, however, it is messy and difficult to handle ordinarily. To overcome in some measure these objections, I have devised and used for years with the greatest satisfaction an electrode. It consists of rimmed discs of hard rubber of any diameter desired, the bottom being covered with blocked tin, which is practically unoxidizable. Filled to the brim with the clay properly prepared it is ready for use.

The fact to be borne in mind then for the utilization of an efficient technique is, that the human body is hide bound, so to speak, and the important question is, how to overcome the great resistance of the skin without injury, so as to affect the deeper structures. No fact of science is better established than that the direct physical and physiological effects of therapeutical doses of what are commonly called the dynamic forms of electricity are concentrated mainly at the points of the recomposition of the current. Truly it passes through the body, but its lines of force converge so instantly and have such slight density when mild currents are used, that the strength of a few milliampères becomes practically expended before reaching any depth. That the effect of the current is inversely proportional to the number of square centimetre surface of the electrode and directly proportional to the number of milliampères of current is self evident, but it is idle to say as has been said, that the current density should be under one milliampère per square centimetre. To get in deep seated pathological conditions, the necessary trophic sedative and circulatory effects the current strength must often be much greater than this. Individuals of course greatly vary in their sensitiveness, and if they are unable or unwilling to bear the necessary discomfort it will be often impossible to get the desired result.

THE SYDENHAM, FIFTY-EIGHTH STREET AND MADISON AVENUE.

A RATIONAL TREATMENT OF CHRONIC CONSTIPATION.*

BY DWIGHT H. MURRAY, M. D.,
Syracuse, N. Y.

Chronic constipation is one of the most common and troublesome afflictions of the human race; and there is probably no other which makes so much work for the rectal surgeon. This condition is neither properly understood nor intelligently cared for by the majority of physicians. Much has been written regarding its ætiology and therapeutics, but the profession is still searching for causes and better methods of treatment. Some resort to valvotomy, some are using rectal dilators, others electricity in various ways, still others depend upon exercise, diet, and massage, while the greatest number relies upon medicines. Many patients, no doubt, are cured by each of these methods.

The pathological condition being nearly always in the large intestine, it should therefore be treated locally. Why should we interfere with the whole digestive tract in order to relieve the blocking up of the great sewer of the body?

In every case of chronic constipation there is a proctitis, sigmoiditis, and colitis, which usually varies in degree with the chronicity of the trouble. After constipation has existed a number of years patients are almost sure to have pathological

* Read before a meeting of the New York County Medical Association, December 27, 1904.

changes in the rectum, particularly in the anal canal. Hæmorrhoids, fissures, ulcers, diseased crypts of Morgagni with pockets extending from these, abscesses and fistulæ are frequently sequellæ. We also find hypertrophied valves of Houston which may help to continue a constipation, but I believe this to be rare. The pathological changes associated with constipation are not found below the entrance to the sigmoid, except in rare instances, and these are usually accidental. I realize that this statement may conflict with the opinions of many observers, but this is a conclusion reached after studying a large number of cases during the past five years. The uniformly good results of treatment which has this line of reasoning for a basis gives me assurance in taking this ground. (It is not of so much importance that the exact cause should be discovered in every case, as that a rational treatment should be instituted, giving promise of success in a majority of cases.) My plan of treatment, in toto, is not used by any other, so far as I know, and it is a pleasure to present the method to the profession, hoping that others may meet with success in its use, as I have done.

In taking the history a careful routine should be followed. Patients should be encouraged to tell their symptoms in detail, as this aids in classifying cases and may indicate a reason to modify the treatment. The data should be systematic, and for this purpose a history chart should be followed which will give uniform particulars of each case. A thorough examination should not be compromised by the sensitiveness of the patient. Physicians are often deterred from making a thorough search on account of the timidity of the patient or sympathy for their suffering. We should decline to treat patients who refuse a thorough examination. In all cases when the suffering of the patient is an obstacle to examination, a local or general anæsthetic, as the case requires, should be employed. We should not content ourselves with the investigation until all possible surfaces have been explored.

Any pathological condition that might interfere with the easy passage of fæces through the anal canal without discomfort should first be corrected (Gant). This, no doubt, is done by all of us, and will cure, according to my records, twenty-five per cent. of the cases without other treatment. When these operations do not cure and where surgical procedures are unnecessary we proceed as hereinafter described. The treatment is given every fourth day until patients have daily normal stools without help, after which the time between treatments is lengthened until the patients are wholly on their own resources. The successful practice of this method involves the expenditure of much time, each treatment occupying, approximately, one hour.

The patient is placed in the Sims position, an electrode after the pattern of Ewald with a perforated soft rubber shield is passed into the sigmoid. The rectal electrode is connected from its binding post to the positive pole of the battery, and rubber tubing connects it also with an irrigator, filled with normal saline solution, which is elevated about three and a half feet above the patient. The rapidity of the flow of normal saline is controlled by a stop cock in the electrode. The negative electrode is made of sheet lead large enough to cover the abdomen, and is well padded with a towel wrung out of hot normal saline solution. The electric saline douche washes all fæcal débris and mucous from the intestinal mucosa, leaving a clean surface for medication, which is of utmost importance in the treatment. It enables us to apply medicinal agents to the mucous surfaces without the interposition of the almost impermeable coating which the secretion constitutes.

The effect on the mucous membrane, the intestinal and the abdominal muscles of the galvanic current applied in this manner seems to be soothing and quieting to the chronic inflammation. The relief of the inflamed condition leaves the muscles free to act, lessening what may be termed muscular fear. My patients tell me that they have better power of expulsion than before treatments were begun. The normal saline in the irrigator is kept at 110° F., and is turned on just before the electric current is started. The amount of electricity used varies from five to twenty-five milliampères, according to different physical conditions.

When the first part of the treatment is finished the abdominal skin is well reddened, and feels as though a mustard paste has been applied. No electricity reaches the tissues, except as the connection is made by the normal saline solution slowly running through the electrode into the sigmoid flexure. This makes an electrode of all parts of the colon which the solution reaches, without discomfort to or danger of burning the patient. This part of the treatment occupies from ten to twelve minutes, and from thirty-two to sixty-four ounces of normal saline solution is thrown into the sigmoid and descending colon. The patient is then allowed to go to the toilet where a free evacuation takes place, leaving the intestinal mucosa clean.

After this the patient returns to the table for the last half of the treatment. This consists in throwing one ounce of an emulsion of olive oil (1 pint), iodoform (1 drachm), bismuth subnitrate (2 ounces) (as advised by Dr. J. M. Mathews for disease of the sigmoid) into the descending colon through a Wales bougie or a special tube which I have devised. This is followed by one to two ounces of some dilute astringent or antiseptic solution or hydrastis. The iodoform is omitted from the emulsion if the patient has an idiosyncrasy that would make its use unadvisable, but I find that the patients do better when using the iodoform. After throwing the medicament into the sigmoid, the patient is kept for about ten minutes on the table, so tipped that the hips are elevated considerably, allowing the emulsion to gravitate high up in the colon.

When this treatment is begun, patients are ordered to stop the use of all laxatives. They are instructed to go to the toilet at a regular hour each day and make an honest effort to stool, taking fifteen or twenty minutes, if necessary, using gentle pressure, but never to strain. Failing in this, the patient is directed to use an enema of

plain water or normal saline in order that the bowel may be educated to empty itself at a regular time. While under this treatment patients are allowed liberal diet. Excess of pastry, confections, and condiments are prohibited; and they are directed to drink at least six glasses of water daily.

As to results of my method, I find that daily stools follow the first treatment in many cases, others after only a few treatments. Comparatively few cases are unsuccessful in obtaining a daily stool, even these show manifest improvement in their general condition. My records show that seventy-five per cent. of the cases are cured, while nearly all of the other twenty-five per cent. are improved. Although each patient is asked to give a year to the treatment, only one has thus far taken treatments for so long a time.

It would tax your patience to go into detail by the report of cases. Some have been little short of miraculous in results obtained. Four and one half years is the oldest cured case I have, a time test sufficiently long to prove the value of what seems to me a rational treatment of chronic colitis which is the real pathological condition in chronic constipation.

Some explanation of my reason for employing the treatment may be of interest. The oil soothes and lubricates, iodoform acts as an alterative and antiseptic, while bismuth has a healing effect on all diseased and ulcerated surfaces. These are applied directly to the surface of the mucous membrane. Astringent and other solutions used to follow the emulsion have their effect locally, according to the kind used and the effect desired.

Mucus is one of the best media for the production of organic putrefaction. Ptomaines there formed are absorbed and cause nervous conditions, headaches, skin lesions, catarrhal conditions of nasal, pharyngeal, laryngeal, bronchial, and vaginal mucous membranes. It is almost impossible for specialists in these branches to cure their chronic cases while this absorption is continuing. This has been proved to me in cases of nasopharyngeal catarrh, chronic laryngitis, chronic inflammatory troubles of the eye, ear, and also in cases of leucorrhœa. Specialists have referred many such patients to me for this treatment of the colon. In every case so far treated by me under such circumstances, improvement has begun as soon as intestinal absorption of putrefactive material ceased. Some patients who had previously undergone long and tedious treatment were cured after both the patient and doctor had become discouraged.

Headaches and many nervous conditions also disappeared during the course of the bowel treatment. This leads me to advance a theory which I have held for many years, that more people are in our insane hospitals to-day as a result of constipation than from any other cause. I am told by the attending physicians of some of our State hospitals and also by neurologists that one of their greatest troubles is combating constipation. This part of the subject deepens as I write, and will be too long for such a paper, so that having given this hint, I will drop it until a future time.

The theory held by such a large proportion of the medical profession that a torpid liver is the cause of constipation is not susceptible of proof. On the contrary, I hold that a torpid or clogged liver is *caused by constipation.* The venous system returning from the large intestine empties directly into the portal circulation. Ptomaines or putrefying material taken up by these vessels is carried directly to the liver. The large intestine full of fæcal matter, whether putrescent or otherwise, prevents the intestinal glands separating from the blood, the worn out material which is brought here to be eliminated from the body through its great sewer. Since the sewer is choked up, the poisonous waste must remain in the circulation, and the first station on its return is the liver. All this returning blood surcharged with poison is poured into the portal circulation. The liver cells thereby become clogged with débris, are changed and altered, thus interfering with the performance of their physiological functions. The patient is called bilious, and a cathartic is often given "to stir up the liver." Does it stir up the liver? No, but it clears out the large intestine by an irritant action, and the intestinal follicles, though crippled, can again for a time do their duty of elimination, thus relieving this most important organ. If the giving of cathartics is continued long enough, as at Carlsbad and similar places, the liver has an opportunity to clear itself. Repeated insults of the kind mentioned will not be tolerated with impunity by our delicately constructed organs like the liver, kidneys, skin, lungs, etc They will surely become crippled, and the whole body must suffer the penalty. The liver is not lazy, it is the most industrious organ of our body, and is willing to work, but when overwhelmed by a flood of unnatural material, cannot serve the body properly. If the intestinal sewer is not blocked, the so called sluggish and torpid liver will not exist.

In vegetable life, luxuriant foliage and perfect fruit depend, to a large extent, upon the nourishment sent by the root. The human body is quite analogous. The quality of the brain, the healthy skin, hair, teeth, muscles; in fact, everything depends upon the quality of nourishment furnished. It matters little how perfect the food ingested may be, if the large intestine is filled with a putrefying mass, it is impossible to furnish pure food to the tissue. The intestinal canal is the root of the human being, and upon its condition in a large measure depends the bodily welfare.

Since embarking in the practice of proctology, which has had to be in a sense, empiric in some cases, the avenues to exact knowledge are gradually opening and I hope to find light. Through pathological research in places to me hitherto dark I shall have, within a few years, reports of pathological changes, the result of study with the microscope and test tube, to offer the profession.

800 University Block.

Schaudinn Medal.—A fund has been collected in Germany for founding a Fritz Schaudinn Medal, to be awarded through the Institut für Schiffs- und Tropenkrankheiten in Hamburg, the last sphere of Schaudinn's activity, every other year for the best essay on microbiology.

TWO UNUSUAL CASES OF VARIX.

By DeWitt Stetten, M. D.,
New York.

The following case is something of a medical curiosity, though to be sure, it is more of academic than of practical interest. It now gives little scope for other than palliative therapeutics, and yet, a recognition of the possibility of such a development, as is shown in the history which follows, will lead the progressive surgeon to adopt early radical measures in beginning cavernomatous or varicose conditions of the lower extremity, particularly if occurring at birth or shortly after.

Case I. *Progressive Phlebectasis of the Lower Extremity.*—The patient is a young man, twenty-eight years of age, and a magazine editor by occupation. His family and personal history are unimportant. At birth it was noticed that the great toe on the right foot was very much enlarged. It was also seen that there was a dilated vein, about an inch long on the outer side of the right leg, midway between the knee and the ankle. Gradually the vein increased in length until, when the child was eight years of age, all the superficial veins of the right leg below the middle of the thigh became very much dilated. The development of painful and sensitive purpuric spots, and œdema of the ankle, with slight interference in walking, were the main symptoms. At this time acupuncture was attempted without success and symptomatic therapy was adopted. Bandaging, the use of an elastic stocking or knee cap was the form of treatment. From this time, the leg became rapidly atrophic, the knee became slightly flexed, and a limp gradually developed. At the age of thirteen the patient first suffered from a formation of painful thrombi in the dilated veins. These occurred usually at the joints, ankle, knee, and below hip, the dilatation of the veins having extended gradually up to the thigh. This clotting and the formation of purpuric spots have continued irregularly up to the present day. It is of interest, that during a recent chronic malarial infection the formation of clots was very much more frequent, and that after recovery this frequency greatly decreased. When the patient was twenty years of age he was put on iodides. This treatment hastened the absorption of the old clots, and prevented the formation of new ones. At twenty-three this was discontinued, and walking and cycling substituted. It seemed that exercise assisted the circulation and prevented thrombosis. At about this time the patient noticed that the veins of the buttock and one on the right lower abdomen were dilated. Since that time there has been no advance in the venous dilatation.

Case I. Fig. 1. Showing atrophy of limb, hypertrophy of great toe, anterior varices (with dilated superficial epigastric), and hæmorrhagic extravasations.

The prominent symptom in this case is the formation of these very painful clots, which, however, is now rather rare, unless the patient holds his leg in one position for any length of time. The patient limps, and his leg tires easily. The general health is good; there are no cardiac, pulmonary, or abdominal symptoms.

The young man is fairly well nourished and examination discloses no thoracic or abdominal abnormalities. Four months ago the spleen was palpable two fingers below the costal margin, on deep inspiration, but after an active antimalarial treatment it could no longer be felt. Rectal examination is negative. The left lower extremity is unusually well developed muscularly, but otherwise normal. The entire right lower extremity is very much atrophied; the knee is flexed about 5°, and the patient walks with a marked limp. The great toe is abnormally large. All over the lower part of the thigh and the entire leg, but especially anteriorly just below the knee, are these irregular purpuric spots of various sizes and in various stages of development.

The superficial veins are all very tortuous and are excessively but irregularly dilated, particularly the internal and external saphenous, and the plexus around and above the popliteal space. On the outer and upper part of the thigh is another noticeable group, and around the crest of the ilium is a decidedly cavernous collection of about the size of a man's fist. The veins which fill rapidly when the patient stands empty with equal rapidity when the patient is recumbent, and the leg elevated. The superficial epigastric vein on the right side is somewhat dilated, and there is a varicocele of the left scrotum. In the veins, just above the outer malleolus, below the inner tuberosity, just at the groin, below the crest of the ilium and over the great trochanter are thrombi, which are painful on pressure. In the main, the veins are thin walled, though in places they appear slightly thickened. No pulsation or bruit. There is no limitation of motion, except extension at the knee of about 5°. The knee reflexes are normal, and there are no sensory disturbances. Electrical reactions are normal. Radiographic examination by Dr. H. Fischer shows only slight osseous atrophy. Blood and urine examination is negative.

The case, so far as a very careful search of the literature can determine, is almost unique, for, in considering the diagnosis, I think that from the history and examination, we can safely exclude as ætiological factors the ordinary causes of varicose veins and obstruction due either to external pressure or thrombotic occlusion.

Numerous observers have reported various caver-

nous conditions of the lower extremity, but these cases have all been more or less extensive tumor formations; i. e., localized angiomatous growths. Only one man, Gastou,[1] has reported a case similar to the one I have described.

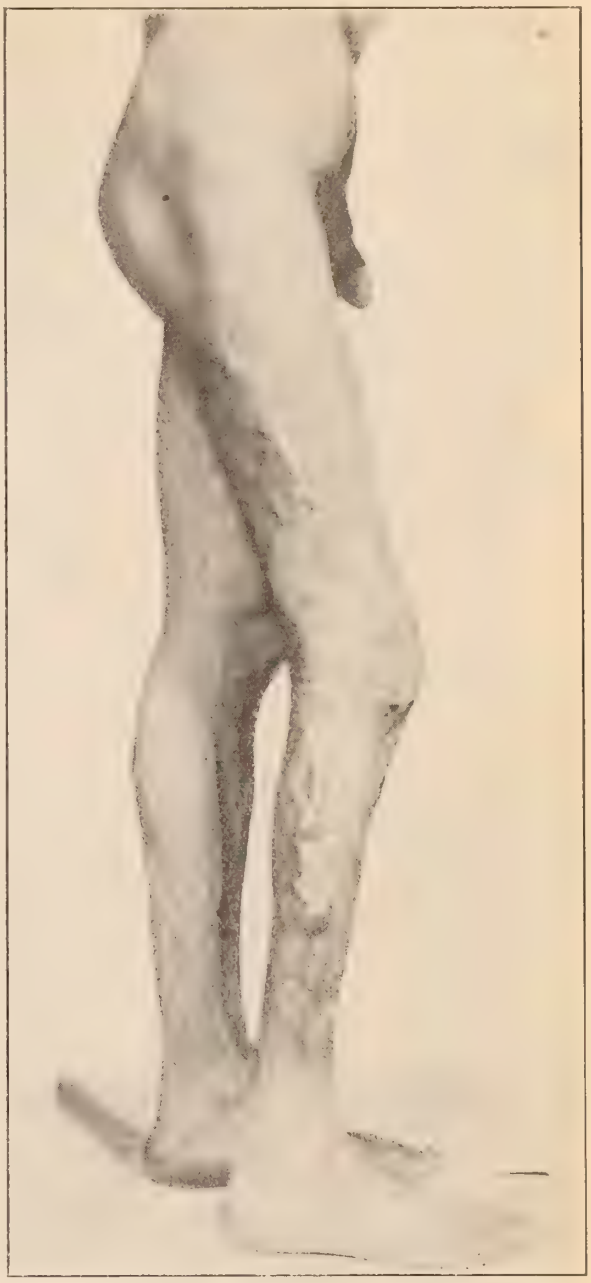
His patient was a waiter, twenty-six years of age. He was afflicted with a varicose condition of all the veins of one lower extremity, including the buttocks and region of the ischium. The disease began when the patient was three months old, progressed gradually until his fifteenth year, and then rapidly from fifteen to twenty, when it remained more or less stationary. There was no atrophy, however, and two noticeable symptoms, absent in my case, were painfulness of the veins on pressure and marked sweating of the limb. Gastou calls the condition "angiome congénital progressif d'apparence variqueuse."

It seems to me that the name I have chosen, progressive phlebectasis of the lower limb, is somewhat preferable, as the condition is really not an irregular growing vascular tumor, but rather a progressive dilatation of the veins along the normal courses, and due probably to an extension of the originally diseased or congenitally defective venous segment. Whether the process is a chronic progressive inflammation, a congenital malformation with extension, due to changed static conditions, or in the nature of a new growth, it is very difficult to say; but it seems likely that had the diseased tissue been removed when first noticed, the condition might have been arrested.

It is questionable now, as to whether or not partial extirpation, particularly of the tumorous masses, in which the painful thrombi usually form, might not give relief. The deep vessels, however, are probably also diseased and operation might do more harm than good. At present, I am only using palliative measures,—bandaging with the "Ideal" bandage and gentle exercise. Amputation can always be thought of as a last resort, though it would be impossible to amputate high enough to remove all the diseased tissue. Still, an artificial limb from the mid-thigh might be more useful and less dangerous than the natural one. The prognosis is naturally unfavorable as progression is probable, and rupture, gangrene and embolism must always be considered possibilities.

The following clinical notes with photograph present a rather unique medical picture. They show a condition, a sequela of typhoid fever, of which a diligent search of the literature reveals, as yet, no record. While the case offers little chance for curative therapy, it is of sufficient pathological interest to warrant its recording.

Case II. *Obliterating Endophlebitis Secondary to Typhoid Fever.*—The patient is a man, thirty-six years of age, and a machine shoemaker by occupation. His family and personal histories are entirely negative. Thirteen years ago he had a severe attack of typhoid fever. After twelve weeks he was allowed up, and on the third day thereafter developed what was evidently a thrombus of the *right* femoral vein. The entire limb was swollen, painful, and bluish in color. This condition was complicated by a hæmatoma of the calf, which was incised and drained. An erysipelatous infection ensued in the wound, but the patient made a good recovery. After two to three weeks of rest the swelling of the limb subsided, and the leg became perfectly normal. He left the hospital, and soon after began his machine work, which necessitated a continuous standing position, and a constant working of a foot treadle. After about two weeks, swelling and pain of the *left* ankle and a varicosity of the *left* calf, induced him to consult a physician, who advised the use of an elastic stocking. This was worn, and since that time, with the



Case I, Fig. 2.—Showing varices on the external surface, purpuric spots, and contracture of the knee.

exception of a slight infection and a subsequent carbolic acid burn at the inner ankle, the *left* leg has caused no symptoms, nor has the condition there changed.

All the while, the *right* leg remained normal, except that at night, occasionally, the patient had painful muscular cramps. The patient, who is a man of intelligence, is very positive of this, and his statements are absolutely explicit and definite. Only three years after he had left the hospital, cured of his typhoid fever, did he first notice moderately dilated veins below the knee,

[1] Gastou, M. P., *Bulletin de la Société française de dermatologie et de syphilologie*, v., p. 194, Paris, 1894.

on the anterior aspect of his right leg. He used an elastic stocking from the ankle to the hip, but never continuously, as it bothered him at work. He occasionally substituted a bandage or a partial stocking. Shortly after, all the veins above the middle of the leg to the hip and the veins on the anterior aspect of the abdomen and chest of the right side became slightly dilated. This dilatation rapidly increased to the present size. At first, his only symptoms were fatigue and

CASE II.—Showing the dilated vessels on the anterior aspect of leg, thigh, and abdomen.

cramps at night, which ceased after two years. Five years ago little thrombi formed in the veins, from the middle of the hip to below the knee. These are tender to the touch and persist. They are increasing in number. In the past five years there has been little change. Fatigue and the formation of sensitive clots have been the chief symptoms. The patient has been wearing a muslin bandage from the ankle to the knee, and an elastic stocking for the thigh. Quite recently I have substituted the "ideal" bandage. The patient shows absolutely no symptoms of any other functional or organic disorder.

Status præsens: The patient's general condition is excellent, and aside from a slight hypertrophy of the liver, there are no thoracic or abdominal abnormalities. There is no ascites. The rectal examination is negative. The left lower extremity shows moderately dilated veins below the knee, especially the lower part of the internal saphenous. There are numerous small scars on both lower extremities due to either decubitus or infected hyperdermatic injections. On the outer side of the right calf is a larger scar from the infected hæmatoma, and on the inner side of the left ankle is a large superficial pigmented scar, the result of the infection and carbolic burn. The superficial veins of the outer and anterior aspect of the *right* lower extremity from the hip to the middle of the leg are enormously dilated and tortuous. Anteriorly the veins of the lower part of leg and foot are somewhat dilated, but strangely the main trunks of the internal and external saphenous are not varicose. The superficial circumflex iliac, the superficial epigastric, the external mammary, the veins in the epigastric region and around the umbilicus, are all dilated on the right side. The veins do not empty entirely when the patient is recumbent, even when the leg is elevated. The walls of the dilated veins are somewhat thickened, and there are small, hard, slightly tender nodules in those from the midhip to below the knee, but there is no palpable thrombus in the femoral. Motion is unimpaired and there is no atrophy. There is a very slight œdema of the ankle.

While there is nothing very obscure about the case, it does seem rather unusual that there should have been no interference with the circulation until three years after the typhoid thrombosis. I think we are justified in assuming a resorption of the thrombus and a practical restitution to the normal. The probabilities are that a productive inflammation followed at the point of thrombosis, which after three years obliterated the lumen of the vessel. That this process took place in the upper part of the femoral or in the external iliac is probable, though I am somewhat at a loss to explain the absence of varicosity of the two saphena, unless it be due to the fact that these two vessels were already of ample size to adapt themselves to the changed mechanical conditions. The examination and the clinical data positively exclude portal obstruction or external pressure.

There are no hæmorrhoids, and the dorsal vein of the penis is not dilated, which facts speak against common iliac or inferior vena cava obstruction. Though unusual, I think that we can explain the dilatation of the superficial abdominal veins with the formation of a veritable *caput Medusæ*, by assuming an obstruction above the saphenous opening, an interference to the flow of blood from the superficial circumflex iliac and superficial epigastric tributaries, a reversal of the current, and the assumption on the part of the abdominal vessels of a compensatory circulation.

As to treatment, naturally, little can be done for the patient, except to support his veins with a suitable bandage, and to prevent rupture and embolism. He should be advised to adopt a form of work that requires little use of the lower extremity. Of course, the outlook is not particularly serious, except in so far as the disease impairs the usefulness of the afflicted member, and as it threatens the possibility of embolism.

The condition, however, should be borne in mind in our treatment of typhoid, and it should be added to our list of already too numerous sequelæ. Every possible precaution should be used to prevent the formation of venous thrombi and if once these

should form, they should be handled with the greatest of care. In giving our prognosis in cases of venous thrombosis complicating typhoid, it might be well to give this unusual sequel, an obliterating endophlebitis, a certain amount of consideration.

1356 Madison Avenue.

FOUR CASES OF CHRONIC ATROPHIC PARALYSIS.*

By W. W. Lesem, M. A., M. D.,
New York.

The four cases which we are to discuss are of interest in that all of them primarily manifested themselves by a gradual progressive weakness of the thenar and the hypothenar muscles of the hand, accompanied by marked atrophy of these muscles and the lumbricales and the interossei. Each of these four cases has as its pathological basis an entirely distinct anatomical lesion. Two of them, it is true, until recently were regarded as types of a single disease; lately Oppenheim and other neurologists have differentiated them from one another. Chronic atrophic paralysis primarily manifesting itself in the thenar and the hypothenar muscles arises: (1) In neuritis of the ulnar nerve; (2) chronic anterior poliomyelitis; (3) progressive muscular atrophy; (4) amyotrophic lateral sclerosis; (5) syringomyelia.

We have omitted a discussion of ulnar neuritis in this paper inasmuch as the presence of sensory symptoms, viz., tenderness, paræsthesiæ, and anæsthesia—the latter especially in the little finger,—as well as the noninvolvement of the first and the second lumbricales, serves easily to differentiate this disease from the others under consideration.

Case I. This patient is fifty-five years old, a tailor by trade. He is the second of six children; there is no history of any similar disease in his family. He contracted a specific infection twenty-five years ago and subsequently married and became the father of seven children, all of whom are living and well. His wife has had no miscarriages. He was perfectly well until five years ago, when he experienced severe needle like pains in his left shoulder. Some months thereafter he noticed that his left hand gradually became clumsy and weak; he would frequently drop things from his left hand. Gradually as the months passed by this weakness, now accompanied by wasting, extended to the forearm and the shoulder. About a year or so after its onset he realized that his right hand was also becoming involved. For some months he experienced no pain or discomfort, until at a date which he is unable to determine he suffered from cramps in his arms and shoulders, and noticed twitching of the muscles of his arm. About two and a half years ago his left arm became practically totally paralyzed, his wrist dangled from his forearm, and his entire left upper extremity hung like a flail from the body. The progress of the disease in his right arm, while far less rapid, has nevertheless been exceedingly well marked; here the atrophic paralysis is well nigh complete. The patient says he never noticed any rigidity of his arms, and that his legs have never been affected; nor has he had any rectal or vesical disturbance. He has no difficulty in swallowing, and his speech is not thick or scanning in character.

Examination: The left wrist is flaccid and dangles to and fro from the forearm when unsupported; when at rest the arm is adducted, and the forearm pronated. The palmar surface of the hand is flattened. On the dorsal surface of the hand, corresponding to the first interosseus, there is a distinct hollow. The distal phalanges are flexed on the second, and the second phalanges upon the proximal. Flexion and extension of the phalanges are impossible; the thumb can neither be abducted nor adducted; the interossei and lumbricales have completely wasted away. There is complete paralysis of all the long flexor and extensor muscles of the forearm; supination and pronation of the arm are impossible. Notwithstanding that the entire arm

Fig. 1, Case II.—Syringomyelia. Well marked atrophy with contracture of the fingers and discoloration of the integument.

is thus markedly atrophied, the skin presents no abnormalities. The wrist and elbow reflexes are lost; slight flexion of the elbow joint is preserved, but the biceps is nevertheless markedly atrophied. Some slight power still remains in the triceps. The deltoid, the supraspinati and infraspinati muscles, as well as the teres major and minor, and the suprascapularis muscles, are totally paralyzed and atrophied. The pectoral muscles also have partaken in this general paralysis and atrophy, but the trapezius, sternocleidomastoid, and latissimus dorsi have escaped. In the hand and in the forearm there is complete loss of reaction to both faradism and galvanism. The biceps and triceps show a partial reaction of degeneration to the galvanic current; to faradism a vermiform contraction of the muscles persists. All the shoulder muscles present a typical reaction of degeneration to both currents. At frequent intervals fibrillary contractions of the pectoralis major,

* Read before the Orthopædic Section of the New York Academy of Medicine.

FIG. 2. CASE II.—Syringomyelia. The discoloration and scaliness of the skin and the atrophy and contractures of the muscles of the hand are well marked.

the triceps, and the biceps occur. The patellar reflexes are normal. There is no spasticity, atrophy, or paralysis of the legs. According to the patient the hand and the shoulder were synchronously involved, and finally the forearm and upper arm. Practically the same condition exists in the right arm only not to such a marked degree.

CASE II. This patient is seventeen years of age, a pressfeeder by occupation. His mother died of tuberculosis. He himself had the usual diseases of childhood, but otherwise was apparently always a perfectly strong and healthy boy. Two years ago his father noticed that one shoulder was apparently higher than the other, and that his back was curved laterally. For several months no other abnormalities were apparent. Fourteen months ago the patient noticed that, while carrying a bucket of coal for the morning fire, his hands and arms would become quickly tired; soon he realized that his arms were becoming weaker and weaker. In June, 1905, i. e., six months after the onset of the disease, his fingers and hands showed signs of atrophy; at about this same time his fingers developed contractures, his nails became ridged and brittle, and the skin over his hands and fingers rough, scaly, and of a dark blue hue. Since June the wasting of his hands has rapidly increased, and two or three months ago his forearms became involved. About June the deformity of his back had become very marked, and a large hump appeared over his left shoulder blade. He never noticed any sensory disturbances, i. e. loss of pain or temperature sense, in any part of his body.

Examination: The left palm is hollow and the thenar and hypothenar muscles are completely atrophied and paralyzed; the lumbricales and the interossei present a similar condition of atrophy and paralysis. The first phalanges are extended, the second and third phalanges are flexed. Sensation of pain in the fingers is lost; there are disassociated areas in the hand where this phenomenon is also apparent. His temperature sense is lost in both the fingers and the hands. The nails are atrophied and ridged. The skin is coarse, cyanotic and cold, but there are no ulcers. The scaliness and discoloration of the skin is more marked in the lower forearm, and terminates abruptly half way up the arm. The left arm is abducted and not pronated. There is no atrophy or paralysis of the biceps or the triceps; but the long flexor and extensor muscles of the forearm are decidedly wasted. The elbow is slightly spastic as is the upper arm.

The right palm presents a distinct hollow. The thenar and the hypothenar muscles present only slight atrophy; the lumbricales and the interossei have completely disappeared. The fingers present contractures similar to those seen in the left hand, that of the little finger being most marked. There is distinct rigidity of the muscles of the upper arm. The scapular muscles on both sides are markedly atrophied. The wrist jerks on both sides are lost; those of the elbow are normal. There are no fibrillary contractions, and there is no reaction of degeneration. The upper arm is not involved. The legs are not spastic, nor are they at-

FIG. 3. CASE II.—Syringomyelia, illustrating the scoliosis of the spine, wasting of the left forearm, and the discoloration of the skin.

FIG. 4, CASE III.—Acute anterior poliomyelitis, subsequently developing chronic anterior poliomyelitis.

rophied; the patellar reflexes on both sides are greatly exaggerated; there is no ankle clonus nor can Babinski's jerk be elicited. The deformity of the back is very marked, the scoliosis being of high degree. There is no involvement of the muscles of the neck nor are there any bulbar symptoms.

CASE III. This patient, twenty years old, presents a condition which we believe is not recorded in modern neurology. At the age of eight years she had a fall, following which her left leg suddenly became totally paralyzed. Further facts concerning the course of this paralysis could not be ascertained. At present the patient exhibits well marked atrophy and weakness of the muscles of the thigh and the leg with distinct shortening, marked deformity at the ankle, loss of the patellar reflex, and impairment of the circulation of the limb, which is cold and flabby.

Six years subsequent to this attack the girl noticed a gradual progressive weakness in the hand beginning especially in the hypothenar region, accompanied by wasting of the muscles in this situation. The disease slowly extended up the forearm and the arm, and at some later date, which she believes was about two years afterward, attacked the right hand. Inasmuch as the course and the present condition of this case of chronic atrophic paralysis closely resembles that described in the two preceding cases, we shall content ourselves with noting that on the left side the atrophy and the paralysis is far more marked than on the right; that the right upper arm is not involved while the left is partially paralyzed and wasted; that there is marked atrophy of the left scapular muscles; that there are no fibrillary contractions of the muscles; no sensory disturbances, but a loss of the reflexes and a partial reaction of degeneration are distinctly elicited.

CASE IV. The last case differs from the preceding ones in its remarkably rapid course. In February, 1905, the patient, who is thirty-nine years old, a carpenter by trade, noticed that he was gradually losing his dexterity and ability to do any delicate work; his tools would drop from his fingers, and his hands became weak. Rapidly he developed a progressive muscular atrophy of the left hand; about a month afterward the right hand became involved. The atrophic paralysis, as in all three preceding cases, appeared first in the thenar and the hypothenar muscles; rapidly it extended up both forearms and arms; the shoulders were next involved, and ten months after the disease began, weakness of the muscles of the neck became apparent. At present the head cannot be maintained in the erect position, and the chin rests upon the chest. Dysphagia, due chiefly to mechanical obstruction, developed in the eleventh month of the disease; the palate, however, is partially paralyzed, and the uvula cannot be completely raised. There is no involvement of the facial muscles nor any ptosis or strabismus; the speech is somewhat indistinct. There is some rigidity of the muscles of the neck, especially of the trapezius. The sternomastoids are flabby and distinctly atrophied.

Until January he was treated as a case of chronic anterior poliomyelitis. When he was first seen by me his very lively patellar reflexes seemed to indicate that he might prove to be a case of amyotrophic lateral sclerosis. Two weeks later, marked increased myotatic irritability, marked spasticity of the legs, and the presence of Babinski's reflex, left no doubt as to the true diagnosis. To both galvanism and faradism there was a decided diminution of excitability; in the forearms a reaction of degeneration was present.

The four cases discussed are so similar in their course, that only by the closest scrutiny and the lapse of time can they be distinguished from one

FIG. 5, CASE IV.—Illustrating the atrophy of the thenar and the hypothenar muscles.

another. Case I, an instance of progressive muscular atrophy, differs from Case III, an example of chronic anterior poliomyelitis, only in the presence of fibrillary contractions of the muscles; frequently it will be remembered this phenomenon is present in chronic anterior poliomyelitis. The differential diagnosis between the two affections in this instance is entirely dependent upon the time of life when the diseases first manifested themselves. Chronic anterior poliomyelitis is a disease of youth and of early adult life, whereas progressive muscular atrophy never occurs before the age of thirty-five. The differential diagnosis is all the more difficult in the

FIG. 6, CASE III.—Chronic anterior poliomyelitis, illustrating the atrophy of the first interosseus as well as the marked atrophy of the left forearm.

two cases under discussion, as Case III is rather an abnormal type of chronic anterior poliomyelitis. This disease usually manifests itself first in the peronei of one leg, and some months later appears in the muscles of the other leg. The anterior tibial group is next involved; subsequently the gluteal and the adductor groups are attacked. Finally the disease extends to the muscles of the calves and to the vastus externus, the vastus internus, and the quadriceps extensor. This type of the disease, save for an occasional involvement of the psoas, iliacus, and the muscles of the back, does not progress further. In Duchenne's type the affection extends to the muscles of the back, and finally involves the shoulders, the arms, the forearms, and the hands.

Case I and Case II, the latter a rare type of syringomyelia, differ from one another in the far more rapid course of the latter, in the presence of slight rigidity of the upper arm, and in the trophic disturbances of the skin and the nails. Syringomyelia is a disease of youth and early adult life; after several months disassociated sensory disturbances typical of gliosis spinalis appeared in Case II, and then rendered the diagnosis evident.

Case I and Case IV, the latter an instance of amyotrophic lateral sclerosis, in all their symptomatology resembled one another so closely that only the extremely rapid course of the lesion rendered the diagnosis of progressive muscular atrophy in Case IV doubtful. It was not until eleven months after the disease had gained any palpable headway that the symptoms of lateral sclerosis in the legs, upon which our diagnosis is based, became apparent.

Cases II and III, cases of syringomyelia and chronic anterior poliomyelitis, respectively, in their early development differed only in the far more rapid course of the former; later slight rigidity of the upper arm, lively patellar reflexes, the presence of disassociated areas of loss of pain, sense, and trophic disturbances of the skin in Case II served to differentiate them.

Cases II and IV both began as cases of progressive muscular atrophy. Both of them rapidly developed slight rigidity and exaggerated patellar reflexes. Finally the presence of trophic skin disturbances and dissociated areas of loss of sensation in Case II, and the symptoms of lateral sclerosis in Case IV, was sufficient to enable us to arrive at a definite diagnosis. As we have seen before, Case II is an instance of syringomyelia, while Case IV is an unusual type of amyotrophic lateral sclerosis.

The differences between Cases III and IV alone remain to be considered. Case III is peculiar in that six years prior to the onset, the patient had an attack of acute anterior poliomyelitis involving only the left leg and the thigh. The right lower extremity was at no time affected. Six years afterward the patient developed a chronic anterior poliomyelitis of both upper extremities. This case and Case IV, the latter amyotrophic lateral sclerosis, in their early stages differed only in the far more rapid progress of the latter. Both began in identically the same way, but in Case IV within a year the disease had invaded the muscles of the upper arm and the neck, giving rise finally, in the eleventh month, to spastic symptoms in the legs. Case III, on the other hand, after four years' duration has extended only to the left upper arm and shoulder, while the right upper arm is but slightly involved.

From this analysis of our cases it will be seen that occasionally syringomyelia, chronic anterior poliomyelitis, progressive muscular atrophy, and amyotrophic lateral sclerosis, so closely resemble one another in all their symptomatology, that for months we are utterly unable to differentiate them. Syringomyelia and amyotrophic lateral sclerosis are far more rapid in their course than chronic anterior poliomyelitis and progressive muscular atrophy; at the outset this is the only factor that may throw any light upon the differential diagnosis. When spastic symptoms of the legs do not develop early, Case IV, or when, as in Case II, disassociated sensory disturbances are absent, we are utterly at a loss to determine whether our patient is suffering from syringomyelia or amyotrophic lateral sclerosis. Time alone can aid us in arriving at a definite conclusion as to the diagnosis in these obscure cases of chronic atrophic paralysis.

290 WEST 137TH STREET.

REPORT OF A CASE OF RUPTURED TUBAL GESTATION SAC, WITH SECONDARY ATTACHMENT OF THE OVUM TO THE CÆCUM.*

By William H. Wells, M. D.,
Philadelphia.
Chief Visiting Gynæcologist to the Mount Sinai Hospital; Demonstrator of Clinical Obstetrics in the Jefferson Medical College, etc.

Secondary abdominal pregnancy is not of so common occurrence, but that the report of a case may prove of interest.

The patient, S. G., Russian, age twenty-eight years, was brought to the Mount Sinai Hospital on April 26th of the present year. At the time of admission the patient was in a state of collapse. Her history was as follows: Patient has had none of the diseases of childhood except measles. Her digestion has been poor all of her life, and she has had several attacks of gastritis. Menstruation first appeared at the age of twelve years and has continued regularly ever since, except during the time of her pregnancies, the flow being scant. She has had two children and one miscarriage, the latter, at three months' gestation, occurred five years ago. Since that time she has not been pregnant.

Present history: During the past three months the patient has complained of nausea and vomiting and severe abdominal pain. Her breasts were somewhat enlarged and painful. On April 25th she felt something suddenly "give way" in the abdomen, and felt weak and faint, so much so that she had to be assisted into her house, she being in the street at the time. Patient became steadily worse and about thirty hours afterward was admitted to the hospital.

Rupture of Gestation Sac; a, Site of Rupture; b, Tube; c, Ovary.

At the time of admission the patients' condition was one of extreme collapse, her pulse being 140 and scarcely perceptible, her temperature below normal. Inspection showed the abdomen to be distended somewhat, especially on the right side. Vaginal examination showed a large mass bulging into the right fornix and into the posterior *cul-de-sac*. The abdominal muscles were rigid.

On admission the patient, before I arrived, was given the usual restoratives, hypodermoclysis, and hypodermatic injections of strychnine, and was prepared for the operation. Immediately before and during the operation direct saline transfusion was given into a vein in the arm in the usual manner. On opening the abdomen a large quantity of dark red blood gushed out, and a considerable number of clots were found. The right Falloppian tube was much enlarged at a point about one third way from the fimbriated extremity, and it was here that the rupture had taken place, the point of rupture being on the side toward the free peritoneal cavity. From the site of rupture the blood was oozing freely. At first the ovum could not be found, but Dr. Staller, who was assisting me while examining the intestines, found the sac attached to the under surface of the cæcum. The sac was ruptured, but the attachment of the placenta to the bowel was quite firm. The peritoneal covering of the cæcum had been absorbed for a space corresponding in size to about three fourths the size of the placenta, and upon separating the latter, which was done rather hurriedly, a large number of small punctate hæmorrhages appeared on the surface of the cæcum at the point of attachment. The abdomen was quickly but thoroughly washed out with salt solution and the external surface of the gut inverted in such a manner as to bring the edges of the peritonæum together. Interrupted Lambert sutures were then passed through the peritonæum and superficially through the muscular coat of the gut, these sutures being of very fine silk. This had the desired effect of completely stopping the hæmorrhage. The tube which had previously been clamped was ligated and removed and the abdomen closed in the usual manner.

I attribute the extraordinary quickness of the patient's recovery from the profound degree of hæmorrhagic shock from which she was suffering on admission to the large quantity of salt solution which she received. In all she had between two and three quarts. The patient has made an uninterrupted recovery, and was discharged from the hospital on May 25th.

I was assisted in this operation by Dr. Max Staller, one of the general surgeons of the hospital, to whom my thanks are due.

333 Pine Street.

* Read at a meeting of the Obstetrical Society of Philadelphia, June 7, 1906.

THE USE OF THE COLD WIRE SNARE IN THE REMOVAL OF FAUCIAL TONSILS. A NEW TONSIL SNARE.*

By Henry Perkins Moseley, M. D.,
New York.
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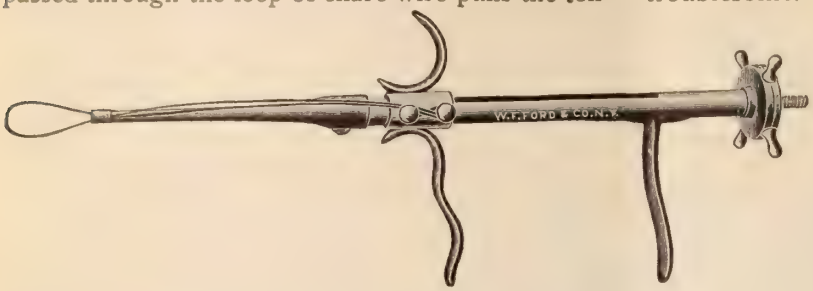
During the last three years I have been impressed by the fact that the cold wire snare is the most satisfactory instrument for the thorough removal of the faucial tonsils, and it is my purpose in this brief paper to bring forward this fact and to emphasize it to the best of my ability.

In talking with medical men and especially with those interested in laryngology, I have been repeatedly impressed that an idea is prevalent that the use of the snare is very slow, extremely painful, and difficult. I wish, if possible, to correct these impressions.

With a properly constructed instrument the tonsil can be removed nearly as quickly as with a tonsillotome. It is only slightly more painful. It requires no special technique. Any man who knows how to use a head mirror, and is accustomed to the ordinary manipulations of laryngology, can use the cold wire snare. It can be used satisfactorily either on a conscious patient or on one under an anæsthetic. The snare gets the tonsil out and does not merely slice off part of it, as is so often the case with the tonsillotome. The wire follows the line of least resistance, as it is drawn into the snare, so that, when the end of the instrument is held firmly in the supratonsillar fossa, the steel wire through its natural resiliency, buries itself firmly around the base of the tonsil, and the whole mass is removed. Hæmorrhage is never more than trifling, and it is often only sufficient to make the saliva blood streaked, even in the tough fibrous tonsils of adult patients. When the tonsils are flat, spread out, and receding behind the faucial pillars, the cold wire

* Read before the Section in Laryngology of the New York Academy of Medicine.

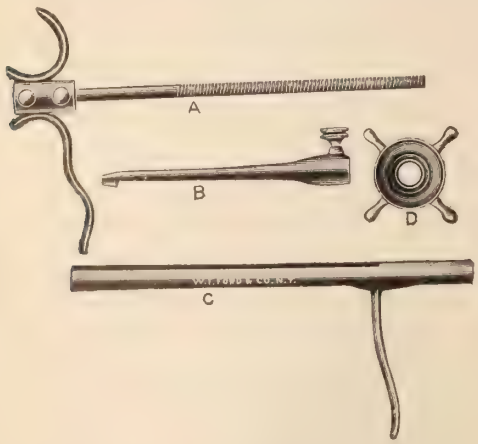
snare is by all means the most satisfactory instrument to use. After the anterior pillar has been freed, if it is adherent to the tonsil, a tenaculum passed through the loop of snare wire pulls the ton-



sil out, and the wire is then pulled taut around its base. It removes these flat tonsils more completely and quicker than any instrument I have ever seen. It is often unnecessary to use a tongue depressor in a conscious patient, the snare itself or the shank of the tenaculum serving that purpose. In an anæsthetized patient the snare is as easy of manipulation as any cutting instrument, but of course the illumination must be good. The tongue depressor is necessary in an anæsthetized patient, but as these are always children, in whom the retracted buried tonsils are seldom met with, the use of the tenaculum is not usually necessary. The lack of hæmorrhage enables one to remove the second tonsil quite as easily as the first. As soon as the wire is engaged it should be immediately drawn home. With an instrument constructed with a powerful grip this can usually be accomplished. If, however, the force of one's hand is not sufficient to cause the wire to cut completely through the mass, this is quickly done by a few turns of the écraseur wheel.

Most of the authorities on laryngology do not mention the cold wire snare in describing tonsillotomy. A few mention it as advisable in adults but dismiss it with the remark that it is very slow and painful. Dr. Bosworth in his work on the *Nose and Throat* describes his snare and its use, but that is about the only account in the text books.

Occasionally an article appears in the literature,



but it does not seem to me that most of us interested in the development of our branch of medicine have given to the cold wire snare the place it deserves. I have never seen diseased tonsils which cannot be removed better with it than with any other instrument.

To sum up:

1. The cold wire snare gets the tonsil out completely and easily.

2. The hæmorrhage is very slight and never troublesome.

There are several tonsil snares on the market, but most of them are difficult and annoying to wire or complicated in their action. I have had a snare made which has proved itself very satisfactory in its simplicity, strength, and ease of manipulation, and which I here present. It is substantially made of steel, but it is easy to wire and easy to clean. Usually if the wire is not bent too much, on pulling it through the eye, it may be pushed back, and another loop made of the same wire, thus obviating the necessity of rewiring the snare during an operation. No. 8 steel piano wire is the size usually employed.

In conclusion I wish to thank my friend, Dr. F. H. Bosworth, for suggestions and Ford & Co. for their careful carrying out of my ideas.

616 MADISON AVENUE.

THE POSSIBLE DISSEMINATION OF TUBERCLE BACILLI BY INSECTS.*

BY SAMUEL E. WEBER, D. V. M.,
Lancaster, Pa.

It is the opinion of investigators in both branches of medicine that the chief means of dissemination of tuberculosis is through the medium of inhalation of dried tuberculous sputum, which has become pulverized and, floating in the air, is carried by currents from its resting place, wherever deposited, in various ways, but commonly through the process of sweeping. This has been accepted by general opinion for some time and, with a few exceptions, remains so at present. The chief means by which the contagion is spread, then, has been accepted to be through the habit of indiscriminate spitting by persons suffering with consumption.

The well known experiments of Cornet under the direction of Koch were significant in the demonstration of this opinion. Flügge, however, after some experiments, took exception to this opinion and held that through the act of coughing the sputum was rendered in such a fine state of division, and carried by very slight currents of air for some time, and that the spread of tuberculosis was mainly due to the inhalation of the minute particles of floating sputum. In America Klebs by similar experiments has shown that during the act of coughing minute particles of sputum frequently containing tubercle bacilli are thrown out. Dr. Curry, of Boston, conducted, at the suggestion of Klebs, a series of twelve experiments in that many cases of tuberculosis with the object of determining the degree of danger from this source. The mouth fluid of the patients were examined, and small numbers of tubercle bacilli were found at some time during the day in nine of the twelve cases, and in three cases many bacilli were found in almost every examination. They were found most numerous in the early morning. Glass plates were suspended from one to three feet before these patients. Six of the patients who had no loud cough were in the habit of keeping their lips closed

* Read before the forty-third annual meeting of the American Veterinary Medical Association at New Haven, Conn., August 21 to 24, 1906.

while coughing, while the six patients who gave positive results all had a loud cough and kept their mouths open during coughing. Curry concludes from his experiments that Flügge has exaggerated this source of danger, and points out that these small particles of sputum become dry and act as so much dried infectious sputum.

In the various methods for the collection of sputum of bovine tuberculosis that of Pols, namely the insertion of a cannula into the trachea for the collection of mucus, proved unsatisfactory, as well as Nocards suggestion of the injection of veratrine or eserine in order to increase the bronchial secretion. The use of a swab by Grieffer gave better results.

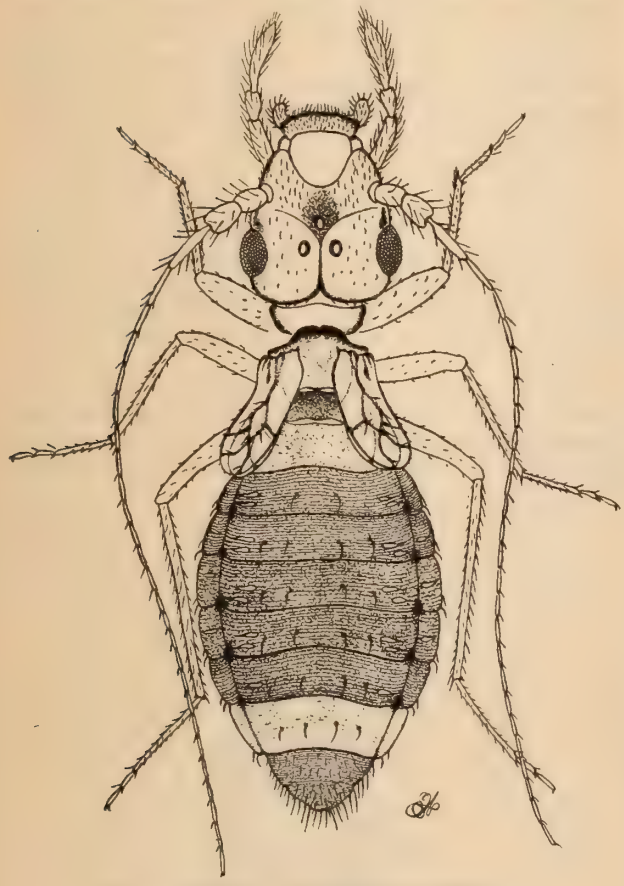


FIG. 1.—Ocelloria gravonymphia (Weber).

In a series of studies made by Dr. Ravanel upon bovine tuberculosis it was found that cows also project small particles of sputa during the act of coughing, which contains tubercle bacilli. These experiments were made by means of a nose bag, near the bottom of which was placed a shelf of soft pine wood upon which the smallest particles ejected by the cow during the act of coughing adhered, while the more fluid portion were absorbed by the wood; the solid particles could be detected by a mignifying glass upon the wood. By this means he was able to detect tubercle bacilli in the bronchial secretion in every tuberculous cow under observation for this purpose. The small particles of sputa were "almost always found exceedingly rich in tubercle bacilli." In a period of some forty-three days five tubercle colonies, varying greatly in number, were detected twenty times in these little particles coughed up by cows which were examined thirty-four times. Mucus from two cases was inoculated into the peritoneal cavity of forty-five guinea pigs, twenty-three of which died within a few days from peritonitis. Of the remaining twenty-two eleven became tuberculous. Fourteen guinea pigs were exposed directly to the breath of cows in whose sputum tubercle bacilli had been found, but the post mortem revealed no evidence of tuberculosis. The cows used for this experiment were all marked cases of tuberculosis. This observation has practically demonstrated that cows like man in the act of coughing project small particles of sputum into the air which may float for a certain time. It also dispelled the widely accepted opinion that cows swallow all of their sputum and do not project it to any extent.

The danger to man of infection through the means of atomized sputum in bovine tuberculosis is of course confined to those who are in constant contact with the animals, and it may be considered obvious that the particles are a source of danger to the other animals in the same stable.

In the review from Ravenel[1] we have a demonstration that cows also will project through coughing sputum containing tubercle bacilli in more or less numerous proportions. Now, whether there are larger or small particles aside from the smaller floating particles, all of them may become adherent to, or lodge on, any part of the surroundings of a tuberculous animal.

Before passing to the dissemination of tubercle bacilli by insects ingesting them from these sources through the possible ingestion on the part of animals and man, of both the insect and bacillus, let us briefly review the principal observations on that avenue of infection. The investigations in that line of tuberculous infection recently made by Dr. E. C. Schroeder and Mr. M. E. Cotton[2] on hogs and guinea pigs, seems to be of particular significance in the bearing upon the question of how the tubercle bacillus finds lodgment in the lungs. Preparations of tubercle cultures were fed in good milk from healthy cows to fifty-four guinea pigs, ten of which became infected. These ten were fed with the most virulent of the three preparations used. The infection of nearly one-fifth of the animals fed with infected milk shows the susceptibility of the guinea pig's digestive tract, it is more readily traversed by tubercle bacilli than that of certain other animals, including man. While Schroeder and Cotton from their valuable observations are inclined to believe in this theory, they nevertheless regard infection by way of the alimentary canal in man as of very frequent occurrence, and seem to look upon aerial infection as uncommon. They say:

> Respired infectious material comes to rest in the lung on the mucous surface of the bronchial tubes and is then still located on what may be regarded as one of the exterior surfaces of the body. In this location, because of the irritation produced by the material with which it gains entrance, dust, etc., it has an excellent chance to become enveloped with mucous secretions and to be coughed up, and either swallowed or expectorated. This consideration . . . seems to show that tuberculosis due to bacilli which

[1] The Dissemination of Tubercle Bacilli by Cows in Coughing a Possible Source of Contagion. *The Journal of Comparative Medicine and Veterinary Archives*, xxii, 1, p. 15, January, 1901.

[2] Experiments with Milk Artificially Infected with Tubercle Bacilli. *Bulletin No. 86, Bureau of Animal Industry of the Department of Agriculture.*

enter the lung with the breathed air is an uncommon affection.

The authors give good reasons for the comparative frequency with which the lungs suffer, no matter what the point of entrance may have been. The chief of this is the fact that in the pulmonary capil-

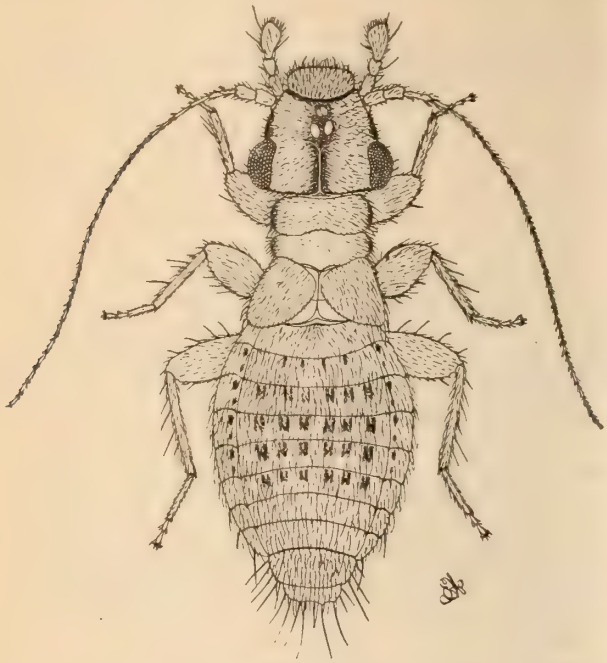


FIG. 2.—Clothilla ocellorla (Weber).

laries the bacilli received in the circulation are arrested.

Evidence is growing in both clinical and experimental observations of the frequency of the pulmonary localization of tuberculous infection, which is not due to inhalation of the bacillus. H. Vallée from feeding experiments upon calves concluded that ingestion was the most possible means of infection, which led to tuberculosis of the bronchial glands, and found that the tubercle bacillus was able to penetrate the intestinal wall without leaving any trace by lesion in the intestinal mucosa or in the mesenteric glands. Von Behring's contention that tuberculosis in the majority of cases is not contracted by inhalation is further borne out by the feeding experiments of Calmette and Guérin upon young and adult goats. In the young animals they always found mesenteric lesions precedent to the pulmonary affection, while in the adults no traces of the passage of the bacilli were found in their passage from the intestine, or along the lymph channels, and the pulmonary lesion was apparently primary. After post mortem work extending over a decade or more at a knacker's establishment, the evidence of tuberculous lesions in animals led me to believe that, of all the methods of infection, ingestion was the one most common, this being more particularly true in hogs. Recent observations show that tuberculosis in that animal is on the increase in the western States, which is possibly due to the hogs being fed on creamery products. It has been shown in calves fed upon milk from tuberculous cows, that when pulmonary lesions occur they are secondary to glandular infection. Vallée in his recent communication to the Paris Academy of Science emphasizes this point as incontestable in his opinion and maintains that the lesions in the tracheobronchial glands following feeding experiments were the result of infection by way of the alimentary canal. It is also maintained by many good authorities that infantile tuberculous disease of the mesenteric and bronchial glands is the constant result of infection through the digestive tract. Not only in the infant, but in the adult as well, pulmonary infection may occur with Koch's bacilli coming through the digestive canal without leaving any appreciable lesions in the mesenteric glands. And von Behring even asserts that many cases of pulmonary consumption in the adult may result from the reawakening of old tuberculous lesions in the bronchial glands as a sequela of childhood infection; the infection having been received primarily through the digestive passages and lurking since then unattended by any changes in the mesenteric glands.

Having touched upon the aerial and ingestive means of egress of the tubercle bacillus to the system, let us now follow the ingestion phase in the

Transmission of tuberculosis and see what means there are by which the bacillus may be disseminated after it has become dried on the manger or other parts in the stable where tuberculous animals were present.

The insect agency in the dissemination of tubercle bacilli from this source onward has not been suggested or demonstrated. For a number of years my attention was attracted to the insects closely asso-

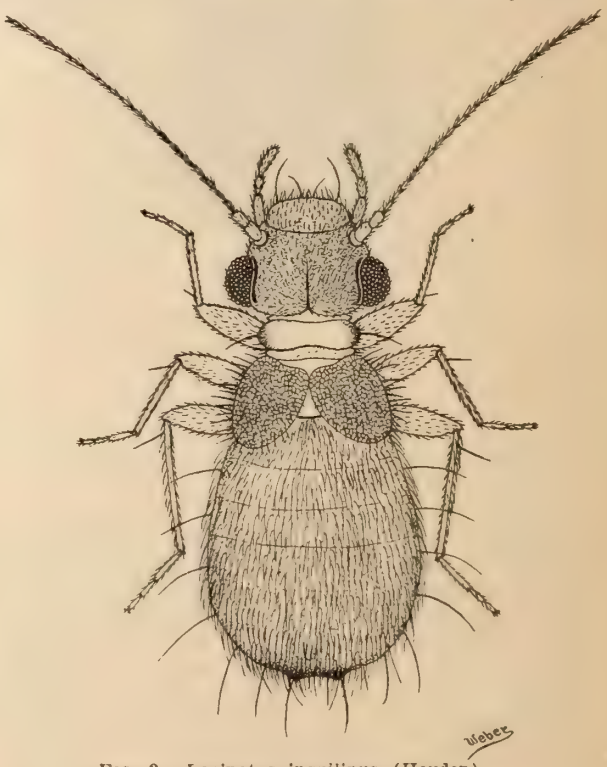


FIG. 3.—Lepinotus inquilinus (Heyden).

ciated in the surroundings of animals and man, and the strong suspicions against a certain insect family led me to a series of studies, having for their object the insect means in the transmission of bacteria among our domestic animals.

These investigations were directed to small forms

embraced in the Linnæan order of Neuroptera which are known as the psocidæ. These much neglected and little known insects are found in abundance in barns and other outbuildings where animals are housed. On account of their habits it is obvious that they are the intermediate hosts of some of the protozoa and certain other parasites of the domestic animals. This forms one type of disease transmission. The other type is that in which the insect serves as a carrier only, and is the one which I suggest in the dissemination of tubercle bacilli. It is by the ingestion of contaminated material by these insects that the tubercle bacilli may be transmitted to divers places upon the food and other material coming in contact with all kinds of animals, as well as on the food and wearing apparels of every description of man.

The psocidæ, as the term aimplies, are chewing insects which fact differentiates them from the suc-

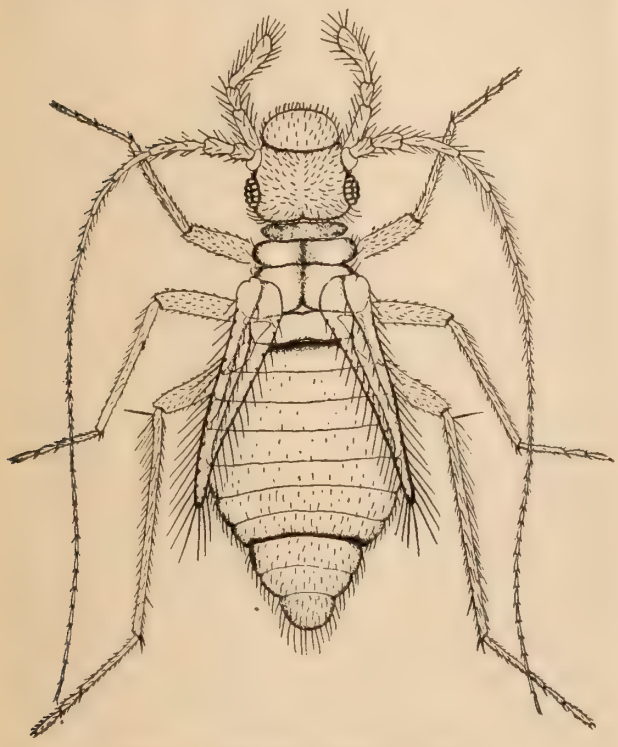


FIG. 4.—Dorypteryx pallida? (Aaron).

torial insects, and they fancy farinaceous food, for which reason they are found about the feed chests, granaries, and feed troughs or mangers of animals.

It is to the atropedæ, a wingless subdivision of the psocidæ, or rather those species with rudimentary wings, which do not fly, that these researches are directed. To my knowledge there are no records, that they have been studied in connection with pathology. They have been overlooked, principally I may say, by reason of their smaller size and the tedious work required for their investigation. The atropedæ range in size from less than one millimetre to three millimetres. It is those more minute forms which inhabit the garnered treasures of man and the domestic animals, that are eaten unsuspectingly by both in very great numbers. This fact indicates the importance of knowing something about their life history and habits.

There have been times when these interesting little creatures created consternation in communities and among the occupants of houses whence they have been introduced in various ways from some outbuilding, where they were found in great numbers. An instance of peculiar excitement in recent years is the *Pennsylvania Louse Story* of 1893.[3] This occurred in the eastern section of the State, and the so called plague of lice led people to vacate houses, close stores, churches, and even to tear down and rebuild parts of houses. It is a record based on lack of information. While it was true that the London *Standard* succeeded in producing "a paragraph based upon New York dispatches which were calculated to produce a veritable panic," there was nevertheless some truth to be recorded in the occurrence referred to in that mysterious note. These insects have retained their popularity for centuries through their association by various writers with the so called "death watch," a relic of superstition and ignorance.

As an example in the transmission in bacteria, let us watch the manger of a tuberculous cow depositing sputum containing tubercle bacilli mixed with meal, and drying on the woodwork about her stall. Now if a swarm of these insects comes along, what happenes? They are voracious feeders, and in a remarkably short time will chew up and fill their stomachs with the crusted admixture of saliva, sputa, and meal attached to the troughs and other surroundings, as the case may be. These insects are very shy and run very rapidly if disturbed, and may be followed to the farthest corner of the barn, or even to the haymow and granary above it in a very few minutes. They are extremely delicate and may be easily crushed which occurs in the hay and other food. By that means the contents of their stomachs may be conveyed to other animals. If such ingestion of contaminated material happens to be about the time of hibernation, the danger is much increased, for then we find them in the hay by myriads and also in straw. At this period they may also be found in the stem of timothy and in clover heads, where they are protected from loosing their resting place by handling of the hay. I have found the species of the genus clothilla (Westwood) (Fig. 2) and *Lepinotus inquilinus* (Hayden) (Fig. 3) common in all kinds of buildings, but less abundant in the stables of cities than in the country barn.

In a series of microscopical examinations of the contents of the stomach and alimentary canal of some of the species, my suspicions of years were verified by the finding of a specimen *Clothilla scelloria* (Weber) (Fig. 2) harboring tubercle bacilli. What might be theoretically expected after considering the habits of the insect was thus practically demonstrated. The discovery was made only after patient search through some three thousand specimens which were taken from the mangers, feed chests, and other surroundings, where tuberculosis was present in cows.

The importance of finding the tubercle bacilli even after the examination of millions instead of thousands, may only be appreciated by an adequate idea of the abundance of these insects amid these surroundings of the domestic animals. They are remarkably prevalent in the hay and grain during the

[3] The Pennsylvania Louse Story Abroad. *Insect Life*, vi, 1, p. 48. 1893.

winter months, for as stated, it is there where they principally concentrate for hibernation. I have held a single page of an ordinary sized newspaper under the hay overhanging the partition of a mow, and with a few taps received upwards of two thousand specimens of the various species in question.

The ingested material of a *Clothilla ocelloria* in which tubercle bacilli had been demonstrated were injected into the peritoneal cavity of three guinea pigs. Of these, one died from peritonitis, another proved negative, and the third developed marked tuberculous lesions, principally on the mesenteric and the parietal peritonæum, the latter presenting numerous tubercles. Three control animals were injected at the same time with the contents of a *Clothilla ocelloria* in which tubercle bacilli had not been demonstrated. The post mortem three weeks later revealed no evidence of tuberculosis.

We have touched the principal points of importance which these insects furnish in the barn, let us now consider briefly the the atropedæ in the house. They may be found on starched goods in drawers, in bed clothing, generally in spare rooms, on books and papers, upon the walls and floors, on window curtains, and upon all kinds of clothing. The nymphs and mature forms of these species I have found on eatables, such as potatoes, onions, apples, pears, dried corn, beans, strawberries, raspberries, blackberries, and tomatoes. In fact, they may be found on anything which has been in a vehicle stored in some out building in the form of a basket, box, bag, or measure of capacity. Such articles often remain undisturbed until the season comes along, and the products mentioned are to be put on the market. It is at such a time that I have often found these vehicles to contain the insects in abundance. This is the chief means through which they become attached to the food for human consumption. A further source of danger through which they may gain access to the food of man is from the granary conveyed through the wheat or any other grain that may be ground for flour. The process of cooking, however, obviates to a certain extent this means of dissemination.

But the food is not the only means through which these insects may convey tubercle bacilli to man, for their habits prove that they are adapted to carry the contagion, directly to wearing apparels from contaminated sources where they have been feeding. And furthermore as is the case with a species the *Doxypterix pallida* (Aaron) (Fig. 4) they will alight directly upon a person.

As stated, they are voracious feeders, and when taken from any source where the food seemed plenty their stomachs were invariably well filled. If placed in a bottle or under a cover glass there will be deposited in a comparatively short time a remarkable quantity of fœtal matter. Of the numerous places where the closely associated species *Clothilla pulsatoria* and *ocelloria* and *Lepinotus inquilinus* are found, their best feeding places are in barns where there is plenty of hay and grain. In the feed troughs, where chop has become admixed with the issue from the respiratory tract of cattle and becomes crusted, I have seen them gnawing in some instances by the thousands.

If there is a case of tuberculosis, where the bacilli find their way into the sputa and are spread out ever the surroundings mentioned, there can be nothing to prevent the insect which feeds on such matter to become ingested with tubercle bacilli, and, as pointed out, will run away quickly and often get directly on the food and clothing of man in numerous ways. Thus they may be eaten or found on clothing of almost every description, which perchance have become contaminated by their deposits of fœtal matter on the same.

The dissemination of bacteria by the agency of the psocidæ is of equal importance if not more so than through that of flies. Comparatively speaking the former may be said to be more dangerous than the latter, since they are with us longer than the flies, and in mild winters retain their activity, as is the case with *Lepinotus inquilinus*. The psocids are found where flies cannot enter, such as goods in drawers, on shelves, in store rooms, and other like places. I wore a straw hat for three days and found that after that time it contained one hundred and sixty specimens of *Clothilla ocelloria,* which exemplifies how wearing apparels may be run over by psocidæ, and in many instances leave the garment again without the knowledge of the wearer.

The discovery of tubercle bacilli in one of the three thousand examinations was no doubt a fortuitous occurrence, for it might be looked upon as alarming if such would have been the case, even after the examination of millions. Suffice to say that *Clothilla ocelloria* (Weber) is an insect agency in the transmission of tuberculosis from one animal to another and possibly to man.

The experiments warrant my believing that the tubercle bacilli after being expelled from the respiratory tract of a cow through the act of coughing may be disseminated by the insects mentioned through the means demonstrated. The species of atropedæ most closely associated with *Clothilla ocelloria* are *Clothilla pulsatoria* and *Lepinotus inquilinus,* which must be recognized with the same suspicion as a source of danger. There are other species of equal importance or even more so, indeed I have looked upon the common house psocid *Cœcilus pedicularis* (Linné) as one of the most dangerous species, for it feeds in the barn in the places with the other insects mentioned, both in nymph and adult life, and swarms in houses during the fall. It is found on many kinds of fruit, principally on the apple for which it seems to have special fancy. It hides about the stem and eye of the fruit. The psocidæ are a family of insects which open a wide field for study. The vital importance of the subject demands a careful consideration.

It only remains for me to say that I trust this preliminary essay may enlist observers to turn their attention in this direction.

ARTIFICIAL CYCLOPLEGIA IN ERRORS OF REFRACTION.

By MARIE LOUISE BENOIT, M. D.,
New York.

The art of accurately prescribing glasses requires from the oculist the solution of many problems, and all the means which he has at his disposal must be put in practice in order to arrive at a definite conclusion. When the purely subjective methods are used the correction of refractive errors is naturally

empirical. Retinoscopy and ophthalmometry give the examination a scientific basis and increase its exactness and efficacy, because these methods, being much easier to carry out than the direct methods of examining with the ophthalmoscope, give to all physicians alike advantages usually reserved only to those who have had a large experience with the ophthalmoscope. The methods just mentioned give the observer the entire control of his patient, so that he does not have to rely upon his answers, which are often contradictory and sometimes very trying to one's patience. Retinoscopy without any doubt has given birth to a new problem, that of finding an agent which, paralyzing the accommodation in a complete manner, should put the eye in a state of static refraction, and prevent the grave errors that a too active ciliary muscle implies, lessening or concealing hypermetropia, increasing myopia, or changing the degree and direction of astigmatism present. The question of the indications and choice of cycloplegics then enters a new field, and many investigations have taken place in order to determine the comparative action of the different agents upon the diameter of the pupil and accommodation.

Although we have not at present the ideal agent to completely paralyze the accommodation which may have but little action or none at all on the pupil, the advantages and disadvantages in the use of different cycloplegics have been pretty well investigated, and quite recently Doctor Uribe y. Troncoso in *Anales de Oftalmologia* (May 1st) has presented the following classification of cycloplegics with interesting statistical data in tables, giving a résumé of the action of each of the drugs used.

Troncoso divides cycloplegics into three classes, according to the duration of their effect: 1, Cycloplegics whose effect is slow, atropine, daturine; 2, cycloplegics whose effect passes with much rapidity, hyoscine; 3, cycloplegics whose effect is very short, scopolamine, homatropine. The action of these agents is variable according to the doses used and the number of instillations. As a general rule, the strong cycloplegics of the first class are used in doses of 3 grammes of water for 0.01 gr. of the drug, 3 drops in the eye during the day. Of the second class, they are used in doses of 3 grammes of water to 0.01 gr. of the drug instilled in the eye in the same way as those of first class. The cycloplegics of the third class, especially scopolomine (hydrobromide), are used in doses of 0.01 in 3 gr. of water with instillations of one drop at intervals of forty-five minutes. Homatropine is used in cumulative doses in proportion of 5 to 10 centigrammes for 3 grammes of water, instilling a drop every ten or fifteen minutes for an hour and a half. In forty-five minutes the drug has about reached its maximum effect, and we can then proceed to the examination. In the following table is appended a résumé of the action of each of these drugs:

Drug.	Paralysis accomplished completely in	Effect begins to wear off on	Effect of drug completely disappears on
Atropine	2 hours.	4th day.	15th day.
Daturine	36 minutes.	3d day.	10th day.
Hyoscyamine	30 minutes.	3d day.	6th to 8th day.
Duboisine	30 minutes.	2d day.	5th to 8th day.
Scopolamine	45 minutes.	12 hours.	5th to 6th day.
Homatropine, in cumulative doses	2 hours.	12 hours.	2 days.

Uribe y Troncoso

All agents which paralyze the accommodation by this mere fact relieve the congestion and irritation of the chorioid and retina, present in many cases of ametropia, and put the eye in a state of physiological rest. Moreover, their mydriatic effect allows a most complete examination of the interior of the eye, which is very useful in treating the affections of the macula or peripheral disturbances, but, on the other hand, mydriatics have the inconvenience of giving the observer a zone of the cornea much larger than is necessary for vision and which has been, for this very reason, called the visual field.

The indications for cycloplegics in general to determine refractive errors are very much controverted. A few American writers advise the use of cycloplegics in all cases which need glasses. Others, on the contrary, as well in this country as in Europe and in Latin American countries determine their use only in selected cases, in which ordinary methods have failed, or else when there exists some doubt on the true static refraction of the patient. In examining the eyes of children the use of cycloplegics is *de rigueur,* also in cases of weak astigmatism and mixed cases, and those in which a spasm of accommodation is suspected. In high degrees of myopia rarely is it necessary to use cycloplegics, but such is not the case in lighter grades of myopia, especially if there is astigmatism in combination. In hypermetropia some American oculists advise always making the total correction, and in those cases it is indispensable to use cycloplegics.

Dr. Troncoso is of the opinion that this practice presents many difficulties, especially in a country like Mexico, where there exists a great prejudice against wearing glasses, and he mentions how very hard it is to make the patient understand the necessity of wearing glasses which not only do not improve his vision but sometimes make it worse. He believes that a complete education, not only of the public, but of the physician as well, is necessary to convince them that the use of glasses is before and above all a therapeutical means which will tend to avoid a progressive ametropia, and to cure morbid conditions, and that the improvement of vision obtained with glasses is not and cannot be their only object. In order to avoid the errors that prescriptions of too strong glasses in hypermetropia entail, he advises making the correction gradually, being satisfied to correct the manifest hypermetropia.

With this practice, it is seldom necessary to use cycloplegics in adults except when there is astigmatism associated. In children and especially in the treatment of strabismus, the use of cycloplegics is absolutely necessary. In mixed astigmatism, the paralysis of accommodation is necessary in a large number of cases in order to avoid overcorrecting a myopic or hypermetropic meridian. The application of the formulæ rests chiefly on the individual appreciation of the oculists, and it would be impossible to subject them to fixed rules.

As no statistical figures on this subject have ever been compiled, since different authors affirm that they have used cycloplegics in a large number of cases, or else in very few cases, I believe Dr. Troncoso's tables will prove especially interesting. He presents one thousand cases from his private practice in which refraction has been studied with the utmost care, using first the ophthalmometer and then

retinoscopy, followed by a thorough objective examination. The results obtained are appended in the following table:

Errors of refraction.	Number of cases.	Cyclo-plegic used in	No cyclo-plegic used in	Presby-opia pres-ent in
Myopia (pure)	55	6	49	8
Simple myopic astigmatism	69	16	53	9
Compound myopic astigmatism	337	56	281	44
Hypermetropia (pure)	154	12	142	49
Simple hypermetropia astigmatism	105	20	86	26
Compound hypermetropia astigmatism	209	47	162	74
Mixed astigmatism	57	22	35	3
Presbyopia (pure)	11	..	...	..
Irregular astigmatism	3	..	...	..
Totals	1,000	179	808	213

Uribe y Troncoso.

In Troncoso's cases cycloplegics were used in 17.9 per cent. They were not used in 80.8 per cent. (neither in cases of presbyopia, pure and simple). The conditions in which cycloplegics were used are as follows:

	Per cent.
Pure myopia, in	10.90
Astigmatism, myopic, simple, in	23.19
Astigmatism, myopic, compound, in	16.06
Hypermetropia, pure, in	7.07
Astigmatism, hypermetropia, simple, in	19.00
Astigmatism hypermetropia, compound, in	22.04
Astigmatism, mixed, in	38.05

As we see, the highest proportion corresponds to the mixed astigmatism in which cycloplegics were used in 38.5 per cent. of the cases, then in simple myopic astigmatism with 23.19 per cent., compound hypermetropic astigmatism with 22.4 per cent., the simple hypermetropic astigmatism with 19 per cent., and compound myopic astigmatism with 16 per cent. In myopia (pure and simple) they were used in 10.90 per cent. of the cases, while in hypermetropia cycloplegics were used in 7 per cent. There is nothing strange about the last result if we bear in mind that almost always a manifest hypermetropia corrects itself. Presbyopia was present in 21.3 per cent. of all the cases examined, that is to say, in 203, but out of this number, those in which presbyopia existed without the normal refraction or emmetropia were only eleven. Perhaps this small number will be a surprise at first sight, but we must bear in mind that many of those patients who came up for examination only needed glasses for near vision, and only after a careful examination the existence of hypermetropia or hypermetropic astigmatism was discovered.

The choice of the cycloplegic to be employed has been much discussed, but all seem to pretty well agree upon this point. Of cycloplegics of the first class mentioned, the only one used is atropine in the doses already referred to, making three instillations a day in the upper part of the cornea, holding the eyelids open and the lower one somewhat everted, pressing with the index finger the inferior lacrymal canal in order to prevent atropine from getting through the nasal duct in the nostrils, and by absorption producing toxic symptoms. In children also the use of atropine for five or six days is absolutely necessary to paralyze accommodation. Their loss of time from school should not be taken into account. In adults until forty-five years old, the most used of the cycloplegics is homatropine in cumulative doses, which has the advantage of paralyzing the accommodation for forty-eight hours only. Its results, however, are not absolutely satisfactory in patients less than twenty-five years old and who may suffer from ocular fatigue due to overwork. In these cases one may use hyoscyamine, recommended by Risley, the effects of which last less time than those of atropine. This drug has the inconvenience, however, of varying in its effects, in which case we should prescribe the neutral salt, the solution to be filtered through paper. Scopolamine is a very light cycloplegic which can be used advantageously in a few cases, but it has the inconvenience of sometimes producing toxic symptoms, vertigo, dryness of the throat, etc. Duboisine presents the same disadvantages.

In the choice of a cycloplegic we should, besides, bear in mind the age, the occupation of the patient, and the form of ametropia which he suffers. Business and professional men who are very busy cannot give much time to have their eyes fitted. In those cases one may use the cycloplegics mentioned in the third class, especially homatropine, the effects of which can be neutralized by eserine. In an urgent case homatropine may be instilled at frequent intervals in doses of one drop every five minutes for an hour and a half, and in forty minutes we may proceed to the examination.

Myopic eyes which have wide pupils, as a rule, do not suffer much inconvenience from the use of mydriatics, therefore the accommodation almost always is small and the vision is not perturbed as in the hyperopes. In myopia cycloplegics have, besides, the advantage of putting the internal membranes of the eyes at rest, almost always a necessary procedure. In hypermetropes the effects of the paralysis of accommodation may be temporarily counterbalanced in selected cases by the use of a spheric lens of three to four dioptres, which makes reading easy.

Troncoso does not approve of the practice of putting a cycloplegic in one eye only, and allowing the patient to keep on his work with the other eye, because this procedure may bring on bad symptoms, such as headache, asthenopia, and sometimes diplopia.

After the age of forty, it is seldom necessary to use cycloplegics for determining refraction. This rule, no doubt, has many exceptions and Troncoso has often found it necessary to use homatropine in cases of irregular contraction of the ciliary muscle, also in the case of asthenopic eyes, subjected to much prolonged work which rendered the exact determination an absolute impossibility.

He particularly insists that no cycloplegic be used in threatened or actual glaucoma. In elderly persons this recommendation must be carefully borne in mind, and it should also be investigated if there is or is not a dilated pupil in the case, if the intraocular tension is normal, and in all doubtful cases one should never fail to ascertain what the visual field is.

Besides the cycloplegics mentioned by Troncoso, some writers advise the use of hyoscine, or cocaine, alone or in combination with homatropine. The first has the inconvenience of producing toxic symptoms, and the last named is almost insignificant and not to be taken into account. In combination with homatropine, cocaine has the inconvenience of altering the corneal epithelium and making the examination very difficult as a result.

The results obtained with cycloplegics should not

be considered sufficient for prescribing glasses because the mydriasis inherent to the cycloplegic effect may be the cause why we see corneal zones which do not take part in the vision, and may lead to erroneous results, as demonstrated by Tscherning, so that even in the normal diameter of the pupil there may exist some corneal zones of very different refractive power. If we use cycloplegics after the test with the retinoscope and the subjective examination, it is well to compare results obtained before and during the cycloplegic state. All of these data have a bearing on one another in prescribing appropriate glasses. In particularly doubtful cases, it will be always necessary to repeat the subjective examination after the cycloplegic effect has passed away, in order to be absolutely certain of the glasses we should order.

66 West Tenth Street.

Our Readers' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LV.—How do you treat acute articular rheumatism? (Closed October 15, 1906)

LVI.—How do you treat sciatica? (Answers due not later than November 15, 1906.)

LVII.—How do you use mercury in syphilis? (Answers due not later than December 15, 1906.)

Whoever answers one of these questions in the manner most satisfactory to the editors and their advisors will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short; if practicable, no one answer to contain more than six hundred words.*

All persons will be entitled to compete under the regulations laid down by the postal authorities. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the Journal.

The prize of $25 for the best essay submitted in answer to question LIV, has been awarded to Dr. Heber Butts, of the Navy, whose article appeared on page 846.

PRIZE QUESTION NO. LIV.

THE TREATMENT OF SPASMODIC CROUP.

(Concluded from page 848.)

Dr. Isaac W. Brewer, of Fort Huachuca, Arizona, says:

There is probably no disease of childhood, which causes so much alarm to the family as does spasmodic croup. The child, who may have been a little hoarse during the day, suddenly awakes towards midnight with symptoms of suffocation. In severe cases the face is congested and may become cyanosed, while the child struggles for breath. After a mighty effort the spasm relaxes, and the air rushes into the lungs with that crowing sound that is characteristic of the disease. An inspection of the throat of the child at this time will show considerable swelling and congestion of the larynx, especially below the glottis.

In the treatment of the case our aim should be: First, to relieve the spasm of the throat; second, to prevent its recurrence; third, to build up the child and cure the chronic condition of the nose which so frequently predisposes to the disease.

First, treatment of the immediate attack. In the majority of cases the physician arrives after the serious symptoms are passed. The most effective way of relieving the spasm is to cause vomiting. This may be done by inserting the finger into the throat or by the administration of an emetic such as a teaspoonful of the syrup of ipecac to a child of two years. Antimony in doses of one one hundredth of a grain every fifteen minutes, until vomiting occurs is a favorite emetic with many physicians. Unless the stomach be full it is best to cause vomiting without the use of an emetic. Often the spasm may be relieved by putting the child in a bath at the temperature of 100° F. for ten minutes. The effect of the bath is increased by the addition of one or two teaspoonfuls of mustard. The air in the room must be made very moist, either by generating steam from a kettle or by slaking lime in a basin at the bedside. If a croup kettle is available it should be used. Its value is greatly increased by adding to the water a teaspoonful of either oil of tar, oil of turpentine, or tincture of benzoin, or a few drops of creosote. Vaporizing menthol in the room is often of benefit. Hot fomentations to the neck are of great benefit, but occasionally there are cases where the dyspnœa is so great that it is necessary to give a few whiffs of chloroform in order to relax the spasm. Amyl nitrite inhalations are also of benefit in such cases.

Second, to prevent the recurrence. To prevent the immediate recurrence of the attack there is no drug like antipyrine. It may be given in doses of two grains to a child of two years, and repeated in two hours if necessary. When this drug is used the heart must be watched very carefully. On the following day the child must be kept in a well ventilated and sunny room with a temperature about 72° F. Stimulating expectorants, such as ammonium chloride or carbonate, should be given. If the child is of a nervous disposition potassium bromide is called for. The nose and throat should be cleansed with Dobell's solution, followed by a spray of liquid petrolatum, to which has been added one per cent. of menthol or thymol. The bowels must be kept open by broken doses of calomel if necessary.

Third. After the attack is over the patient must be built up by such tonics as the syrup of the iron iodide, iron quinine, and strychnine, or cod liver oil. The neck and shoulders must be sponged daily with cold water. The playroom and bedroom should be well ventilated and kept at about the temperature of 72° F. A large portion of the day must be spent in the open air, preferably in a sunny park. If there be enlarged tonsils or adenoids they must be removed. The nasal cavity must receive appropriate treatment. These children are often subject to "colds," and are much benefited by a sea voyage or a trip to the south during the winter and early spring.

Dr. Charles Floyd Burrows, of Syracuse, remarks:

Most children are subject to croup during the first four or five years of life. Some are more predisposed to it than others, yet it occurs frequently in the robust and rugged as well as in the cachectic and weak. It is often associated with enlarged tonsils and adenoids, or with an elongated uvala.

Spasmodic croup is due to laryngeal spasm connected with a mild inflammatory or congested condition of the laryngeal mucosa. The causative factor in most cases is an exposure to cold, or indigestion and constipation. It occurs usually at night, tends to recur, is intensely alarming to an uninitiated parent, and is seldom, if ever, fatal. Its treatment consists in promptly relieving the acute symptoms; the prevention of recurring attacks and prophylaxis.

When summoned to attend a case of spasmodic croup my first effort is to relieve the spasm of the laryngeal muscles. I at once administer from one to two teaspoonfuls of syrup of ipecac in warm water to produce hasty emesis. This acts in two ways: The nausea and vomiting tending to relax the spasm directly; and the thorough emptying of the stomach relieving the indigestion when present. When a second dose of the ipecac fails to produce emesis I use hypodermatically from 1/120 to 1/40 grain of apomorphine, though this is a procedure very seldom necessary, as the ipecac in warm water usually acts promptly. As soon as vomiting ceases I anoint the external surface of the larynx, neck, and upper portion of the chest with oil or lard and apply steamy fomentations, poultices, or hot packs, whichever may be most readily obtainable. These are of great assistance in allaying spasms and relieving the catarrhal condition in the larynx. As soon as this is done I improvise a croup tent by putting a sheet on supports in such a way as to inclose the crib or bed of the child. When summoned to a case of croup I always take my croup kettle. If I should be without it, I send and procure one at once. This I immediately fill and start going under the tent—adding to the contents of the boiler a drachm or two of compound tincture benzoin, and allow the child to inhale the steam until relief is complete. These procedures, rapidly executed, will relieve the acute spasm of the muscles, quiet the child, and allay the fears of parents and friends. In the more stubborn cases where these measures fail the gentle inhalation of a few drops of chloroform will often add the finishing touch of relief. In those, however, where all medicinal measures seem unavailing the passage of an intubation tube may be necessary, though I have never had to resort to this procedure.

Spasmodic croup tends to recur for several successive nights, or even to produce one or more succeeding attacks the same night. Therefore, as soon as the child's stomach quiets from the nausea and vomiting I give calomel gr. 0.1 at short intervals until ten tablets are taken, following in the morning with a small dose of a purgative water. In infants castor oil, 2 to 4 drachms, may be used instead.

The following prescription is valuable in further preventing a recurrence, and is always administered during the succeeding twenty-four hours, or until danger of further attacks are over.

℞ Antipyrine, } .....āā gr. x;
Salol, }
Caffeine, ...gr. ij.
M. Divide in chart. No. X.
Sig.: One half to one powder every two hours.

I also prescribe, in those cases caused by exposure to cold, the following expectorant mixture, which is pleasant to take, and allays cough and laryngeal inflammation and irritation:

℞ Antimonii et potassii tartrat,.....gr. j;
Tinct. opii et ipecac., } .....āā ʒj;
Ammon. chlorid., }
Pulv. ext. glycyrrhiz.,.....ʒij;
Glycerini pur., ...℥ss;
Aquæ dest., ...q. s. ad ℥ij.

M. Sig.: Shake well and give from five to thirty drops according to age every two to four hours.

A very light diet should also be prescribed and the child kept indoors and away from cold and drafts for several days. On the night after an attack, where there is the least sign of croupiness, the croup kettle should be resorted to, the throat anointed with warm oil or lard, and the hot fomentations repeated. Recurring attacks may thus be easily prevented or avoided.

To prevent attacks of croup in children who have never had it, but in whom it is feared, or to prevent the repetition of attacks in those who have already been a victim to it, one must advise carefully concerning the dietary, and see that the bowels move regularly each day. The child should be hardened to resist catching cold easily by daily sponging the chest, neck, and throat in cold water. Pure fresh air should be obtained habitually each night in the child's sleeping room by opening the windows freely. When weather conditions permit, outdoor life should be allowed to the fullest extent, the child either playing on the ground, or, if too young, placed in a perambulator and protected from wind and direct sunlight.

Enlarged tonsils and adenoids should be removed and elongated uvulæ shortened. In weak, cachectic, and strumous children, tonics should be exhibited. Syrup of iodide of iron and cod liver oil will be found most useful in such cases.

As a last word—the precautionary measure of making a careful and immediate culture of the throat and larynx in every case of croup and of examining the same for the bacillus of diphtheria, both for the welfare of the patient and for one's professional reputation, should never be neglected. Diphtheritic laryngitis is a wolf which often appears in sheep's clothing.

The Cause of Explosion of Compressed Oxygen.—In discussing several explosions of cylinders containing compressed oxygen, a writer in *Chemical Industries* says that the explosions have been due to the oxidation of the oil used as a lubricant either in the valves of the cylinders themselves or of the manometers. He says that fat free asbestos alone should be used for packing the valves.

Correspondence.

LETTER FROM PARIS.

The Falling off in Medical Students.—Some Exceptional Facilities.—The Hospitals.—The Lack of Ventilation.—Activity against Tuberculous Disease.—Dechloridation.—Dieulafoy's Service.—Doyen.—Pozzi.—Poirier.

PARIS, *October 15, 1906.*

The last five or six years have seen a very distinct falling off in the number of medical students in French universities. Inasmuch as many of these students are native born, it is fair to infer that the practice of medicine in France is offering less at the present time than in the past. The reduction in the number of students from other countries has been even more marked, and apart from an inconsiderable number of Latin speaking students the schools of Paris have not been eagerly sought by foreign graduates or undergraduates. This is probably in large part due to the fact that the newer institutions and buildings of the Germans are offering more to specialists as well as undergraduates, and also to the feeling that is more or less widely distributed that foreign students are not so much desired.

At the same time there is little doubt that in some lines excellent work and exceptional clinical facilities are offered by the French schools, particularly in Paris; and in certain respects it may very well be said that Paris, of all the European capitals, is one of the very best in which to study certain specialties. This is notably true, for instance, of diseases of the skin, and still more of diseases of the nervous system, where the impulse given by Charcot is still manifest.

As is well known, the hospitals of Paris to which access may readily be obtained by the student or practitioner wishing to enlarge his clinical experience are all under the control of a central body termed the "Assistance publique." The moneys administered by this board are derived from the common municipal fund, with a subvention from the state, and the relief it affords can be claimed by any citizen who is ill and in indigent circumstances. The funds for this purpose are ample, although that set aside for medical apparatus is criticised as inadequate by the physicians in the hospitals. No direct clinical instruction is provided except in the clinics of the Faculté de médecine, which are fairly well organized for a small number of students and for purposes of clinical demonstration. But when compared with the standard of the German schools the actual individual instruction seems entirely inadequate. The prevailing method seems to be to talk elaborately and with much repetition for nearly an hour, and then to demonstrate rapidly and unsystematically for less than ten minutes. The patient working out of detail is left entirely to the personal initiative of the student during his spare time in the wards; he has no guides, and many of his mistakes must thus escape his own notice.

These objections, to be sure, do not apply to those students who gain positions as externes and internes. But of the latter there are only fifty per annum, and the examination for these positions is very stiff, being competitive and open to any one who has qualified by passing his baccalaureate and externat. Success means four years' privileges in a position where much more responsibility is permitted than in England, and where daily contact with eminent clinicians rectifies errors of observation and inference. Much practice of minor operations is permitted, and even reports of the cases for learned societies may be made. All this makes the internat probably the finest clinical school in the world.

Many of the teachers are attractive, but they are apt to pose as omniscient, and thus their explanations lack in scientific accuracy, so that, with the best will in the world, they are of very little help to a stranger, and for the slow, careful study of patients necessary to the making of a first class clinician, one may as well remain in one's own country. However, for a general view of a superficial aspect of cases and for collections of rare and curious diseases the hospitals are unsurpassed.

The buildings, wards, and fittings of Landouzy's clinic are exceedingly old, and would strike an American as being quite inadequate for the treatment of the sick, but splendid work has been done there nevertheless, and patients are much better off in the hospitals than in their own exceedingly ill ventilated homes. The Frenchman seems to have a morbid antipathy to the least "current of air," and a look at some of the most recent public buildings in Paris is enough to show how little the problems of ventilation entered into their design. In fact, it is only now, after innumerable complaints by strangers, that ventilating fans are being installed in their underground railway system.

Although Professor Landouzy has appreciated this factor in the production of tuberculous disease, he has devoted much of his attention during the past two years to a collection of statistics which show the relation between uneconomical expenditure and the ill health which so often precedes the disease. He has shown how the money spent by the French laboring people for wine would permit them to procure an adequate diet instead of the insufficient one which his inquiries have discovered to be common. He has also found that forty-five per cent. of the Paris washerwomen die of tuberculous disease. This insistence upon the public and economic aspect of medicine is not, however, the rule in France. Although latterly antialcohol teachings have become a craze with the French medical profession, their appreciation of the tubercle problem is very imperfect, and the International Congress held last October does not seem to have created much permanent interest.

It is in experimental clinical work that enterprise is most evident in Paris at the present time. A striking instance of this resulted in the dechloridized diet, now so much employed. Achard, one of the pioneers in this work, has at the hôpital Tenon an exceedingly well organized, cleanly service. He is extremely hospitable, willing to show anything he has and to discourse on the

cases. The same cannot be said of the service of Widal, where, however, much good research work is in progress. But the place is exceedingly dirty and ill ventilated, and Widal himself is not at all cordial to strangers. At the huge St.-Antoine Hospital there are several services, that of Tissier, who has made a specialty of urology, that of Vaquez, well known for his work on blood pressure, who has endeavored to establish guides for deprivation of salt even in cases of pure cardiac disease, and that of Béclerc, who has a very fine radiographic installation, and is working chiefly on the blood, in company with Rist, who has a neighboring service. The latter speaks English and is most hospitable and kind. He is well known for his investigations on anaerobic organisms in disease. Of course the most famous installation of radiography is at the Salpêtrière.

Another service of general medicine is that of Dieulafoy, Hôtel Dieu. He belongs to the old school and is very rhetorical, but is highly esteemed by his assistants. He is professor at the university, and his assistants give several courses in different branches of medicine. His wards and lecture theatre are, like some others I have mentioned, deplorably defective in ventilation. He himself is an asthmatic—small wonder—who never leaves Paris. Perhaps the most interesting lecturer on clinical medicine is Chauffard, at the Cochin Hospital, but he lectures only in the spring.

Turning to surgery, we find that the professor at the Hôtel Dieu has made an endeavor to have strangers treated with more courtesy by his subordinates, and expressed this desire in his introductory address last year. Clinical surgery is exceedingly well taught by his assistants, a series of demonstrations taking place during the spring. They are conducted alternately with gynæcological demonstrations at the same hospital. Tuffier, at the Lariboisière Hospital, is well known for his surgical work on the nervous system, as is also Marion. But neither the latter nor Chipault, who has written copiously, has a service of his own.

The name of Doyen has been in everybody's mouth, but often with some reserve. His method of advancing his views on the pathology of cancer savors more of the charlatan than of the scientist; for, after the evidence which he adduced had been sifted and its validity rejected by a committee of the Society of Surgery appointed to investigate his claims, he did not cease to reassert that he had discovered the protozoon of cancer and to permit the daily press to keep this assertion before the public.

Pozzi, the gynæcologist, is very popular in certain circles, and has a service of new wards in the old Broca Hospital. He is brilliant and clever rather than painstaking. Poirier, who has a service, is, however, better known as an anatomist. Unexampled facilities for anatomical investigations or operative work on the cadaver are afforded by his laboratory at the university for an exceedingly small fee, and there the demonstrators are kindness itself and do understand the scientific direction of studies.

Therapeutical Notes.

Mouth Wash.—Le Gendre advises, in *Bulletin général de thérapeutique*, the following mouth wash:

℞ Thymoli, ...0.1 gramme;
Acidi benzoici, ...3.0 grammes;
Tinct. eucalypti, ...10.0 grammes;
Aq. destillatæ, ...1,000.0 grammes.
M.

Chloral Hydrate Injections for Gonorrhœa.—Lopez Rodriguez recommends a solution of four grammes of chloral hydrate in two hundred and fifty grammes of water for cases of intense blennorrhœa, or urethritis of acute type, which is often accompanied by hæmaturia. The first injections only cause a slight sensation of heat, which, however, soon passes away. Three injections, as the rule, were given daily. They have also been successfully used in cases of urethral discharge of chronic character.—*Le Journal de médecine*, September 16, 1906.

Rational Treatment of Certain Cases of Loss of Appetite by Administration of Thyreoid Tablets.—Levy and Rothschild (*Le Progrès médical*, June 16, 1906), in a communication to the Société de biologie, based upon their observation of the results of thyreoid medication in one hundred patients, reported that in twenty-one cases they had observed a distinct increase in the desire for food and in appetite. This was most marked at the beginning of the treatment, and was proportional to the quantity of the remedy they had received. It diminished during the intervals when opotherapy was suspended. They also observed at the same time that hunger was manifested, that the appetite became normal, and caprices were overcome. The very interesting subject of a possible connection between the thyreoid gland and the function of digestion was taken up in this connection. Taking the hunger, which accompanies the thyreoid treatment, in conjunction with the crises of bulimia of exophthalmic goître and the myoxœdema of hypertrophy of this gland, and also of its diverse phases occurring during pregnancy, it is concluded that apparently the thyreoid gland is the physiological regulator of the sense of hunger. Hence, that there may be hypothyreoid anorexia, which would call for appropriate treatment. In regulating the sense of hunger, the thyreoid becomes the regulator of the diastases of nutrition, as it is also of the diastases of defense. It is also a regulator of the centres in the medulla oblongata.

Thymol Iodide for Hay Fever.—M. E. Fink (*Therapie der Gegenwart*, April, 1906) believes that the mucous membrane of the antrum of Highmore is the point of departure of reflex irritation which produces the symptoms of hay fever. In order to overcome this hyperæsthesia, he insufflates thymol iodide through the orifice of the maxillary sinus situated in the middle meatus of the nasal chambers. He uses a powder insufflator with a curved cannula for depositing the powder. In some cases the first treatment causes all the symptoms of vasomotor coryza to disappear, but in the great number of cases this result

is only attained after a series of daily insufflations. With this treatment the reporter has had much success, especially in cases which had been treated unsuccessfully by a variety of other methods. The relief is permanent and the subjects can walk in the woods in hay fever season without experiencing the slightest trace of irritation of the mucosa of the nose or eyes.

Persistent Vertigo Due to Adhesions Between the Posterior Wall of the Pharynx and the Eustachian Prominence.—Royet, of Lyon (*Revue hebdomadaire de laryngologie, d'otologie et de rhinologie*, July 7, 1906), again calls attention to the existence in certain cases of persistent vertigo of cicatricial adhesions in the vault of the pharynx, between the Eustachian tubes and the posterior wall. This condition is easily and frequently mistaken for vertigo of cerebral origin. The vertigenous symptom, however, is not always manifest, but the reflex phenomena may take the form of various "phobia" neurasthenic conditions, hysteria, or vomiting crises. Ordinary therapeutical measures are manifestly of no avail in cases of this kind. The author insists upon careful examination, and by a slight surgical operation he removes the cause of the disturbance. Clinical reports of four cases are given, in which for periods extending to four years the symptoms of vertigo, staggering gait and disturbance of hearing were all promptly relieved by division of the salpingo-pharyngeal adhesions. The relief had been complete for two years at the time of the report.

Gout in the Phalangeal Articulations.—In the case of a man, thirty-five years of age, of gouty heredity, who complained of constant pain in the distal joints of the fingers and toes and trophic changes in the nails, which were thick, chalky, and brittle, J. O. Shoemaker pronounced the symptoms to be due to gout. The patient also had incipient arteriosclerosis. The urine contained many uric acid crystals, but no albumin or sugar. At first local applications were made, three times a day, of pure oil of gaultheria, which gave immediate relief to the pain. For intestinal disturbance he was given:

℞ Strychninæ sulphatis, ...gr. 4-5;
Acidi hydrochloridi diluti, ...ʒss;
Glyceriti pepsini, ...q. s. ad ℥vi.
M. Sig.: Two teaspoonfuls in a little water after each meal.

For general nervousness and insomnia, the following was ordered:

℞ Ext. cannabis indicæ, ...gr. 1-4
Ext. hyoscyami, ...gr. 1-8;
Camphoræ monobromatæ, ...gr. v;
Olei theobromatis, ...q. s.
M. ft. Suppositorium No. 1. Mitte No. XX.
Sig. Insert one into the rectum four times daily.

Galvanism, from 10 to 30 milliampères, was given once daily. The patient did so well under this treatment that in two weeks he was able to close his fists, which he had not been able to do for a long time. His nervous condition was also much improved, and he could sleep all night long. At this time the treatment was modified as follows:

℞ Olei gaultheriæ, }
Oleati hydrargyri (25 per cent.), } .....āā ʒi.
M. Sig.: Apply to fingers and toes several times daily.

The internal treatment was changed so as to act more decidedly on the gouty condition:

℞ Strychninæ sulphatis, ...gr. 1-60;
Arseni trioxidi, ...gr. 1-30;
Ferri pyrophosphatis solubilis, }
Quininæ sulphatis, } .....āā gr. iss.
M. et ft. pilula No. I Mitte No. XX.
Sig.: Take one pill after each meal and at bed time.

The suppositories were reduced to two daily, but the galvanism continued daily as before. Under this treatment the patient continued to improve, and the nails of the fingers and toes became normal. The pains disappeared, and he could move the fingers, hands, toes, and feet with ease and comfort. In a second case brought before the class at the same time the patient, a woman of twenty-two years, had good health until her husband died a year ago. The shock caused her to neglect her food and her nutrition, and digestion became much impaired. She had lost forty pounds in weight. The liver enlarged and the abdomen was tender. She complained most, however, of her fingers and toes. The skin around the nails was congested, infiltrated, and very sensitive to the touch. She was unable to pick up any object without much pain. The diagnosis was made of constitutional gout, manifested in an irregular type. Bowels were constipated and the scleræ were jaundiced. She was ordered for the inactive condition of the liver and bowels:

℞ Massæ hydrargyri, }
Ext. colocynthidis comp., } .....of each gr. xx;
Pulv. jalapæ comp., }
Ol menthæ pipentæ, ...m. i.
Inft. pilulæ No. XX.
Sig.: One pill every night before retiring.

In order to stimulate the nervous and glandular systems, silver nitrate was prescribed; one eighth of a grain in two drachms of syrup of acacia to be taken before each meal. Oil of gaulthera was applied locally, as in the preceding case, and also galvanism, for two weeks. At this time she showed marked improvement and the following hæmaturic combination was given:

℞ Liquoris acidi arseniosi, ...ʒiss;
Acidi hydrochlorici diluti, ...ʒss;
Glyceriti pepsini, ...q. s. ad ʒiii.
M. Sig.: One teaspoonful, in a little water, after each meal.

At the end of six weeks' treatment the patient's digestion was normal, and she slept well. She could wear her regular sized shoes again, and she could walk better, there was no pain in the toes. The arsenic mixture was then stopped, and she was given beechwood creosote, from two to five minims given in warm milk, four times a day. In both patients the diet was restricted to vegetables, milk, and broths. Farinaceous foods, such as rice, hominy, oatmeal, and similar starchy products, were especially interdicted. The patients were instructed to take plenty of outdoor exercise and to avoid all excitement as much as possible. With the continuance of this line of treatment it was believed that the patient would be entirely cured of her gouty manifestations, and her body resume its normal state.—*Medical Bulletin*, October, 1906.

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THE SANATORIUM.

Half a century ago such retreats as those with which we are now familiar, calling them by the name of sanatoria (sometimes written sanitaria), were few and far between in this country. Practically the public knew nothing of them; now the term is in everybody's mouth. Many of our early sanatoria were popularly looked upon as private madhouses or at best as houses of refuge for the broken down victims of addiction to drugs. Hence there was a certain stigma connected with them. The same was true of asylums for the insane, and so widespread was the feeling of opprobrium that in many instances the word hospital was officially substituted for asylum. But the sanatorium has outlived any aversion that may for a time have attached to it, and sanatoria have multiplied exceedingly. They are now popular, indeed, for, since it is generally recognized that they are of private ownership and not open to charity patients, it is perceived that those who are received into them are at least not paupers. It is realized, too, that as a rule they can accommodate but a comparatively small number of inmates, so that persons sent to them are generally supposed to be in less danger of being thrown with undesirable associates than in large public institutions. In addition, their administration is looked upon as attended with fewer vexatious restrictions than are judged necessary in the conduct of great hospitals. All this has made sanatoria popular of late years.

We cannot doubt that in the main the sanatorium is deserving of public favor. There are points, too, in which it is of service to the medical men who are connected with it—points that have nothing to do with pecuniary gain, which indeed is precarious. It is, however, no place in which a young physician may improve his professional education unless he is bent on confining his career within the limits of a very narrow specialty; and it is not apt to be a field in which the art of nursing can be taught to advantage. On the whole, the sanatorium is of much more importance to the public than to the medical profession, though it certainly may aid more powerfully than almost any other agency in enabling a man to work out some problems in medicine. Necessarily its benefits in this direction are only for the few, since it is expensive and risky to establish and maintain a sanatorium; and this fact restricts its usefulness to the community, for only the prosperous can afford such housing and feeding and attendance as the ideal sanatorium furnishes. In what we have here said, of course, we have had in mind only the sanatoria in which the practice is legitimate; that there are a few in which pretense or even downright criminality flourishes is, we fear, undeniable, but they must be very few.

HORACE AND HIS ILLS.

Of all the very real and human people who walked the narrow, rutted streets of ancient Rome, dwelt in its houses, and bargained in its shops—of all those, at least, whose sayings and doings have been more or less completely set down for us by themselves or their friends—none is perhaps more real and human, more companionable and modern, than that little black haired man who so charmingly and so frankly tells us of his journeyings and sojourns, of his foibles and follies, of his friends and flirtations, and even of his physical defects and illnesses.

Dr. Charles L. Dana, in the latest issue of the *Proceedings of the Charaka Club*, has written of The Medicine of Horace, and collected the poet's allusions to matters medical. For an author who does not give the casual reader the impression of an invalid, a hypochondriac, or a valetudinarian, Horace furnishes a surprising number of such allusions, and it is only when they are thus culled from his pages and presented at one time that we realize how often he spoke of such things. We sometimes find him alluding to the "lippus" from which he suffered, an affection of the eyes which Dr. Dana identifies with trachoma. And even at the early age of twenty-eight he begins to humor a sensitive digestion and while on a journey sits dinnerless, watching his more reckness or healthier companions in no very agreeable state of mind. As Dr. Dana points out, it is characteristic of

dyspeptics to be astounded and well nigh offended by the spectacle of others relishing viands which are to them anathema, and Horace is no exception when he contemplates the freedom with which the hardy reapers partake of the onions which wrought such havoc in his own internal economy. We also find him mentioning as one of the delightful features of his country place the presence of a medicinal spring, and Dr. Dana infers both that the poet was conscious of his liver and also that he considered a "spring medicine" advisable for ambitious bards, since in his *Ars Poetica* he exclaims, "O, unhappy me, who purge myself of bile every springtime!"

At about the age of thirty he describes himself as living the simple life, walking about town in the evening, going home to a vegetarian supper and an early bedtime, to wake early and read or write, take a walk, and come back to a light breakfast. How much of this was due to poverty, how much to principle, and how much to a weak stomach we cannot say, but we do know that Horace had enjoyed many an elaborate meal with his wealthy friends, and indications are not lacking that he did not always keep such early hours.

Already at the age of thirty-four he regrets that he cannot accompany his patron Mæcenas to the war against Antony, being "unwarlike and not strong," and seems to have been a little nervous and not a good sleeper. Yet it was at this period of his life that his best verses were written, and Dr. Dana feels sure that, in spite of acknowledged quickness of temper, his bodily ills had not destroyed his good nature, or he could never have written "that most humorous of ancient poems, his adventure with the bore." One might add that none but a good natured man would poke fun at his own increasing stoutness, as Horace does when he alludes to himself as "a pig in the sty of Epicurus."

It was when he was thirty-nine that he narrowly escaped death by the falling of a tree, and Dr. Dana is inclined to wonder if he did not have a traumatic neurosis, he is so violent in his denunciations of the tree, and thereafter begins to complain of his whitening hair. He becomes careless in dress, though he had once been something of a fop, ceases to be interested in the opposite sex, and prefers a short dinner with a nap afterward.

It was about this time, at the age of forty-two, that he consulted Dr. Antoninus Musa, who had cured Augustus by cold baths, and we find Horace trying various resorts where baths of different kinds were found and inquiring about others. If the reports of his friends are to be trusted, it seems likely that he was affected with a sort of nervous prostration which made him rather "difficult" for some time, but did not prevent him from writing much and turning out some of his best work in the later years of his life. As might be expected, his invalidism makes him "more of a preacher, a philosopher, and a contented country gentleman than he might otherwise have been," and as he grew older he dropped the lyric strain for one more didactic. The cause of his death, at the comparatively early age of fifty-seven, is not known, but from a survey of his early life and habits Dr. Dana sagaciously deduces that he "probably had an arterial sclerosis and a bad heart, and died either from a cardiorenal trouble or some form of cerebral apoplexy."

THE GERM OF WHOOPING COUGH.

Two recent reports reach us from abroad about the discovery of the whooping cough bacillus. Dr. Reyher, of Berlin (*Berliner klinische Wochenschrift*, September 3rd), in a paper read before the Society of Physicians of the Charité, reviews the history of this much sought for bacillus, and states that the researches seem to point to two or three discoveries. Czaplewski and Heusel described in 1897 a small, solid, nonmotile, Gram negative bacterium of great similarity to the influenza bacillus, but of larger size. A similar bacillus was described by Manicatide in 1903, while Jochmann and Krause asserted that their *Bacillus pertussis Eppendorf* was of more import in whooping cough, although it could not be distinguished from the influenza bacillus, and grew only upon hæmoglobin agar. Reyher states that he for four years has carefully examined the sputa of whooping cough patients and has found both microorganisms, the bacterium described by Czaplewski and that of Jochmann, but he observed that the larger, solid bacillus was always to be found, while the other was present only in seventy to eighty per cent. of the cases. This latter is not the same as the influenza bacillus, but, yet, it cannot be distinguished in the sputa examinations, although upon the hæmoglobin medium it shows a more polymorphous character, being of slender form, often with a pointed tail.

In France Bordet and Gengou (*Journal de médecine de Bordeaux*, September 9th; *Tribune médicale*, September 15th; *Clinique*, September 21st; *Revue mensuelle des maladies de l'enfance*, October) add a third bacillus to the list, one which, they assert, is the microorganism of pertussis. It is a very small, ovoid bacterium, which keeps its form and appearance in the culture as well as in the sputum, and is hardly colored, especially in the central parts, by methylene blue or toluidine.

It does not form spores, and is killed by a temperature of 131° F. It is to be found in great numbers in the sputa during the early paroxysms of the cough, but as the disease progresses it becomes more rare. To this the authors ascribe the fact that their bacillus has not been described before by other bacteriologists. They also state that it has many features that distinguish it from the bacilli of Czaplewski, Manicatide, Jochmann and Krause, and others. It possesses probably the power to secrete poisonous toxines, as is shown by certain experiments, especially by intraocular injection in rabbits, as a result of which the cornea becomes opaque and white.

But both reports, the German as well as the French, need much more detailed researches before it can be finally settled which one of many bacteria, including those described in America, England, and Italy, can prove its unenviable title to recognition as the originator of so much suffering in children.

CYSTICERCUS DISEASE AND THE BUTCHER'S DOG.

The fact that the *Tænia echinococcus* most frequently finds its intermediate host in the dog is well established. It is true, however, as pointed out by F. Dévé, of Rouen (*Bulletin médical*, October 3rd), that not all dogs are to be thus incriminated by any means. Watch dogs and pet dogs, that are kept in the house and have their food carefully supervised, are rarely infected by this parasite. On the contrary, the butcher's dog and vagrant dogs that have access to the places where sheep are slaughtered are generally its victims. The viscera of animals affected with "bladder worm disease" are greedily eaten by the dogs, and they then communicate the disease to persons who live intimately with them. It is pointed out in confirmation of this view that butchers are especially liable to the cysticercus disease, which is accordingly described by Dévé as a form of "professional disease," occurring principally, as it does, among the butchers, the meat dealers, and shepherds and their families.

In fact, out of a total of seventy personally observed cases of hydatid cysts, Dévé had been able to trace in twelve a direct ætiological relation to the butcher's dog, that is, in seventeen per cent. of the cases. In other instances the shepherd's dog, which had been fed on the entrails of sheep, was shown to have communicated the parasite to the shepherd or his family, by the development of hydatid cysts in the liver, lungs, and other internal organs. This explanation is suggestive in its relation to the geographical distribution of cysticercus disease, and directly indicates the importance of enforcing sanitary regulations which will effectually prevent the carcasses or viscera of sheep or other animals affected with the "bladder worm disease" from becoming the food of dogs. Where such precautions are now observed hydatid cysts are of very infrequent occurrence and are usually seen among immigrants coming from regions where the custom prevails which is here condemned.

THE ADMINISTRATION OF CREOSOTE.

It has been said that the repugnance felt by almost everybody toward the odor and taste of creosote is generally overcome in the course of a comparatively short time. We doubt the truth of the statement; indeed, we are inclined to think that the disgust grows greater and greater as the administration of the drug is continued. Dilution is of little use to allay the feeling, even with a lover of Scotch whiskey. Creosote may be given in capsules, but, as has recently been pointed out by Dr. Bouchet (*Poitou médical*, July 1st; *Progrès médical*, September 1st), the gelatin may dissolve in the stomach at a moment when the organ contains no food or, if the precaution has been taken to swallow the capsule only after eating, at such a point as to let its contents out against the bare wall of the stomach. In that case an irritant action must be exerted, possibly a caustic effect.

Apparently M. Bouchet has devoted a good deal of thought and care to the problem of administering creosote in an inoffensive manner. His investigations have led him to the conclusion that an excellent way is to mix the creosote with powdered charcoal in the proportion of one part of the former to two of the latter by weight. Having been dried, the powder is done up in the form of wafers, each containing the proper dose of creosote. It might be preferable, we should think, to put the powder into capsules as a mere matter of convenience. Several of them could be taken at a time if the dose was too bulky to be contained in a capsule small enough to be swallowed readily.

There is some loss of weight during the drying process, which lasts half an hour, no heat being used. One sixth of the original weight is lost. Of course this loss is of creosote alone, though M. Bouchet suggests that the creosote simply parts with "humidity," and consequently becomes more concentrated. One might disregard that doubtful point, we imagine, and adjust the doses to the patient's tolerance. Even the addition of charcoal, we take it, does not render creosote wholly acceptable to the stomach, but it would doubtless do away with the irritation that might follow

the administration of capsules filled with undiluted creosote. It is still better, we think, to incorporate the creosote with a generous amount of some bland substance, such as curd soap with powdered licorice or althæa, and put the mixture at once into capsules.

THE ANACHRONISTIC MARTINET.

Men of sense have no patience with that variety of dignity which seeks to protect itself with armor plate. We had supposed that by this time commanding officers of the army and navy had come to the same way of thinking, but it seems that they have not all done so, or at least have not done it until a time subsequent to certain incidents mentioned by Surgeon R. S. Woodson, of the army, in the October number of the *Journal of the Association of Military Surgeons of the United States.*

Evidently not all the martinets were dead at the time of an occurrence narrated by Dr. Woodson. In a sanitary report a medical officer had said: "The commanding officer's attention is respectfully called to the existence of certain unsanitary conditions," etc. The document was sent to the post surgeon with this endorsement: "Respectfully returned to the post surgeon, Fort Barrancas, Fla., who will remove the objectionable phraseology contained herein. The commanding officer's attention may be requested, but not called."

GRAPHOLOGY.

A French writer, Dr. Alfred Binet, after giving us a fascinating series of monographs on various subjects connected with comparative psychology, has outlined for himself a series of investigations of a number of widespread beliefs which are urgently in need of scientific examination. He proposes to study the basis for the beliefs in chiromancy, in phrenology, and in graphology.

The writing expert first comes under his scrutiny, the result of which appears in a recent volume (*La Révélations de l'écriture d'après un controle scientifique*, Paris, 1906). A casual review of this volume of two hundred and fifty pages is sufficient to show that there is a real science of graphology, but that graphologists as a rule have much to learn before they can deserve the title of experts. In many of his tests the expert made a scarcely better showing than the layman.

Dr. Binet's inquiries were instituted to test the value of attempts to determine the age, sex, intelligence, and character of an individual by his writing. So far as the determination of sex was concerned, his experts were correct in seventy-eight per cent. of the cases presented, while a seventeen year old school girl was able to determine the sex in seventy per cent. Ability to determine sex in handwriting, therefore, is no great gift, the difference between the expert and the untrained being very small. As for age, a similar deduction may be drawn, and Binet concludes that there may be an intuitive graphology with reference to age, but no deductive science. As for intelligence, it cannot be said that experts are by any means infallible, although the studies show fairly conclusively that a person's writing may indicate his intelligence. Graphic signs of intelligence are incontestible, but they are not found in the writing of all great men.

In determining character by handwriting the experts are sadly at sea. Binet remarks that in reading a set of the opinions of handwriting experts one is alternately charmed by their accuracy and disgusted by their errors. One cannot decide whether or not there is any truth in graphology except by taking the average of their efforts, which, he thinks, establishes a fact that there is some truth in graphology even if not in some graphologists. It is not sufficiently luminous. however, to entitle it to rank as a science. Binet, in conclusion, believes that graphology is perhaps a science of the future, but in its present stage its votaries are priests of half lights who will flee when true science steps into the field.

THE SOBER SECOND THOUGHT ON THE MEAT INDUSTRY.

There have been many indications of late that our English friends are beginning to realize that their horror at the revelations concerning the Chicago meat industry might well be tempered with reflection on their own methods. Sir Frederick Treves is one of those who have given voice to such a feeling, and at the recent opening of the winter session of the Royal Veterinary College Professor H. A. Woodruff delivered an address in which, according to the *British Medical Journal* for October 6th, he said "it was remarkable that the man in the street, who held up his hands in pious horror at Chicago, appeared utterly unconscious that in this country [England], excepting a few enlightened cities and towns, there was no regular system of meat inspection at all."

Veterinary surgeons, Professor Woodruff added, knew very well that carcasses of animals affected with tuberculous disease, anthrax, pyæmia, trichinæ, cysticerci, malignant tumors, and febrile diseases, or those of immature or unborn calves or of animals hurriedly killed to prevent their dying of disease, were dressed and exposed for sale with impunity. England of course is not

the only country in which such practices go on; it is not to be doubted that they are rife in our own country at least. It is not the great packing houses alone that should be watched; we ought to have efficient inspection everywhere.

News Items.

NEW YORK CITY AND STATE.

Changes of Address.—Dr. B. Farquhar Curtis, to 27 East Sixty-third Street; Dr. H. W. Wandless, to 9 East Thirty-ninth Street, New York.

The Manhattan Eye, Ear, and Throat Hospital.—The opening reception of the new hospital building, on Sixty-fourth Street, between Second and Third avenues, was held on Tuesday, October 30th.

The Syracuse Academy of Medicine.—The programme for a meeting, held on Tuesday, October 30th, included a paper entitled, Gossip About Doctors, with lantern slides, by Dr. William S. Ely, of Rochester.

The Harvey Society Lectures.—The second lecture in the Harvey Society course will be delivered at the New York Academy of Medicine, on Saturday evening, November 3rd, at 8.30, by Professor C. A. Herter. Subject: The Common Bacterial Infections of the Digestive Tract and the Intoxications Arising From Them.

The Medical Society of the County of Rensselaer.—The programme for the October meeting of this society included the following titles: The Milk Supply of the City of Troy, by Dr. H. W. Carey; Three Cases of Motor Paralysis Hemiplegic in Type Without Sensory Disturbance, by Dr. H. C. Gordinier. Resolutions in memory of Dr. E. D. Ferguson were passed by the association.

The Saratoga Medical Society.—The programme for a meeting, held on Friday, November 2nd, consisted of a symposium on Diabetes, arranged as follows: Ætiology and Pathology, Dr. R. G. Loop; Symptoms and Diagnosis, Dr. A. S. Downs; Complications and Treatment, Dr. J. R. Ledlie; discussion by Dr. W. H. Sanford, Dr. M. E. Van Aerman, and Dr. G. F. Comstock.

The Medical Society of the County of Broome.—The centennial anniversary of this society was celebrated at Binghamton, on Wednesday, October 24th. The programme prepared for the occasion included: the President's address, Dr. F. M. Miller; Personal Reminiscences of Some of the Older Members of the Medical Society of the County of Broome, Dr. John G. Orton; A Comparison of Ourselves with Our Forefathers, by Dr. Charles G. Stockton; Historical Reminiscences, by Dr. Daniel S. Burr; and Some Lessons of the Hour, by Dr. Joseph D. Bryant.

The Tri-Professional Society of New York, an organization composed of physicians, dentists, and druggists, at a meeting held on Tuesday evening, October 23, 1906, elected the following officers to serve for the ensuing year: President, Dr. S. S. Wallian; first vice-president, Dr. J. Monroe Lieberman; second vice-president, Dr. E. H. F. Pirkner; secretary, Dr. J. Carlisle De Vries; treasurer, Dr. E. R. Eliscu. The paper of the evening, on Rhythmotherapy, was read by Dr. S. S. Wallian. The society meets monthly, except during the summer months.

The New York and New England Association of Railway Surgeons will hold its sixteenth annual meeting at the New York Academy of Medicine, on Wednesday and Thursday, November 14 and 15, 1906. The officers of the association are as follows: President, Dr. J. P. Creveling, Auburn, N. Y.; first vice-president, Dr. H. T. Dana, Cortland, N. Y.; second vice-president, Dr. F. A. Stillings, Concord, N. H.; secretary, Dr. George Chaffee, 338 Forty-seventh Street, Brooklyn, N. Y.; assistant secretary, Dr. C. B. Herrick, Troy, N. Y.; treasurer, Dr. J. K. Stockwell, Oswego, N. Y.

The Eastern Medical Society of the City of New York.—A meeting of this society will be held at the Young Men's Benevolent Building, 311 East Broadway, on Friday, November 9th. The programme consists of a symposium on La Grippe, arranged as follows: Manifestations of the Upper Respiratory Tract, by Dr. H. Jarecky; Pulmonary Manifestaions, by Dr. A. Kohn; Aural Manifestations, by Dr. Seymour Oppenheimer; Stomachic and Intestinal Manifestations, by Dr. J. Kaufmann; La Grippe in Children, by Dr. Henry Heiman; Treatment of La Grippe, by Dr. Charles E. Nammack. To be followed by a general discussion.

The New York Academy of Medicine.—The following was the order for a meeting held on Thursday, November 1st, under the auspices of the *Section in Ophthalmology:* Demonstration of the Various Recently Devised Electric Ophthalmoscopes, which Facilitate Ophthalmoscopy for the General Practitioner; Also of Thorner's Binocular Ophthalmoscope, by Dr. Herbert Claiborne; Paper: Chorioidal Diseases in their Relation to General Diseases, and Particularly to General Infections, as Well as Autointoxications, by Dr. G. E. de Schweinitz, of Philadelphia; Paper: On Autointoxications, by Dr. E. E. Smith; Discussion by Dr. Charles J. Kipp, of Newark; Dr. Charles S. Bull, Dr. Hiram Woods, of Baltimore; Dr. Harlow Brooks, Dr. John T. Carpenter, of Philadelphia; Dr. Alexander Duane, Dr. C. W. Cutler, and others. Nomination of Section officers for the ensuing year.

The *Section in Pædiatrics* will hold a meeting on Thursday, November 8th, with the following programme: Paper: Whooping Cough, Its Treatment by an Improved Abdominal Belt, by Dr. Theron W. Kilmer; Paper: Notes from a Diary of a Case of Splenomegaly, by Dr. Eli Long; Paper: The Principle of Top Milks, by Dr. H. D. Chapin; Discussion by Dr. Freeman. Nomination of officers for the ensuing year.

Society Meetings for the Coming Week:

Monday, *November 5th.*—New York Academy of Sciences (Section in Biology); German Medical Society of the City of New York; New York University Medical Society; Morrisania Medical Society, New York (private); Brooklyn Anatomical and Surgical Society (private); Corning, N. Y., Academy of Medicine; Utica, N. Y., Medical Library Association; Boston Society for Medical Observation; St. Albans, Vt., Medical Association; Providence, R. I. Medical Association; Hartford, Conn., Medical Society; Chicago Medical Society; Niagara Falls Academy of Medicine (private); Practitioners' Club, Newark, N. J.

Tuesday, *November 6th.*—New York Academy of Medicine (Section in Dermatology); New York Neurological Society; Buffalo Academy of Medicine (Section in Surgery); German Medical Society, Brooklyn; Medical Association of Troy, N. Y., and Vicinity; Hornellsville, N. Y., Medical and Surgical Association; Long Island, N. Y. Medical Society; Elmira, N. Y., Academy of Medicine; Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Hudson, N. J., County Medical Society (Jersey City); Androscoggin, Me., County Medical Association (Lewiston); Baltimore Academy of Medicine; Medical Society of the University of Maryland (Baltimore).

Wednesday, *November 7th.*—Society of Alumni of Bellevue Hospital, New York; Harlem Medical Association, New York; New York Genitourinary Society; Psychiatrical Society of New York (private); Medical Microscopical Society of Brooklyn, N. Y.; Medical Society of the County of Richmond, N. Y. (New Brighton); Penobscot, Me., County Medical Society (Bangor); New Haven, Conn., Medical Association; Elmira, N. Y., Academy of Medicine.

Thursday, *November 8th.*—New York Academy of Medicine (Sections in Pædiatrics and Otology); Society of Medical Jurisprudence and State Medicine, New York; Brooklyn Pathological Society; Medical Society of the County of Cayuga, N. Y.; South Boston, Mass., Medical Club (private) (annual); Pathological Society of Philadelphia; Church Hill Medical Society of Richmond, Va.; Jenkins Medical Association, Yonkers, N. Y.; Practitioners' Society of Eastern Monmouth, Camden, N. J.

Friday, *November 9th.*—Eastern Medical Society of the City of New York; Yorkville Medical Association, New York (private); Dermatological and Genitourinary Society, Brooklyn (private); German Medical Society of Brooklyn; Medical Society of the Town of Saugerties, N. Y.; Saratoga Springs, N. Y., Medical Society.

Saturday, *November 10th.*—Obstetrical Society of Boston (private).

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending October 27, 1906:

	October 27.		October 20.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	127	27	121	25
Smallpox	..	..	2	..
Varicella	42	..	20	..
Measles	51	..	61	4
Scarlet fever	90	3	89	3
Whooping cough	38	6	24	13
Diphtheria	238	25	194	22
Tuberculosis pulmonalis	336	159	359	174
Cerebrospinal meningitis	11	5	11	13
Totals	933	225	881	254

PHILADELPHIA AND THE MIDDLE STATES.

Franklin Institute.—At the Section Meeting of the Franklin Institute, held on Thursday, October 25th, Dr. Henry Leffmann read a paper on Microscopic Organisms Connected with the Transmission of Hydrophobia.

Atlantic City (N. J.) Hospital.—Plans have been submitted for a five story stone, brick, and terra cotta hospital building, to be erected at Ohio and Pacific avenues, Atlantic City, N. J., to cost $75,000.

Philadelphia Personals.—Dr. David B. Birney has been confined to bed as the result of an accident in stepping from his carriage.

Dr. Lewis Ziegler has been elected executive medical officer of the Wills Eye Hospital.

Dr. John Holmes Trinder has been elected resident physician at Girard College.

Public School Teachers Endow Bed in Hospital.—The public school teachers of Philadelphia have raised $5,000, which they have given to the trustees of the Jefferson Medical College Hospital, and in return for which the trustees have designated a room to be known as the Lewis Elkin Memorial Room, for the free use of public school teachers needing medical or surgical attention. The fund was raised in commemoration of Mr. Elkin's bequest of nearly $2,000,000 for the provision of annuities for superannuated women teachers.

Scientific Society Meetings in Philadelphia for the Week Ending November 10, 1906.—*Monday, November 5th,* Philadelphia Academy of Surgery; Biological and Microscopical Section, Academy of Natural Sciences; West Philadelphia Medical Society; Northwestern Medical Society. *Tuesday, November 6th,* Academy of Natural Sciences; Philadelphia Medical Examiners' Association; Kensington Branch, Philadelphia County Medical Society. *Wednesday, November 7th,* College of Physicians; Association of Clinical Assistants of Wills Hospital. *Thursday, November 8th,* Pathological Society; Section Meeting, Franklin Institute. *Friday, November 9th,* Northern Medical Association.

The Philadelphia County Medical Society.—At the business meeting of the Philadelphia County Medical Society, held Wednesday, October 17th, the following resolution was adopted concerning newspaper interviews given out by members of the society: *Resolved,* That copies of all articles appearing in the press of this city relating to regular physicians of this city shall be placed in a scrap book by the assistant secretary, to be kept during meetings on the secretary's desk for the inspection of members. Any member whose name appears therein shall have the privilege of attaching thereto a written explanation. Dr. Jay F. Schamberg was elected censor to fill the unexpired term of Dr. H. St. Clair Ash, who recently resigned.

Conjoint Meetings of Philadelphia Physicians and Pharmacists.—An attempt is being made to have a number of meetings during the winter, at which subjects shall be discussed which are of interest to both pharmacists and physicians. It is purposed to hold the meetings once a month, and the subjects suggested for discussion at the November meeting is the work of the Council on Pharmacy and Chemistry of the American Medical Association. In December it is purposed to discuss the Federal Pure Food and Drug Law; in January, The Debasing Influences of Fraudulent Nostrums; in February, Higher Educational Requirements for Pharmacists; in March, The Indiscriminate Renewal of Prescriptions; and in April, Popularizing the Preparations of the United States Pharmacopœia and the National Formulary.

The Semiannual Meeting of the Society of Clinical Surgery was held in Philadelphia on October 26th and 27th. On October 26th the society met at the Pennsylvania Hospital and witnessed operations by Dr. Richard H. Harte, Dr. Robert G. LeConte, Dr. John H. Gibbon, and Dr. Francis J. Stewart. In the early afternoon the society met at the Jefferson Medical College Hospital, where Dr. William W. Keen and Dr. John Chalmers DaCosta performed operations. Later in the afternoon the society adjourned to the German Hospital and witnessed some operations by Dr. John B. Deaver. On Saturday, October 27th, the society met at the University of Pennsylvania, where Dr. Charles H. Frazier and Dr. G. G. Davis performed operations. In the afternoon Dr. Edward Martin held a clinic in the amphitheatre of the University Hospital. Later the society visited the Wistar Institute of Anatomy, University of Pennsylvania.

The Public Education Association of Philadelphia will hold a meeting in the DeLancey School, 1420 Pine Street, on the evening of Monday, November 9th. Dr. Walter L. Fernald, superintendent of the Massachusetts Institution for the Feeble Minded, will deliver an address on Public School Classes as the Best Method for the Early Discovery and Treatment of Defectives. The address will be followed by a discussion of the improvements needed in the present system of special public school classes for these children as existing in Philadelphia. The discussion will be treated from the viewpoint of the public school teacher, the charitable worker, and the physician. The association has just issued a summary of its twenty-fifth annual report, in which considerable space is devoted to the subject of backward children. The scheme, in which public school classes for backward children are a part, consists of (1) special kindergartens limited to twelve children each, for backward children between the ages of four and seven years; (2) special day schools for backward children from seven to sixteen years of age; (3) institutions for all incapable of much progress in day schools; (4) the formation of aftercare committees, which shall maintain a general oversight over all backward children, from the time they leave the special day schools, unless they leave to enter institutions. Considerable space is given in the report to the necessity for school nurses. An effort was made to secure nurses for the public schools in Philadelphia in May of this year, but the ordinance failed to pass both branches of the City Council, and consequently a new ordinance will have to be introduced this autumn. In this respect Philadelphia is behind New York and Baltimore, in each of which cities nurses are employed.

The Health of Philadelphia.—During the week ending October 20, 1906, the following cases of transmissible diseases were reported to the Bureau of Health:

	Cases.	Deaths.
Typhoid fever	93	13
Scarlet fever	37	0
Chickenpox	17	0
Diphtheria	72	16
Measles	24	0
Whooping cough	14	6
Tuberculosis of the lungs	152	60
Pneumonia	42	36
Mumps	2	0
German measles	3	0
Cancer	17	21

The following deaths from other transmissible diseases were reported: Malarial fever, 1; cerebrospinal meningitis, 2; tuberculosis, other than tuberculosis of the lungs, 10; puerperal fever, 1; tetanus, 1; diarrhœa and enteritis, under two years of age, 24. The total mortality was 469, in an estimated population of 1,469,126, corresponding to an annual death rate of 16.60 in a thousand population. The total infant mortality was 112; under one year of age, 92; between one and two years of age, 20. There were 36 still births, 20 males and 16 females. The temperatures as recorded at the United States Weather Bureau office were relatively high. The relative humidity was low, except on two days, when it varied between 89 and 95. There was only one clear day during the week, and the total precipitation was 0.8 inch.

BOSTON AND NEW ENGLAND.

The Mortality of Connecticut.—According to the State Board of Health's *Monthly Bulletin* for September, 1906, the total number of deaths during the month was 1,340. This was 310 less than in August, and 144 more than in September of last year, and 155 more than the average

number of deaths during September for the five years preceding. The death rate was 16.3 for the large towns, for the small towns 14.9, and for the whole State 16.0. The deaths reported from infectious diseases were 205, being 15.2 per cent. of the total mortality.

The Mortality of Boston.—The number of deaths reported to the Board of Health for the week ending October 20th was 206, as against 179 the corresponding week last year, showing an increase of 27 deaths, and making the death rate for the week 17.84. The number of cases and deaths from infec ious diseases was as follows: Diphtheria, 55 cases, 5 deaths; scarlatina, 23 cases, no deaths; typhoid fever, 43 cases, 5 deaths; measles, 2 cases, no deaths; tuburculosis, 28 cases, 15 deaths; smallpox, no cases, no deaths. The deaths from pneumonia were 21, whooping cough 1, heart disease 17, bronchitis 3, marasmus 10. There were 18 deaths from violent causes. The number of children who died under one year of age was 45, under five years of age 63, persons over sixty years of age 55. The deaths in public insti'utions were 60.

The Litchfield County (Conn.) Medical Association.—The programme presented at the semiannual meeting of this association, held at Torrington, on Tuesday, October 9th, included the following titles: What Would You Do, or Rather, What Should I Do? by Dr. G. D. Ferguson, of Thomaston; Remarks on the Establishment of a Colony for Epileptics in Connecticut, by Dr. Max Mailhouse, of New Haven; Fistula in Ano: Causes, Diagnosis, and Treatment, by Dr. Charles I. Page, of Litchfield; Report of a Case, by Dr. Irving L. Hamant, of Norfolk; Appendicitis, by Dr. E. R. Kelley, of Winsted. Dr. G. D. Ferguson, of Thomaston, is president, and Dr. S. G. Howd, of Winsted, is secretary of the association. The one hundred and forty-second annual meeting of the association, which was organized in 1765, will be held in April, 1907.

BALTIMORE AND THE SOUTH.

The Roanoke (Va.) Academy of Medicine.—At the annual meeting of this academy the election of officers resulted as follows: President, Dr. Charles G. Cannady; vice-presidents, Dr. L. G. Pedigo and Dr. S. S. Gale; secretary, Dr. T. Allen Kirk; treasurer, Dr. Allen J. Black.

The Richmond (Va.) Academy of Medicine and Surgery.—The programme arranged for a meeting of this academy, held on Tuesday, October 20th, included the following titles: Acute Frontal Sinusitis, by Dr. C. M. Miller; and The Treatment of Chronic Frontal Sinusitis, by Dr. W. F. Mercer.

The Kentucky Valley Medical Association.—The programme for a meeting of this association, held at Campton, Ky., on October 25-26, 1906, included the following titles: Cholelithiasis, by Dr. S. W. Willis, of Pine Grove; Obstetric Foreceps: History Uses, and Abuses, by Dr. George F. Clark, of Winchester; Bronchitis, by Dr. C. J. Stephenson, of Becknerville; and Endocarditis, by Dr. M. S. Browne, of Winchester.

The Pike County (Mo.) Medical Society.—A number of physicians of Pike county met at Bowling Green, on Monday, October 8, 1906, and organized this society. A constitution and by laws were adopted and the following officers were elected: President, Dr. James W. Dreyfus, of Louisiana, Mo.; secretary, Dr. J. J. Kennedy, of Frankford; treasurer, Dr. T. Guy Hetherlin, of Louisiana. The next meeting will be held at Louisiana, on Monday, November 5th.

The Lancaster County, South Carolina, Medical Association, a recently organized body, met at Kershaw on Tuesday, October 16th, and elected officers as follows: President, Dr. J. F. Mackay, of Lancaster; vice-president, Dr. J. E. W. Haile, of Kershaw; secretary, Dr. R. C. Brown, of Lancaster; treasurer, Dr. W. C. Twitty, of Kershaw; committee on by-laws, Dr. J. E. W. Haile, Dr. J. D. F. Underbark, of Lancaster, and Dr. W. S. Moore, of Heath Springs. The next meeting will be held at Heath Springs on the first Monday in December.

The Mortality of Baltimore.—The report of the Health Department for the week ending October 20, 1906, showed a total of 225 deaths, as compared with 197 during the corresponding week of last year, 160 in 1904, and 171 in 1903. The annual death rate in 1,000 of population was: Whole, 20.69—white, 18.92; colored, 30.14. The principal causes of dea'h were:

Pneumonia	22	Diarrhœa, under 2 years of age	5
Typhoid fever	6	Bright's disease	19
Whooping cough	5	Congenital debility	14
Diphtheria	2	Lack of care	3
Croup	1	Old age	4
Consumption	33	Suicide	1
Cancer	8	Homicide	1
Apoplexy	6	Accidents, etc.	21
Organic heart disease	17		
Bronchitis	5		

The nativity of the decedents was: United States, white, 125; foreign, 46; colored, 50; unknown, 4. The following number of cases of infectious diseases were reported, as compared with the corresponding week of last year:

	1905.	1906.		1905.	1906.
Diphtheria	29	39	Mumps	1	0
Scarlet fever	6	13	Whooping cough	12	22
Typhoid fever	42	41	Chickenpox	1	0
Measles	1	2	Consumption	10	12

CHICAGO AND THE WEST.

The Wayne County (Mich.) Medical Society.—At a meeting of the *Section in Surgery* of this society, held at Detroit, on Monday evening, October 22nd, Dr. Henry O. Walker read a paper on Intestinal Obstruction, which was discussed by Dr. J. H. Carstens and Dr. T. A. McGraw.

A Valuable Gift to St. Luke's Hospital, Chicago.—By deeds which have just gone to record, James Henry Smith, of New York, has transferred to St. Luke's Hospital the equivalent of $150,000 in property. The original gift to the hospital was $350,000 in cash and $150,000 in realty. With this $500,000 an addition is being built to the hospital. The property just transferred consists of the northeast corner of Calumet Avenue and Twentieth Street, west front, 26.5 feet; the southeast corner of Calumet Avenue and Twentieth Street, 373.25 feet; and the northeast corner of Desplaines and Washington streets, 75 2-3 x 150 feet. The transfer was in the form of a quit claim to the Northern Trust Company. The deeds were dated March 19th.

Statement of Mortality of Chicago for the Week Ending October 20, 1906, compared with the preceding week and wi h the corresponding week of 1905. Death rates computed on United States Census Bureau's figures of midyear population—2,049,185 for 1906, 1,990,750 for 1905:

	Oct. 20, 1906.	Oct. 13, 1906.	Oct. 21, 1905.
Total deaths, all causes	539	528	466
Annual death rate in 1,000	13.72	13.43	12.19
Sexes—			
Males	306	298	260
Females	233	230	206
Ages—			
Under 1 year of age	101	110	101
Between 1 and 5 years of age	42	51	33
Between 5 and 20 years of age	33	33	30
Between 20 and 60 years of age	233	229	200
Over 60 years of age	130	105	102
Important causes of death—			
Apoplexy	9	13	12
Bright's disease	45	36	45
Bronchitis	13	7	6
Consumption	52	74	55
Cancer	28	24	24
Convulsions	6	10	10
Diphtheria	15	11	8
Heart diseases	59	39	32
Influenza	0	1	0
Intestinal diseases, acute	54	62	64
Measles	0	1	0
Nervous diseases	23	23	12
Pneumonia	47	48	44
Scarlet fever	9	3	1
Suicide	9	15	12
Typhoid fever	8	9	12
Violence (other than suicide)	31	31	34
Whooping cough	2	6	0
All other causes	129	115	95

GENERAL.

The Interstate Federation of Homoeopathic Medical Societies of New York and Pennsylvania held its third annual meeting at Elmira, N. Y., on Thursday, October 25th, 1906.

The National Association for the Study of Epilepsy and the Care and Treatment of Epileptics.—The sixth annual meeting of this association will be held at New Haven, Conn., on Thursday, November 8, 1906. An interesting programme has been arranged for the occasion. The officers of the association are as follows: Dr. Max Mailhouse, president, New Haven, Conn.; Dr. Everett Flood, first vice-president, Palmer, Mass.; Dr. W. F. Drewry, second vice-president, Petersburg, Va.; Dr. J. W. Wherry, secretary and treasurer, Dansville, N. Y.

Pith of Current Literature.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

October 25, 1906.

1. The Classical Symptoms of Hysteria, By PIERRE JANET.
2. Epidemic Cerebrospinal Meningitis. A Study of Its Ætiology, Diagnosis, and Epidemiology, Based Chiefly Upon the Cases Occurring in Worcester, Mass. (*To be continued*) By ERNEST L. HUNT.
3. The Routine Treatment of Syphilis with Intramuscular Injections of Mercury Salicylate, By W. H. PALMER.
4. External Eye Inflammations of Doubtful Origin, By H. GLOVER LANGWORTHY.

3. The Routine Treatment of Syphilis with Intramuscular Injections of Mercury Salicylate.—Palmer is a sincere advocate of mercury salicylate for intramuscular injections in syphilis. Given either by injection or by the mouth, there is an absence of the gastric irritation, diarrhœa, colic, and other objectionable symptoms produced by the other insoluble compounds at our disposal. As it is insoluble in water it is best administered in suspension, liquid petrolatum or some similar oily substance being used as a vehicle. It very rarely produces gastrointestinal symptoms or abscesses. The precaution of ascertaining if the needle has entered a vein should be carried out as a routine measure. There are only two situations available for the injection: The gluteal region, usually selected on the great mass of muscular tissue, and the interscapular region, but this one only for one or two injections. The changes produced in the tissue at the site of injection are described by Pezzoli, as follows: The muscle tissue contains numerous cavities of round or oval shape, filled with the suspension fluid and a small quantity of the unabsorbed salicylate, and are surrounded by giant cells and round cell infiltration. In addition to these changes waxy degeneration of the muscle cells and hyperplasia of the fat cells are present. Owing to the great number of muscle cells in the gluteal muscles, these changes do not affect the function of the muscles. The primary injection should consist of ½ gr. of the salicylate or 5 minims of the 1 to 10 suspension. This first injection is generally followed in two days by a second injection of ¾ gr. Four days is then allowed to elapse if there is no great necessity for rapid mercurialization, before the third injection of 1¼ gr. is administered. In order to treat syphilis properly the patient must be kept on an amount of mercury a fraction of a grain less than the quantity known to produce symptoms of mercurialism, and it is always better to produce a slight gingivitis or other symptom of mercurialism and in this way find out how much mercury is necessary to keep the patient under control, instead of giving smaller doses without the knowledge of the patient's tolerance. In more than 75 per cent. of syphilitics 1¼ gr. every seven days will suffice to keep the patient under control; but occasionally 1¾ and 2 gr. doses are found necessary. As to the length of time over which the treatment should extend, it is customary in this country to give a course of the injections for two years and then, after a rest of a few months, reinstitute treatment for six months or a year.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

October 27, 1906.

1. The Growth of Neurology, By WHARTON SINKLER.
2. The Motor Degenerative Sequence in Dementia, By H. A. TOMLINSON.
3. The Blood Pressure in Paresis, By G. L. WALTON.
4. Recent Contributions to the Physiology of the Circulation, By JOSEPH ERLANGER.
5. An Analysis of Eight Hundred and Eight Cases of Chorea, with Especial Reference to the Cardiovascular Manifestations, By W. S. THAYER.
6. Cardiac Hypertrophy as Observed in Chronic Nephritis, By NATHANIEL BOWDITCH POTTER.
7. Success. The Surgical Desideratum, By A. ERNEST GALLANT.
8. A Plea for the Scientific Administration of Anæsthetics, By JAMES TAYLOE GWATHMEY.
9. Medical Specialism, with Especial Reference to Proctology, By LEWIS H. ADLER, JR.
10. Surgical Aspects of Tuberculosis, By HERMANN B. GESSNER.
11. Testimony and Evidence in Medicine, By M. L. HARRIS.
12. National Supervision and Standardization of Food, By H. L. E. JOHNSON.
13. What Effective Measures Are There for the Prevention of the Spread of Syphilis and the Increase of Prostitution, By CHARLES GREENE CUMSTON.

3. The Blood Pressure in Paresis.—Walton reminds us that there is a general belief that the blood pressure in paresis is low. Observations of several authorities seem to endorse this statement, which would naturally lead to the hope that we have in blood pressure a practical aid in the diagnosis of paresis from other nervous diseases. In view of this the author has examined one hundred and eight male patients with this disease, and comes to the conclusion that the average blood pressure in paresis, taken as a whole, is high, and that it is doubtless due to the prevalence of atheroma with its cardiac and renal accompaniments. The average blood pressure in cases of paresis without atheroma, cardiac enlargement, or renal disorder, is probably somewhat lower than that of health, but the variations are so great that it cannot be said to be uniformly low. The test is not likely to prove of great practical value in the differentiation of paresis from other nervous disorders, though here, as elsewhere, it is of great value in estimating the circulatory condition of the individual. His observations are too few to establish a rule with regard to the blood pressure in varying emotional states. As far as they go, however, they tend to show (a) that the excited states of paresis are as likely to be accompanied by high as by low pressure; (b) that mental depression is accompanied by high oftener than low pressure, but that it is not incompatible with low pressure; (c) while the average pressure in euphoria is perhaps somewhat lower than in the other mental states of the general paralytic, it is not inconsistent with high pressure, or with pronounced atheroma with its cardiac and renal accompaniments.

5. An Analysis of Eight Hundred and Eight Cases of Chorea, with Especial Reference to the Cardiovascular Manifestations.—Thayer says that a consideration of his cases would suggest that well marked febrile manifestations, without rheumatism, occurring during the course of chorea, especially if they are associated with undue rapidity or irregularity of the pulse, should be regarded as at least strongly suggestive evidence of acute endocarditis. It may of course be possible that such fever is but the index of an infection which lies at the bottom of the choreic manifestations as well as the associated endocarditis. There is nothing, however, in these studies to justify conclusions with regard to the old question as to whether endocarditis in chorea represents a secondary infection or a special localization of an infectious agent which is responsible for the essential manifestations of the disease. The most important and interesting part of this investigation remains to be carried out, namely, the study of the circulatory conditions in old patients, but it may not be amiss to call attention again to certain points of interest brought out by this preliminary analysis: 1. Of 689 cases of chorea observed at the Johns Hopkins Hospital or Dispensary during one or more attacks, 25.4 per cent. showed evidences of cardiac involvement; such evidence was present in over 50 per cent. of the patients studied in the wards of the hospital. 2. Cardiac involvement occurred with somewhat greater frequency in those cases in which there was a history of acute polyarthritis than where such history was absent.

3. Cardiac involvement was commoner in cases of chorea with frequent recurrences than in those in which there was a history of a single attack. 4. In 110 cases of chorea treated in the wards of the hospital there was fever of a moderate extent in almost every instance. 5. In a large majority of the cases in which high fever was present there was evidence of cardiac involvement. 6. There is good reason to believe that the presence of fever in otherwise uncomplicated chorea is, in a large proportion of cases, associated with a complicating endocarditis.

8. **A Plea for the Scientific Administration of Anæsthetics.**—Gwathmey remarks that there is no more reason why we should adhere to the drop method of chloroform or the cone method of ether when a better and more exact method is produced than that we should continue to use the "one horse shay" when the automobile is available. A history of the inhalers and apparatus is given, which is followed by a description of the author's apparatus, using a known percentage of chloroform and oxygen (or air), and also an attenuated ether vapor, or any combination of these two drugs. Chloroform should never be administered, even by the drop method, at a normal temperature. This fact has been known of ether, but the value of warmed over chloroform has not been recognized up to this time. The author, therefore, made experiments with forty-three cats, and found that the chloroform vapor, when raised to the temperature of the blood, is almost two and a half times as safe as chloroform vapor as usually administered; and is nearly as safe as chloroform and oxygen, and is safer than ether and air. These experiments having been made on animals, it remains to be proved if the same results can be obtained on a human being undergoing a surgical operation. The combination of oxygen and warmed chloroform vapor gives us a close approximate to the ideal anæsthetic toward which we are gradually working. The author gives his history explaining these facts, and concludes that chloroform, heated to the temperature of the blood (100° F.) is more respirable, has less after effects, and is also less dangerous to life than chloroform as usually administered. The principal advantages of his method over all others are: 1. The administration of known percentages of chloroform or ether, separately or combined, in any desired proportion. If a change from one anæsthetic to the other is indicated, this is accomplished quickly. 2. Elimination for rebreathing and carbon dioxide. 3. The ability to maintain the desired level called for by the operation.

10. **Surgical Aspects of Tuberculosis.**—Gessner, referring to such cases of tuberculosis in which the disease has progressed to the point of destruction of tissue, to caseation, and to liquefaction, wishes to admonish the operator to make a clean sweep, of practising radical excision in all cases in which this is feasible, in preference to employing the slower method of aspiration and injection. In summing up, he arrives at these conclusions: Tuberculosis is of interest to the surgeon because it affects practically every region of the body with sufficient frequency to require that he be ever on the lookout for it. Early recognized and promptly treated, the surgical form is as amenable to treatment as any class of lesions with which we are confronted.

13. **What Effective Measures Are There for the Prevention of the Spread of Syphilis and the Increase of Prostitution?**—Cumston observes that syphilis is not, like smallpox, a disease whose miasms disseminate contagions to the distant parts; neither is it like any of the exanthemata, susceptible of producing itself spontaneously; alone, immediate contact produces its development. Its extinction, although difficult, is not a chimerical dream; and if all nations would some day establish a complete system of international prophylaxis, much could be done for suffering humanity. Scurvy has disappeared from those localities where it formerly reigned endemically; vaccination has stopped the ravages of smallpox, but syphilis still continues to be propagated and for centuries has not ceased to eat the limbs of the human race; leprosy has been practically done away with, why should it not be the same for syphilis? If the extinction of syphilis is not theoretically a dream, the universal consensus of opinion of all governments is that, in the present condition of society, it is a pure utopia. In point of fact, nations vary in character as do individuals, and a kind of mutual and systematic opposition is constantly present acting as an obstacle to their united action, and it is to be feared that this antagonism by continuing, will, for many years to come, offer a great resistance to the realization of any united efforts. If, at present, much has been done to prevent the extension of syphilis and other venereal diseases, it nevertheless remains a glaring fact that there is still much to be done, and that the large majority of prophylactic means now existing requires great modification. "To sum up," concludes the author, "it would seem to me that in order to deal with the spread of syphilis and prostitution, we should take into consideration the control of existing morals and opinions, teach the youth of our country the evils accruing from venereal diseases and the erection of proper hospitals for those already afflicted and who may become dangerous to society from this fact."

MEDICAL RECORD.

October 27, 1906.

1. Hospital Reform in a New Light, By HENRY S. STARK.
2. Choice of Cow's Milk, By J. ALLEN GILBERT.
3. Remarks on Cæsarean Section, with Report of a Case, By PAUL F. MARTIN.
4. The Joint Affections of Hæmophilia, By JOHN G. SHELDON.
5. The Mortality from Lobar Pneumonia in High Altitudes: A Summary of the Statistics at Three Military Hospitals in Arizona and New Mexico, By ISAAC W. BREWER.

4. **The Joint Affections of Hæmophilia.**—Sheldon says that the joint manifestations of hæmophilia have been studied for years, but on account of the condition being rare, it took time to learn the truth. The symptoms have been divided into three stages: (1) In which intraarticular hæmorrhage is the only change; (2) after repeated hæmorrhages have resulted in marked articular and periarticular changes, and have limited joint motion, and (3) when the process has resulted in ankylosis. Although the joint may pass through all of these stages, the early symptoms are the most important, and should be carefully studied. As a rule, the primary joint involvement comes at the age of four or five years. It may, however, occur shortly after birth, or be postponed until the patient is well grown. In the primary attack, the joint, with or without the history of a slight injury, suddenly becomes painful, swollen, hyperæmic, and tender. The pain is extreme, while the tenderness is not marked. Evidences of fluid in the joint cavity are present. A rise of temperature is the rule. A chill is not to be expected. The symptoms subside in about a week, only to be repeated by future involvements. Every attack leaves its evidences of having done permanent injury to the joint. The swelling and limitation of motion remain; or deformity and even ankylosis may be present. The importance of diagnosticating these joint affections cannot be overestimated. The history of the case is most important. In the primary attack, a leucocyte count may aid in excluding infections, but aspiration of the joint, followed by examination of the withdrawn fluid, should be resorted to in doubtful cases. In diagnosticating old cases the history of previous attacks is most important. An infection sufficiently severe to disorganize a

joint would not get well in a week. In treating acute cases, the joint should be aspirated by using a small needle. This diminishes the pain and at the same time doubtless assists in preventing the occurrence of permanent joint changes, while nothing can be done for the old cases.

5. The Mortality from Lobar Pneumonia in High Altitudes.—Brewer gives statistics of which he says that they are too few for generalization, but compared with the army at large they seem to show that elevation has little to do with the mortality from lobar pneumonia. He treated sixty-one patients for lobar pneumonia, doing duty at Fort Huachuca (5,042 feet above the sea), Fort Grant, and Fort Wingate (6,822 feet above the sea). All of these posts are west of the continental divide, and, excepting for the high winds that prevail in the spring and early summer, the climate is delightful. The sixty-one cases, covering a period from 1884 to 1904, showed a mortality of eighteen per cent., while for the army at large during the same period the mortality was 17.4 per cent. Thirty-three per cent. of the cases occurred in the spring, with a mortality of nineteen per cent.; seven per cent. occurred in the summer, with a mortality of twenty-five per cent.; forty-four per cent. in the winter, with a mortality of eighteen per cent.; while in the fall the proportion of cases was sixteen per cent., and the mortality twenty per cent.

BRITISH MEDICAL JOURNAL.

October 13, 1906.

1. The Study of Tropical Diseases, By K. Macleod.
2. Universities and Medical Education, By Sir J. Crichton-Browne.
3. Then and Now in Surgery, By C. A. Ballance.

(Seventy-Fourth Annual Meeting of the British Medical Association.)

Section of Pædiatrics.

4. A Discussion on Pneumococcal Infection in Early Life, By H. Ashby.
5. Osteogenesis Imperfecta. With the Report of a Case. With Autopsy, and Histological Examination, By R. W. Lovett and E. H. Nichols.
6. The Abdominal Atony of Rickets, Its Significance and Its Treatment: With Remarks on the Thorough Treatment of Rachitis, By W. Ewart.
7. Treatment of Tuberculous Abscess, By C. L. Starr.
8. Rheumatism in Children, By A. D. Blackader.
9. A Discussion on Enterocolitis, By C. G. Kerley, J. L. Morse, L. E. La Fétra, and others.
10. A Discussion on Congenital Pyloric Stenosis, By E. Cautley, H. J. Stiles, C. P. Putnam, and others.

4. Pneumococcal Infection.—Ashby states that it may be assumed that the pneumococcus of Fraenkel is the specific infection which, under suitable conditions of soil, is the inciter of a croupous or lobar pneumonia, and that, in association with other organisms, it plays the chief rôle in bronchopneumonia and in the pneumonia which occur as sequelæ of the zymotic diseases. A pulmonic infection is not a local disease of the lungs, but the cocci enter the blood stream, multiply there, and are carried to distant organs. For a pneumonic infection to produce pathological consequences a sufficient number of organisms must infect; these must possess or quickly attain high potency, and finally there must be an enfeebled resistance of the body cells of the individual. Both seed and soil must be taken into account. Presumably the breeding ground or habitat of the pneumococcus is the nasopharynx and its vicinity in healthy people. The life of the pneumococcus outside the body is only maintained with a struggle. It may retain its vitality for a while in dried sputa or nasal secretions, but it quickly dies when exposed to fresh air and sunlight. Pneumococci do not occur in the blood stream in health, the adenoid tissue playing an important part as a filter. They may, however, become pathogenic in their habitat causing membranous inflammations of the conjunctiva or mouth. A pneumococcic infection of the lungs is more apt to spread to adjacent parts by contact than *via* the blood stream to distant parts. Associated infections of the lungs and peritonæum are not uncommon. Acute pneumococcæ peritonitis, proving quickly fatal, and without any associated pneumonia, is not rare, most of the cases occurring in girls. After the tubercle bacillus and the meningococcus, the pneumococcus is the commonest cause of meningitis.

5. Osteogenesis Imperfecta.—Lovett and Nichols report a case of this disorder. The name is applied to those somewhat rare cases in which multiple fractures occur during intrauterine life or in infancy. Other terms formerly used were fœtal rickets, infantile osteomalacia, fragilitas ossumi, idiopathic osteopsathyrosis. Nothing is known as to the ætiology of the condition, except that there is a strong element of heredity. The number of fractures which may occur in one individual is surprising; in one case 113 were counted. In new born children with the disease there is generally a combination of old fractures, united and partly united, and of loose recent fractures. Where fractures occur after birth union is generally good and quick. The long bones are the ones chiefly broken, and the thigh most often. The shoulder blades, skull, pelvis, and spinal column are apparently exempt. Hydrocephalus, clubfoot, and rachiocleisis are rare associated deformities. Deformities are common and are of two kinds: (a) Due to improperly united fractures; and (b) curving and bending of the bones due to the disease itself. Very common is forward bending of the tibia. The children are small at birth, and the extremities are short. A cretinoid type of face is often seen. The bones cast a feeble x ray shadow. The prognosis is unfavorable, many of the children dying soon after birth. No satisfactory treatment of the condition has been formulated.

6. Abdominal Atony in Rickets.—Ewart calls attention to the importance of abdominal atony and distention in rickets. It affects the gastrointestinal motor functions both as to excretion and secretion; it interferes with the circulation and produces passive portal congestion; it produces functional and anatomical alterations in respiration; and, finally, it causes eversion of the costal arch. Two measures are of great value in the special treatment of the abdominal atony: 1. Massage of the abdomen, which invigorates the muscles, reduces the distention, disperses visceral congestion, and assists respiration. 2. The use of an elastic abdominal belt; this is automatic, gives lateral support to the weak abdominal parietes, improves the distribution of the blood and corrects the apparent oligæmia, and is of the greatest assistance to the respiration. Above all, it stimulates the growth of the abdominal muscles.

8. Rheumatism in Children.—Blackader, while not fully accepting the *Micrococcus rheumaticus* as the cause of rheumatism, holds that the affection is an infectious disease. In childhood the purely arthritic manifestations of rheumatism may be wanting, and be replaced by chorea, tonsillitis, pleurisy, exudative erythema, epistaxis, etc. Simple muscular pain and tenderness must be occasionally regarded as manifestations of rheumatic infection. Rheumatism may be associated with any form of tonsillitis, quinsy has probably the closest association. Anæmia is a constant manifestation of rheumatism. Regarding the tonsils as the pathway of infection, all necessary treatment of them should be prompt and thorough; adenoids should be carefully removed.

9. Enterocolitis.—Kerley sums up his suggestions as to the prevention of enterocolitis, in the word "education." The mother must be educated how to live, how

to care for, clothe, bathe, and feed the baby during the summer; as to the importance of fresh air; and what to do when the first symptoms appear. Municipalities must realize their duties, farmers must produce safe milk, and physicians must instruct the mothers. Shaw and Gilday have studied the question of the absorption of fats in infants and reach the following conclusions: 1. About four per cent. in nurslings and five per cent. in bottle fed infants of the fat ingested appears in the fæces. 2. The fat in the fæces is that which has escaped digestion. 3. The fatty compounds in the fæces exist as neutral fat, fatty acids, and soaps. The fatty acids are usually in excess. 4. The soaps are relatively increased in artificially fed infants, in infants with a low percentage of fats in the food, and in infants with diarrhœa.

THE LANCET

October 13, 1906.

1. A Case of Infective Endocarditis Involving the Pulmonary Valves and Associated with Imperfection of the Interauricular Sæptum. By T. W. GRIFFITH.
2. King's College Hospital: A Retrospect, By T. P. TEALE.
3. Abstracts of Introductor Addresses.
4. A Contribution to the Pathology of Chorea, By F. J. POYNTON and G. M. HOLMES.
5. The Type in School Books and College Textbooks, By R. T. WILLIAMSON.
6. Agoraphobia. A Remedy, By C. MERCIER.
7. A Case of Cerebral Tumor Giving Rise to Jacksonian Epilepsy, and at a Later Stage, Coma; Operation; Removal of Tumor; Recovery, By J. A. C. MACEWEN.
8. The Prevention of Cancer Regarded as a Practical Question Ripe for Solution, By C. B. KEETLEY.
9. The Workmens' Compensation Bill (as Amended by the Standard Committee on Law), By A. BENTHALL.

4. Chorea.—Poynton and Holmes present the hypothesis that rheumatic chorea is probably the outcome of an infection of the brain and its meninges with the diplococcus rheumaticus—a cerebral rheumatism. They report three fatal cases of chorea in which the diplococcus rheumaticus was present in the pia mater. In addition this microorganism was demonstrated in the brains of these cases, lying in the perivascular spaces and connective tissues. They also report a case of chorea occurring in a first pregnancy, in which lesions were present similar to those found in the rheumatic cases. The pathological changes in chorea are composed of (1) vascular and inflammatory changes in the central nervous system and its membranes; and (2) changes in the nervous tissue itself, consisting of destructive lesions secondary to the vascular changes and of alterations in the morphological characters of the nerve cells. The authors hold that the changes described are due to the action of bacterial toxines of a rheumatic nature on the brain. There is also probably a local infection. When chorea follows acute arthritic or cardiac rheumatism the cerebral infection may date from the original one, and have remained latent for some time. In other cases an entirely new infection may have occurred, which this time has attacked the brain. Lastly, the cerebral infection may be metastatic from a focus of infection elsewhere, which itself was the result of the original attack. This focus may be situated, for instance, in the heart or joints. Chorea is to be grouped among the more transitory of rheumatic lesions, for though some cases last for many years, yet the anatomical lesions are clearly recoverable from. But a child's nature may be entirely changed by an attack of rheumatism, particularly if this be of the cerebral type.

6. Agoraphobia.—Mercier reports a case of agoraphobia, or fear of open spaces, which was cured by a very severe mental shock received by the patient—his daughter having run away from home and joined a lover. Agoraphobia is not nearly as common a malady as its antithesis, claustrophobia. Both are curious states of mind in which an aversion, which is known and admitted by the subject of it to be irrational and absurd, nevertheless dominates conduct, prompts the execution of irrational acts, and renders certain rational and desirable acts impossible. The author assigns both to the revival of instincts which existed in full force in our remote arboreal ancestry. On the ground among open spaces they were probably easily caught and devoured by carnivorous foes; in the tree tops they were safe.

8. The Prevention of Cancer.—Keetley thinks that the grounds for attributing cancer to some living organism are exceedingly strong. He thinks that the time has come when we can lay down the following rules for the prevention of cancer: 1. Sterilize the food. The majority of cancers attack the alimentary canal, and especially the parts where food and fæces tarry—e. g., the lips, the tongue, the tonsils, the œsophagus, the lesser curvature of the stomach, the pylorus, the ileocæcal region, the sigmoid flexure, the rectum, and the lower part of the large bowel. 2. The sufficient and regular toilet, and protection of the nipples and genitalia. These organs, so frequently attacked by cancer, are specially often polluted by stale secretions and discharges, and are more often handled than any other part of the body usually covered by clothing. During lactation special attention should be paid to cleanliness and dryness of the nipple, and to cleanliness of the infant's mouth. 3. Due care of the mouth and teeth. 4. The dressings of discharging malignant ulcerations should be destroyed carefully, and not allowed to pollute either the fingers or the under linen. 5. Nonmalignant sores and tumors should be cured and especially not allowed to drift on if chronic. 6. As a matter, of course, cancerous and doubtful tumors and ulcers should be excised promptly. Early removal of a cancer performed in a correct and thorough manner not only gives the patient an excellent prospect of complete cure, but also removes a possible focus from which other people may acquire cancer. 7. Abstinence should be practised from alcohol, tobacco, and from foods which leave waste products, of which the kidneys, the bowels, and the skin cannot easily and thoroughly get rid, and which thereby provoke and sustain the chronic inflammations and ulcers which so often pave the way for cancer. Excess of meat eating should be strictly avoided. 8. Physical familiarity should be avoided, except with those who are nearest and dearest to us. 9. Much thought should be given to the service as well as to the cooking of food. Cooks and kitchen maids should be provided with all reasonable facilities for keeping their persons clean and their utensils aseptic, and should be regularly observed at their work in order to see if they have contracted aseptic habits. Special attention should be paid to the sterilization of milk and its products; milk comes into close contact with the skin, is analogous to the secretions of sweat glands, and finally comes from just that portion of the outside of the body which is most prone to cancer.

LA PRESSE MEDICALE.

October 3, 1906.

1. The Tardy Pains of the Stomach and Their Treatment, By LEON MEUNIER.
2. Superficial Foreign Bodies in the Eye, By H. JOSEPH.
3. Apropos of the Pathogeny of Cyanosis with Hyperglobulia and Splenomegaly, By R. ROMME.

1. Tardy Pains of the Stomach.—Meunier says that the tardy pains of the stomach are not caused by an excess of hydrochloric acid and that their classical treatment is not the preferred. The relief obtained by the administration of alkalies is not due to their direct action, but to the carbonic acid gas which is generated, and he thinks it would be more rational to produce the

carbonic acid in the stomach by means of carbonates and tartaric acid in suitable doses.

2. **Superficial Foreign Bodies in the Eye.**—Joseph divides his paper into three heads, to find the foreign body, to remove it, and to treat subsequent complications. When the foreign body cannot be readily seen on the cornea, the conjunctiva or in the conjunctival *cul de sac* it may usually be detected readily by means of oblique illumination with a convex lens. or after the instillation of a drop of a solution of fluorescine into the conjunctival sac. After cleansing the eye with an antiseptic solution he uses cocaine, or cocaine and stovaine, as an anæsthetic, and then removes the foreign body with a suitable instrument. Occasionally the traumatism is followed by an ulcer of the cornea, which may be slight or of great severity, and this portion of Joseph's paper may be condensed into the statement that ulcers of this nature demand treatment as such without reference to their primal cause.

October 6, 1906.

Hygiene of Æration. The Street, the Yard, By A. Augustin Roy.

LA SEMAINE MEDICALE.

October 10, 1906.

Congenital Rickets, By A. B. Marfan.

Congenital Rickets.—Marfan finds that in all cases of congenital rickets the mother was affected by a serious disease during pregnancy, excessive over exertion, infection, or intoxication. Hereditary syphilis is a very prominent cause.

MUENCHENER MEDICINISCHE WOCHENSCHRIFT.

October 2, 1906.

1. The Value of Examination of the Thorax with the X Rays in Pneumonia, Particularly when in a Central Location, By Rieder.
2. Therapeutical Attempts to Cure Cancerous Tumors by the Method of Anæsthetization, By Spiess.
3. Further Contributions to the Bacteriology of the Blood in Typhus, By Kayser.
4. The Sesamoid Bones in the Metatarsophalangeal Joints, By Stieda.
5. Contribution to the Study of the Pulsus Alternans, By Hornung and Galli.
6. Ineffective Treatment of Stomach Diseases by Drinking Mineral Waters, By Ageron.
7. The Influence of Suction Hyperæmia on the Healthy Eye and the Course of Certain Diseases of the Eye, By Hoppe.
8. An Apparatus to Govern the Dosage in the Production of Narcosis, By Schubert.
9. A Case of Pubotomy, By Brenner.
10. Foot Holder to Hold the Foot in Position During the Application of a Bandage, By Burk.
11. A New Washable Binder, By Maas.
12. A Fixation Forceps for the Uterus, By Prüsmann.
13. An Apparatus for Drawing Upon Slight Hæmorrhages, By Wieck.
14. Protective Mask for the Face According to the Design of Dentist Otto Eichentopf, By Breitung.
15. Suggestions for the Practical Maintenance of Individual Care in Bath Resorts, By Silbergleit.

1. **Radioscopy of the Thorax in Pneumonia.**—Rieder quotes a number of cases in which he has watched the varying condition of the lung in the course of the disease, and illustrates his article by the reproduction of twenty radiographs taken of the lungs of two patients at different times.

2. **Treatment of Cancers by Anæsthetization.**—Spiess reports eleven cases of inoperable cancer into which he injected nirvanin. He reports them without comment, but the results obtained do not seem to the reviewer to have been very successful.

7. **Suction Hyperæmia on the Eye.**—Hoppe has devised a suction apparatus which may be applied to the eye for the purpose of inducing a local hyperæmia, and reports that he has obtained good results with its aid in the treatemnt of various forms of acute and chronic diseases of the lids and conjunctiva.

9. **A Case of Pubotomy.**—Brenner reports a case in which a contracted pelvis offered such an obstruction to labor that rupture of the uterus was threatened. He performed pubotomy, and considers that in such cases nothing is simpler than this operation.

ZENTRALBLATT FUER GYNAEKOLOGIE.

October 6, 1906.

1. Festschrift to Professor Pozzi, By H. Fritsch.
2. A Case of Pseudocyesis in a Forty-eight Year Old Multipara, By Krummacher.

1. **Pozzi's Festschrift.**—Fritsch reviews the Festschrift given to Professor Pozzi on the occasion of the twentieth anniversary of his connection with the Hôpital Broca. Pinard writes on Sterility, Boeckel on Total and Subtotal Hysterectomy, Thiéry on Appendicitis, Faure on Abdominal Hysterectomy, Barnsby on Extrauterine Pregnancy. There are other papers on gynæcological and historical subjects, commented upon and criticised by the reviewer.

2. **Pseudocyesis.**—Krummacher reports a case of pseudocyesis in a woman, forty-eight years of age, who had previously borne four children. The patient was undergoing the menopause and had not menstruated for five months previous to her examination. She had noticed an increase in the size of her abdomen, hips, and breasts. She thought she had also felt signs of life. The examination disclosed a small uterus. The patient was certain she was pregnant, but after a few weeks became convinced that she was in error. She was a highly educated, healthy, and nonhysterical person.

ZENTRALBLATT FUER CHIRURGIE.

October 6, 1906.

1. The Significance of the Acute Angled Knee in Flexion Contracture of the Hip Joint in Severe Cases of Coxitis, By C. Lauenstein.

1. **The Knee in Coxitis.**—Lauenstein points out that in old and especially in severe cases of coxitis, there is a marked contracture in the anterior femoral muscles in the flexed position. This puts the knee in the position of an acute angle. If attempts at reduction are made it sometimes happens that a fracture of the femur is brought about, and always at one point, the lower epiphyseal line. He narrates two such cases. The fracture is due to the secondary flexion of the knee and the atrophy of the bone at the epiphyseal line, both of which conditions are favored by the long continued disuse of the extremity.

LA RIFORMA MEDICA.

September 29, 1906.

1. Cystadamantinoma of the Interior Maxilla (*To be continued*), By Oreste Cignozzi.
2. An Interesting Case of Diffuse Neurofibroma. Neuroma. Recklinghausen's Disease (*Concluded*), By Cristofore Pastine.
3. Primary Sarcoma of the Right Lung, By Giuseppe Finzi.

2. **Diffuse Neurofibroma.**—Pastine reports a case of diffuse neurofibroma. A study of this case does not give the author any clue as to the cause of the disease. Heredity, which has often been invoked as a cause, cannot be absolutely excluded, but in this instance there was no history of the same trouble in the family, although the patient was predisposed to nervous disease by heredity, inasmuch as one of his sisters had frequent convulsions at the period of puberty, and a number of the children of the family had died young. No stigmata of degeneration, however, were noted in the patient. The disease began very insidiously, as is usually the case with this trouble, subjectively, however, it became manifest suddenly by a violent pain on the internal aspect of the left arm where a neurofibroma

had developed. The patient had reached an advanced age, sixty-seven years, at the time of the onset of the disease the course of which was rather benign.

3. **Primary Sarcoma of the Lung.**—Finzi's patient was a man, aged fifty years, who had complained of an obstinate cough for several months before admission. Later a yellowish, white expectoration appeared, which was streaked with blood, and the attacks of cough were sometimes followed by vomiting. A feeling of pressure and of pain was felt in the chest, and during the last two weeks there was pain on swallowing when the bolus passed through the œsophagus. There was no history of syphilis. On examination an area of dulness and of bronchial breathing was discovered anteriorally from the clavicle down to the fifth rib extending into the axillary region on the right side. The heart was displaced to the left. Sacculated pleurisy was excluded by negative exploratory puncture. The autopsy showed that the tumor was a lymphosarcoma occupying a considerable portion of the right lung.

ROUSSKY VRATCH.

September 16, 1906.

1. Tumors of the Orbit Due to the Extension of Cystic Growths in the Frontal Sinus, By I. E. HAGEN-THORN.
2. Two Cases of Scleroderma, By M. D. KHAMUTINA.
3. Infection Through the Umbilicus as a New Method of Vaccination, By V. P. ZHUKOFFSKY.
4. The Physical Signs of Dementia Præcox, By S. A. BRUSTIN and G. G. NAKHSIDOFF.
5. On the Epidemiology and Prophylaxis of Diphtheria, By N. P. NETCHADIMENCO.
6. Smooth Metallic Foreign Bodies in the Intestinal Tract, By K. P. LEBONEFFSKY.

1. **Tumor of Orbit Due to Disease of Frontal Sinus.**—Hagen-Thorn describes a special form of orbital tumors which is exceedingly rare and which are secondary to a cyst like extension of the frontal sinus as the result of chronic inflammation. Tumors of the orbit are rather difficult to diagnosticate, and the special form described presents even greater difficulty in diagnosis than the other type. Most textbooks do not mention the form described by Hagen-Thorn, or continue to use the old name of hydrops of the frontal sinus or of neurocele, the cause of which is a chronic inflammation of the frontal sinus and the occlusion of its duct. The most complete description of the diseases of the frontal sinus are found in the handbook edited by Heymann, and in this work the type of chronic frontal sinusitis with dilatation is recognized, sixty-four cases from literature having been collected. The dilatation takes place very slowly, and in a year or two reaches such dimensions that several hundred c.c. are contained in the cavity. The contents of the sinus are usually mucus or mucopurulent, and the walls of the sinus become so thin that they crackle like parchment on pressing. The process may also involve adjoining cavities, and may last for a great many years. In most cases the tumor presses upon the orbit and displaces it forward, but in some instances it pushes upward into the temple and into the frontal bone. The cause of the disease is rather obscure, although some French authors have shown evidences of a pure cyst formation in the frontal sinus. The only characteristic symptoms are the displacement of the eyeball, the wearing out of the bone which grows thin, and can be felt to give way, while a history of traumatism can be often obtained. The method of treatment has not yet been thoroughly worked out, but such operations for opening the frontal sinus, as Jansen's, Killian's, Ogston-Luca's are advocated.

3. **Vaccination Through the Umbilicus.**—Zhukoffsky thinks that the time for vaccination is soon after birth when very nearly one hundred per cent. of successful inoculations can be obtained with far less marked reaction than is noted in older children. He reports the results of a series of operations on vaccination into the umbilicus. He used a very active animal or humanized vaccine. In this manner he inoculated over one hundred newly born children. In all cases there was a slight febrile movement of short duration, and the umbilical stump atrophied and fell off without any complications, thus removing all traces of the inoculation. In the course of five months, during which the experiments have been conducted in a lying-in asylum, not a single case of infection of the umbilicus or of the umbilical vessels had occurred. In two infants who had died of accidental causes (cerebral hæmorrhage) no trace of umbilical disease had been noticed on autopsy. For the purpose of controlling the immunity of these children a number of them were inoculated in the arm at varying intervals after the first inoculation into the umbilical stump, and in no case was the secondary inoculation successful, thus showing that immunity had been obtained through the first. The author promises a more detailed report at some future date.

5. **The Prevention of Diphtheria.**—According to his study, Netchadimenco thinks that the clinical diagnosis of diphtheria in a large number of cases is confirmed only in sixty-five per cent. of instances. It is very important to keep patients with diphtheria in the hospital or in isolation until all traces of the diphtheria bacillus have disappeared from the mouth and throat. Cases of infection have been reported three months after convalescence. The author examined a series of convalescents from diphtheria in a military school, and found the bacillus in one case thirty-four days after the disappearance of the membrane, in another case twenty-six days after, in four cases after eighteen days, in three cases after fifteen days, etc. During an epidemic healthy persons can harbor virulent diphtheria bacilli in their throats, and every possible measure should be taken to isolate such persons, although this is very difficult. Various observers have found that from four to seven per cent. of isolated persons who have the bacilli in their throat actually develop the disease. An important point in the prevention of diphtheria is the accurate diagnosis of chronic fibrinous rhinitis which is very often diphtheritic.

THE ARCHIVES OF PHYSIOLOGICAL THERAPY.

September, 1906.

1. An Unusual Case of Dementia Præcox, Associated with Epilepsy, and a Most Extensive Bromide Eruption, By CURRAN POPE.
2. A Case of Frozen Feet Treated by Thermotherapy, By FRANCIS S. SKIFF.
3. High Frequency Currents in the Treatment of Small Benign Neoplasms and Hypertrophies of the Skin, By JOHN T. RANKIN.

1. **An Unusual Case of Dementia Præcox, Associated with Epilepsy, and a Most Extensive Bromide Eruption.**—Pope describes such a case and expresses his opinion that he believes we could lessen the attacks of epileptics, and, if taken early enough, before the habit becomes confirmed, cure many cases of this disease, would we, as a profession, study more intelligently the causal conditions, the removal of which would aid in lightening the burden of the overtaxed central nervous system. After sixteen years of active experience in the treatment of epilepsy, he feels warranted in saying that in no domain of therapeutics is there a greater hope held out to the epileptic than in hydrotherapy. It has, in his hands, done more to cure these unfortunate individuals than any other one method. Dementia præcox is a disease the pathology of which is unknown—possibly congenital. Its prognosis is unfavorable, a small percentage of the cases getting well, and others having remissions, but the majority passing into a state of dementia and remains there, until carried off by some intercurrent diseases.

2. A Case of Frozen Feet Treated by Thermotherapy.—Skiff reports a case of a patient who had frozen his feet slightly the previous winter, but severely this last winter, the toes of both feet were lifeless, and there was little sensation in half of each foot when pricked with a needle. The treatment for the first three days consisted of hot bichloride packs, 1 to 1,000, but then it was decided that local dry hot air applications would better meet the indications and be a scientific method of treatment. The patient was therefore ordered to place his feet in the apparatus at a temperature of 140° to 150° F., three or four times a day for from an hour to an hour and a half each time, during a period of two weeks. After two treatments the patient stated that he noticed improvement, great layers of skin desquamated from both feet and toes; the feet were ultimately saved with the exception of a part of the two great toes and the second toe, which, becoming gangrenous and the line of demarcation having formed, were amputated.

3. High Frequency Currents in the Treatment of Small Benign Neoplasms and Hypertrophies of the Skin.—Rankin says that the treatment of small localized hypertrophies and benign neoplasms of small size belongs to the high frequency currents. The author has used them in a good many cases for the removal of warts, freckles, pigmentary and vasculæ nævi, and in the great majority of cases with very satisfactory results; especially the character of the resultant scar which has been either imperceptible unless closely examined, or at the worst, has left only a pinkish scar of soft texture. The electrical current which the author has used in this work is derived from the Oudin type of resonator, energized by an induction coil carrying from one and three quarters to three ampères through the primary, and interrupted by a mercury jet break. The electrode used was the ordinary needle holder for electrolysis, inserting in place of the needle a piece of pointed copper wire; these wire points may be of different sizes and either very sharp or blunt, according to the character of the spark desired. The electrode must be specially insulated with heavy hard rubber tubing. The current passes by one wire from the extremity of the resonator drum, the monopolar method. The site of application and the area surrounding, should be rendered aseptic, and all recognized precautions should b etaken to prevent the entrance of septic organisms into the wounded tissue. In applying the spark, the patient should recline on the operating table, as he is more under control in this position than while sitting. It will seldom be found necessary to use an anæsthetic, as, in the majority of cases the high frequency spark produces more or less anæsthesia after a few moments' application. A mild current producing a small spark is passed through the apparatus, and after a few second a stronger current may be used and the point of the electrode gradually withdrawn from the surface until a spark varying from one to two centimetres in length is secured. This, of course, must be regulated by the toleration of the patient and the amount and rapidity of tissue destruction desired. The time of each individual treatment and the number of treatments necessary to secure the desired result will vary.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

October, 1906.

1. Some Experience with the Simpler Methods of Psychotherapy and Reeducation, By L. F. Barker.
2. The Value of a Study of the Apical Outline in the Diagnosis of Incipient Pulmonary Tuberculosis, By C. L. Minor.
3. The Röntgen Rays in the Early Diagnosis of Pulmonary Tuberculosis, By W. Lehmann and W. C. Voorsanger.
4. Hæmatological Studies in Tuberculosis, By A. C. Klebs and H. Klebs.
5. Further Notes on the Serum Diagnosis of Tuberculosis, By H. M. Kinghorn and D. C. Twichell.
6. The Clinical, Anatomical, and Pathological Comparison of Tuberculous Cavities in the Lungs, By H. R. M. Landis.
7. Statistics of Diet in Sanatoria for Consumptives, By I. Fisher.
8. The Relative Value of the Home Treatment of Tuberculosis, By L. F. Flick.
9. The Ætiology, Prognosis and Indications for the Surgical Treatment of Tuberculous Peritonitis, By R. Douglas.
10. The Protection of Infants and Young Children from Tuberculous Infection, By J. L. Morse.
11. Tuberculosis Among the Negroes, By T. J. Jones.
12. Tuberculosis Among the Ogalada Sioux Indians, By J. B. Walker.
13. Organic Heart Diseases and Immunity from Pulmonary Tuberculosis, By B. Stow.

1. Psychotherapy and Reeducation.—Barker thinks that psychotherapy should not be discarded because it has been abused by some who have used it. Neither should it be discarded as a subject for medical students because some will use it improperly. The experience of Déjerine at the Salpétrière is quoted as an example of its great possibilities for usefulness. It is suggested that one who has required treatment of this character and has been benefited will be most likely to use it successfully. One who employs it should be skilled in all the modern refinements of diagnosis, and should exhaust them in the study of his case before beginning his therapy. He must give much time to each patient and must be encouraging and cheerful. Of course he will make some mistakes, but not many serious ones if he is honest. Reeducation is one of the most important factors in producing lasting cures, but one should not be deceived into thinking he has made a cure by merely driving away a symptom. It often happens that only by influencing slowly the mind and body by careful reeducation can a real cure be made.

3. The Roentgen Rays in the Early Diagnosis of Pulmonary Tuberculosis.—Lehmann and Voorsanger found as the result of their investigations that the clinical and x ray findings agreed for the most part, but that in the majority of the cases the x rays afforded valuable information as to the extent of the lesions which were often more widespread than the ordinary clinical evidences seemed to suggest. When the diagnosis was in doubt, on account of absence or insufficiency of clinical signs, the x rays showed a peribronchial or bronchial gland affection, the value of which in prognosis as well as in diagnosis, is very great. In a few cases involvement of the apex which was clinically apparent was not recognizable by the x rays because recent infiltration, though sometimes sufficient to cause clinical signs, may not be sufficiently dense to produce a shadow or haziness on the x ray plate or screen.

4. Hæmatological Studies in Tuberculosis.—The Klebs's quote the following conclusions of Stein and Erbmann: 1. Increase of leucocytes in tuberculous subjects, in the absence of chronic inflammatory process, signifies cavity formation in the lung. 2. The beginning of cavity formation can be determined by consecutive counts of the leucocytes, and by a sudden increase in their number after a prolonged normal period. 3. Cavity formation can be excluded in most cases if normal numerical conditions are found. The increase of the leucocytes is not due to the tuberculous virus as such, but is a consequence of septicæmia, caused by certain highly virulent bacteria, not by mixed infection. As a means of prognosis Klebs's does not feel that valuable conclusions could be drawn from the condition of the blood pictures, especially since the disease was far advanced in most of the cases which were studied. It is thought that the examination of patients in the first and second stages of the disease, and of those who have

been treated with tuberculin will throw further light on the question. This method of investigation is simpler than others, and especially is it simpler than the method which determines the opsonic index.

6. **The Clinical, Anatomical, and Pathological Comparison of Tuberculous Cavities in the Lungs.**—Landis finds as the result of analysis of a large number of cases that no great accuracy has been manifested, especially in the estimation of conditions simulating cavity formation. The results were good in cases in which cavities were actually present, the majority of those which escaped notice being small, and the post mortem findings explaining the cause of failure. Basing the value of the various signs on the frequency with which each occurred, whispering pectoriloquy was observed in fifty-five out of fifty-eight, tympany thirty-nine out of fifty-eight, cavernous or amphoric breathing thirty-eight out of fifty-eight, gurgling râles thirty-three out of fifty-eight. Whispering pectoriloquy, though most frequent, was absent in well marked cavities. Its presence also sometimes led to a diagnosis of cavity when other conditions, for example consolidation about a bronchus, were the real cause. Any one of these signs suggests a cavity, and the presence of two or more of them increases the probability.

8. **The Relative Value of the Home Treatment of Tuberculosis.**—Flick states that in comparing the home treatment with climatic treatment he has expressed his convictions based upon personal experience and general knowledge of the subject. He has no desire to prejudice health resorts, nor belittle the work of those who reside in them. If health resorts can produce better results than those which are obtainable at the homes of patients the facts ought to be brought forward by those who control the health resorts. The author pleads for the truth and for honesty from each individual's point of view. In the writer's judgment the treatment of tuberculosis can better be carried on at present in the home of the patient, if expert services can be rendered, than at a health resort. For those who live where expert services cannot be had, the health resort is to be preferred.

9. **The Surgical Treatment of Tuberculous Peritonitis.**—Douglas thinks the general conclusion is justified that tuberculous peritonitis can be cured by laparotomy. The unsuccessful cases are those which have advanced disease in other organs. The probable explanation of cure is that the manipulation and exposure cause an afflux of normal serum which is antitoxic. Repeated operations should be performed if the fluid reaccumulates, especially if the first operation occurred early in the history of the disease. The immediate operative mortality is very small. From fifty to seventy per cent. seem to be permanently cured. Mayo thinks the disease originates in a local focus, and that the ultimate prognosis depends upon the ability to remove the primary site of the disease. Recovery is quite possible under simple medical treatment, and anatomical restoration may be obtained. Tuberculous infection of the parietal wound does not occur. A rather frequent complication is fæcal fistula, and this is very difficult to cure.

11. **Tuberculosis Among the Negroes.**—Jones shows by charts that this disease is more prevalent among negroes than among the people of any other race. In the cities of the South the death rate is two to three times as great among negroes from this disease as among whites. The mortality was lower before the civil war than since. The mortality for negro children under fifteen is seven times greater than that of white children. Little has been done as yet to check this great mortality, very little systematic relief has been organized. It is not to be forgotten that the black race exerts a reflex influence upon the white. As a Southern paper has forcibly put it: "If we do not help to lift them up, they will help to pull us down."

THE JOURNAL OF NERVOUS AND MENTAL DISEASE.

October, 1906.

1. The Subdivision of the Representation of Cutaneous and Muscular Sensibility and of Stereognosis in the Cerebral Cortex,
   By CHARLES K. MILLS and T. H. WEISENBURG.
2. Ear Affections and Mental Disturbances (*Concluded*),
   By EMIL AMBERG.

1. **The Subdivision of the Representation of Cutaneous and Muscular Sensibility and of Stereognosis in the Cerebral Cortex.**—Mills and Weisenburg say that the main object of their paper is to present the following propositions: 1, That the cortical representation of cutaneous and muscular sensibility is independent of motor representation, that it surrounds the motor zone, and that it is subdivided into a mosaic of centres, each centre or group of centres being anatomically and functionally correlated to a motor centre or centres; 2, that every muscle or group of muscles producing a movement or movements which are represented by separate centres in the cortex is topographically related to a segment of the skin which has also a definite cortical centre, this centre being correlated anatomically and functionally with the motor centre; 3, that stereognostic representation like that of cutaneous and muscular sensibility and of movements has also its independent cortical area, and is subdivided after the manner of the motor and sensory areas. It will be seen that according to these propositions, the representation of cutaneous and muscular sensibility and stereognosis is not only for the face, arm, trunk, and leg, but for subdivisions of these parts. The acceptance of the view that the motor zone is entirely cephalad of the central fissure gives a position of advantage in discussing the question both of separate motor and sensory representation and of the subdivisions of the latter. Those who believe that the cortical motor and sensory areas are identical have until recently been in the majority, but the weight of opinion is now in favor of the separatists. The writers accept without qualification the view that the motor area is cephalad of the central fissure. The authors refer to nine cases, which were previously reported and add four studied by themselves.

2. **Ear Affections.**—Amberg concludes that the ear participates in the production of mental disturbances, directly and indirectly. As an organ of sense, its functional disturbance may disharmonize the normal state of thinking. The mental disturbance can be brought about in two ways: First, by causing hallucinations, respectively, illusions, the influence of which is more or less strong according to the predisposition of the afflicted individual. Entirely different from these disturbances are those in which the ear and its surrounding parts are simply the place in which a toxæmia is primarily created, or in which an abscess engages the vitality of the body. Both conditions, while entirely different from each other clinically and pathologically, can produce mental disturbances and aggravate preexisting mentally abnormal conditions. It is very probable that also without a predisposition a mental disturbance can be created if, e. g., the annoying subjective noises create a state of exhaustion, e. g., neurasthenia. These conditions are of great import from a forensic point of view and must be considered in declaration of witnesses. We are confronted with the important question whether the consent to an operation is required of an adult patient whose mental activity is temporarily interfered with and who is unable to judge about his condition, also if the consent of the relatives is necessary in such a case. The organs of hearing of inmates of insane asylums should be examined. Patients suffering from mental disturbances who exhibit phenomena on the part of the organ of hearing should be examined not only for pathologic conditions of the ear,

but also of other organs, e. g., of the kidneys, on account of the fact that the disturbance in the ear, although in itself a new centre, may only be a reflex disturbance. The benefit of surgical interference in ear affections should be bestowed upon the insane in need of it.

ARCHIVES OF THE ROENTGEN RAY.

October, 1906.

1. Radiotherapy and Neoplasms, By J. Belot.
2. X Rays in the Treatment of Cancer, By Mr. Chisholm Williams.
3. The Treatment of Superficial Malignant Neoplasms by Radiotherapy, By F. Bisserié.
4. The Treatment of Malignant Disease by Radium and the X Ray, By Robert Abbe.
5. A Case of Laryngeal Carcinoma Treated by the X Rays, By A. Knipers.

Cancer and Radiotherapy.—This issue is a special cancer number. 1. Belot, after reviewing the history of the Röntgen rays in the treatment of cutaneous epithelioma, says that in the treatment of neoplasms there are three principal factors to be considered. One is of a purely physical nature—*i. e.,* the depth beneath the surface at which the neoplasmic elements are situated; the remaining two are biological in character—*i. e.,* the specific susceptibility of the cellules to the x ray and the rate of evolution of the tumor. These general considerations apply with equal force in the radiotherapy of all types of malignant disease—cutaneous epithelioma, carcinoma, and sarcoma. Of operable cancer the author says that any subcutaneous or abdominal cancer which can be surgically operated upon should be so treated. Radiotherapy has not, up to the present time, a large enough percentage of successes to justify its preferential use or to cause the patient to lose the benefit which may accrue from timely surgical intervention. There are, however, exceptions to this rule. For example, when after deciding upon an operation, the operator gives the opinion that a month of grace would not be dangerous to the health of the patient; in such a case radiotherapy should be tried, when it will prove of benefit even if an operation should still be necessary. Of postoperative radiotherapy the author states that this treatment is of too recent date to judge of its merits. Of inoperable cancer he says that radiotherapy yields the best results of all methods employed, although it is often only a palliative treatment. The author describes his technics and the accidents following the use of radiotherapy. 2. Williams remarks that lately there has been an ever increasing number of reports published in the medical press of this country of cancerous patients whose ulcers, nodules, or lumps have disappeared, and in all cases the diminution or absolute cessation of pain has been an extremely interesting characteristic. We have learned and learn by daily experience the proper mode and methods, which enable us to avoid the former errors and poor results, the author citing several instances which illustrate this. At the present time we have most ample means of protecting not only patients, but ourselves from the undesirable detrimental results. For the x rays to have an effect on cancer growth, they should have some effect on normal tissue when required. The dermatitis which is often produced serves to prove this. The exact influence on the individual cell we do not know, but in the healthy area a leucocytosis is undoubtedly produced, which may probably account for the disappearance of the cancer cells. Several theories have been advanced to account for the action of the x rays on malignant growths, and they all seem to point to a leucocytosis being ultimately produced in or around the growth. 3. Bisserié gives interesting statistics with his experience in x ray treatment of cancer: Cutaneous epithelioma, one hundred and eighty-six cases treated with one hundred and sixty-eight cures, seven recurrences, and eleven failures; diffuse cutaneous sarcoma, eight cases treated, all cured; cutaneous melanosarcoma, twelve cases treated, with nine cures, and three recurrences; Paget's disease, nine cases treated, seven cures, and two failures; epithelioma of the upper lip, in eleven cases, eight cures, and three failures; of the lower lip, in thirteen cases six cures, five failures, and two recurrences; of the tongue, in seventeen cases two cures, fourteen failures, and one recurrence; neoplasms of the mammary glands, thirty-eight cases, with eleven cures and twenty-seven failures; mammary melanosarcoma, two cases with one cure and one recurrence; mycosis fungoides, six cases, with five cures and one recurrence. 4. Abbe states that it is his belief that we have not yet begun to understand or exhaust the value of radium, nor have we yet correctly applied this subtle force to obtain its maximum value. He states from his own experience that no case of rodent ulcer or superficial epithelioma fails to retrograde and cicatrize nicely under the proper application of radium applied in a sealed glass tube. The same result follows in many of this class of cases treated by Röntgen ray. Yet in many which have resisted the latter radium has promptly brought about a cure. This demonstrates a striking difference in the two remedies, much as they resemble each other. They are, as it were, supplementary. In giant cell sarcoma and some round cell sarcomata there is a prompt and wonderful retrograde, until tissues like the eyelid or the jawbone, which have been supplanted and apparently destroyed by the neoplasm, are restored to former conditions. The deep seated cancers, such as of the tongue, tonsil, œsophagus, rectum, and pelvis, yield no satisfactory results as yet as far as his experience goes, though uniformly there is a temporary destruction of surfaces close to the radium tube, and at times a strong healing tendency, which gives way to progressive disease afterwards. It would seem as if Röntgen rays are more helpful, though less easy to apply, in these cases.

THE PRACTITIONER.

October, 1906.

1. Abdominal Pain in Disease of the Pelvic Organs, By A. Donald and J. D. Lickley.
2. Some Remarks on Acute Abdominal Pain, By C. M. H. Howell.
3. Anuria, By W. H. C. Greene.
4. Demonstrations on Diseases of the Nervous System, By H. C. Thomson.
5. Recurrent Swellings of the Dorsum of the Hand Associated with the Appearance of Bruising Following a Blow, By T. Fisher.
6. Serum Therapy, By W. D. Emery.
7. Some Clinical Features of Colica Mucosa, By D. M. MacDonald.
8. Dyspepsia Due to Gallstones, By H. B. Day.
9. Review of Tropical Diseases, By R. T. Hewlett.
10. A Review of Recent Work in Venereal Diseases, By J. E. Lane.
11. The Nature and Treatment of Spasmodic Bronchial Asthma, By G. S. Haynes.
12. Three Best Reported Cases, By D. L. Davies.

1. Abdominal Pain in Disease of the Pelvic Organs.—Donald and Lickley find that pain as a symptom in gynæcology has been investigated more carefully by the neurologist and physician than by the gynæcologist. The latter, in the majority of cases, does not base his diagnosis on pain and tenderness. The abdominal pain with twisting of the pedicle of an ovarian tumor is one of the characteristic pains. In chronic pelvic disorders the pain is usually in the iliac region. It is most common in those cases in which acute pelvic peritonitis has preexisted. Ovarian pain is believed to be imaginary in most cases. Differentiation of pain on one of the other side is often difficult, especially on the right side. With iliac pain from uterine disorder, the uterus is usually enlarged and displaced. Iliac pain from endometritis is usually relieved by curettage.

Ovarian, uterine, and tubal points upon the abdomen are believed to mark the seat of disturbance in these several organs, and these points are contiguous or opposite to the entrance into the tissues of certain nerves. When pain is present the nerves of definite segments of the body wall are in a state of increased excitability, and the definite manner in which the areas are localized shows that these definite segments are related to definite viscera, the connecting link being either a posterior root ganglion or a segment of the cord.

2. **Some Remarks on Acute Abdominal Pain.**—Howell considers two classes of cases in which there is abdominal pain: 1. Those in which the pain is merely referred to the abdomen, the morbid condition causing it existing in some other portion of the body. 2. Those in which the pain is due to intraabdominal disease. Pulmonary disease may at first present abdominal symptoms hence one should note: 1. The character of the respiration. 2. The temperature, if elevated. 3. The character of the abdominal pain, that is, whether the tenderness is a referred pain, and superficial, or whether it is brought out by deep palpation. Neuralgia and other nervous disorders may cause abdominal pain, and should be considered in arriving at a diagnosis. When the diagnosis is uncertain, especially at an early stage, it is thought the abdominal conditions are usually associated with peritonism, obstruction, or one of the various forms of colic.

3. **Anuria.**—Greene thinks the subject may be divided in a general way into obstructive and nonobstructive. To this arrangement should be added a third, somewhat obscure class, in which there is reflex suppression. Nonobstructive anuria with acute inflammatory disease of the kidney is readily explained in chronic degenerations of the organ; it is usually due to the supervention of acute nephritic changes or to the complete destruction of renal cells. Obstructive anuria may arise from the impaction of calculi, or from the blockage of the ureters by growths or by stricture. The duration of life in the former condition is unrelieved, is measured by hours, and in the latter by days, while the uræmic symptoms are absent. Of the reflex or nervous anuriæ the author discusses the following varieties: 1. Hysterical anuria. 2. Anuria following disease of the kidneys. 3. Anuria following obstruction to one ureter, the other ureter being sound. 4. Anuria after abdominal operations. 5. Anuria after operations on the lower urinary tract.

8. **Dyspepsia Due to Gallstones.**—Day gives the following explanations for the frequency of dyspeptic symptoms in cholelithiasis: 1. The dyspepsia may be due to chronic gastritis which has preceded and favored the formation of gallstones. 2. Adhesions are formed as the result of a local peritonitis around the gallbladder, and cause adhesion dyspepsia. 3. The symptoms may be due to inflammation of the bile passages with partial obstruction. Differential diagnosis from the following conditions: a. Cancer may have septic phenomena and sallowness. A test meal may determine the diagnosis. b. Ulcer may not be determinable if hæmatemesis is wanting. The pain is constant and may or may not be relieved by food. c. Chronic gastritis has loss of appetite, with flatulence and pain on the left side. The symptoms may be relieved by rest, quiet, and medicines. d. Hyperchlorhydria recurs irregularly, causes pain, which is relieved by pressure and vomiting, and by albuminous food and alkalies. e. Duodenal ulcer has pain on the right side, hæmatemesis and hyperchlorhydria. f. Gumma has constant pain due to peritonitis, but may have the characteristics of adhesion dyspepsia. g. Gastric crises simulate biliary colic, but are of longer duration, and are very suggestive of tabes.

11. **The Nature and Treatment of Spasmodic Bronchial Asthma.**—Haynes favors the following theories of Osler: 1. That this disease is due to a spasm of the bronchial muscles. 2. That it is caused by a swelling of the bronchial mucous membrane. 3. That it is a special form of inflammation of the bronchioles. 4. That it is due to reflex spasm of the inspiratory muscles, especially the diaphragm. Others consider it as due to an excess of uric acid. The attacks are comparable with those of migraine and epilepsy, and usually occur in neurotic individuals. It is probable that the exciting cause is always peripheral, and the constriction of the bronchioles reflex. The treatment should resolve itself into permanently increasing the stability of the respiratory centre, and temporarily causing relaxation of the constricting bronchiole muscles during an attack. Climate, diet, and cauterization of the nasal mucous membrane are mentioned under the head of treatment, and a great variety of drugs, the most important of which is morphine.

EDINBURGH MEDICAL JOURNAL.

October, 1906.

1. Some Points in the Surgery of the Peripheral Nerves, By J. SHERREN.
2. The Feeding of Young Children, By W. A. POTTS.
3. The Therapeutical Value of Formic Acid in Diphtheria, By D. H. CROOM.

1. **Some Points in the Surgery of the Peripheral Nerves.**—Sherren states that a wide field has been opened for the treatment of paralysis and spasmodic affections by means of plastic operations upon nerves. To perform secondary suture upon a nerve there are various methods which may be divided into five groups: 1. The transference of a portion of nerve from another source. 2. Flap operations. 3. The provision of a path along which the nerve may regenerate. 4. Utilization of neighboring nerves. 5. Shortening the limb by resection of bone. The classification for the various operations may be termed nerve transplantation, nerve anastomosis, or nerve crossing, according to the procedure adopted. Whatever operation be performed, absolute asepsis and gentleness of manipulation are essential to success, the ingrowth of fibrous tissue between the ends often preventing union. If extensive separation of the nerve from surrounding tissues has been necessary, the bare portion and the junction should be enclosed in Cargile membrane or foil, the same thing being done when a nerve is incised. This procedure is applicable for injuries of any nerve of considerable size and importance. It has also been found that nerve anastomosis will restore, to a certain extent, the balance of power after paralysis due to central causes.

2. **The Feeding of Young Children.**—Potts thinks few subjects have been more studied and discussed in recent years than that of the feeding of infants under one year of age, and that few matters of importance have been more neglected than their feeding at a later stage. Errors in feeding at the latter period arise from want of appreciation of two important principles: 1. The capacity for salivary digestion is at first altogether wanting, and even later in childhood tends to be deficient. 2. The teeth, as soon as they appear, require proper use. As to the first of these salivary digestion being difficult starchy foods must be given in a very digestible form. Thorough mastication must be taught and encouraged, the food being therefore given in as dry a form as possible. As soon as the incisors are through the gums the first step should be taken to discontinue liquid diet. Crusts and bones may be given to encourage mastication. Also raw apples and nuts, and the farinaceous food should be given in a semisolid form. Overeating must be guarded against.

3. **The Therapeutical Value of Formic Acid in Diphtheria.**—Croom recalls the principal complications in diphtheria, cardiac failure, paralysis, and albuminuria. The changes found post mortem are especially Wallerian degeneration of the nerve cells with loss of conductivity, and degenerative changes in the kidneys.

The treatment aside from antitoxine has consisted mainly in stimulation. Certain objections may be offered to the use of strychnine, strophanthus, and digitalis. In formic acid and the formates the stimulant properties are not attained so markedly at the expense of blood pressure, their action being muscular and their effects persistent, especially when given in a twenty-five per cent. solution. The dosage which is recommended is five to twenty minims every four hours from ten to fourteen days. The results in the cases analyzed by the author are as follows: 1. Great regularity of the pulse, even where it had previously been very irregular. 2. Improvement in the general nutrition as shown by color, appetite, lack of depression which becomes marked within three days from the administration of the formic acid, and which signify successful combating of the toxæmia. The explanation offered is that the acid produces stimulation of striped muscle throughout the body and direct stimulation of the heart, thus increasing the resisting power of the individual.

Letters to the Editors.

THE TREATMENT OF BURNS.

ELMA, WASH., *October* 20, 1906.

To the Editors: I have read with much interest the prize question essays, and therefore wish to add a word in regard to a bit of experience of my own. I find that small burns, sufficiently deep to form blisters, can well be treated at the outset, before the blister is fully matured, by covering them with flexible collodion. This forms a firm coating, excluding the air and generally preventing an open sore, for if the dressing is properly applied it keeps the blister from maturing, relieves the pain, and lasts till the underlying burn is completely healed. To myself as a physician I find this prevention of an open sore on the hands quite an item. In a very extensive burn of the second degree on both arms and hands, as well as the head and face, which I was compelled to dress many times, there was great suffering from a burning sensation after each dressing, and the only way I found to avoid the pain was to leave off all dry dressings and ointments and dress with gauze wet with a weak solution of carbolic acid in sterilized water. These dressings I kept up for three days and continually wet, not moist, after which I had no more trouble. H. BLAIR.

Proceedings of Societies.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Meeting of April 4, 1906.

The President, Dr. ARTHUR V. MEIGS, in the Chair.

Case of Incised Wound of the Heart.—Dr. JOHN B. ROBERTS said that there had recently been reported to the college several cases of suture of the heart. He therefore desired to put on record a case in which suture of that organ would have been very easy if it had been deemed necessary for the safety of the patient. This case and the instances of heart suture reported by Dr. John H. Gibbon and Dr. F. T. Stewart established the value of the suggestion made twenty odd years ago before the college.

A woman, aged thirty-eight years, was admitted to the Polyclinic Hospital on February 20, 1906, with a history of having attempted suicide by drinking laudanum and cutting herself in the left chest with a piece of glass. She was found some time subsequent to the attempt at suicide with a self inflicted wound of the left wrist and an incision in the fifth intercostal space. The chest wound was three inches long and extended horizontally between the fifth and sixth ribs, about two inches below the left nipple. The inner extremity was one inch to the left of the left margin of the xiphoid cartilage. The external extremity was half an inch to the left of the left nipple. The cut lay along the lower margin of the fifth rib and exposed the attachment of the diaphragm to the sixth rib just below the wound. The lower margin of the lung was exposed, showing that the pleura had been opened.

The pupils were slightly contracted, but the woman was conscious. As he feared the wound had become infected, he made no attempt to suture it; nor did he explore it with probe or finger. The external wound was washed with normal salt solution and the edges were mopped with bichloride of mercury solution, one to four thousand. The opening in the chest was lightly packed with gauze and covered with a sterile dressing. There was no evidence of hæmorrhage. She was treated with stimulants for the moderate shock existing.

On the 25th the patient was seized with pneumonia of the right side, accompanied by a great many râles. There was dulness of the left side in the vicinity of the wound, which he took to be due to collapse of lung. The respirations were rapid and the temperature was about 101° F. She was treated with dry cups, turpentine stupes, and a pneumonia jacket. Internally she was given a cough mixture containing ammonium chloride and squill.

On the 28th a slightly colored discharge, coming out of the chest at each beat of the heart, was noticed by the resident physician, and a pulsating mass was seen at the portion of the wound toward the middle line. A drainage tube was introduced after emptying the fluid from the chest. Because the pleural effusion became foul and the temperature of the patient rose, the cavity of the pleura was washed out daily with boric acid solution, ten grains to the fluid ounce. The drainage tube pulsated with the heart, against which it lay, like a sphygmograph.

Some days after her admission, Dr. Roberts examined the heart carefully, carrying the finger around its left edge and feeling the split edge of the pericardium adjoining the collapsed and retracted lung. In front the pericardium could be seen slightly adherent to the surface of the right heart and a probe could be slipped a short distance between the two structures. Nearly the whole of the front of the left ventricle could be seen through the large opening in the retracted pericardium. The wound in the apex was exposed and was readily examined with the finger and probe. Its edges had become rounded by reparative changes. It would have been exceedingly easy to suture it had it been the seat of bleeding. The fact that a heart wound existed was not known until several days after the woman's admission. The retraction of the lung, occurring subsequently, as a result of its collapse or inflammation, exposed the heart more fully. Then, he did not deem it wise to interfere much with the wound, though he had the heart between his thumb and fingers in examining the pericardial wound. He was endeavoring to determine whether there could be pus behind the heart in the pericardial sac to account for the patient's fever. It seemed to him that the cardiac wound would heal by granulation without difficulty. It was not deep and was free from suppuration. The woman died on March 6th, evidently of the pneumonia, having had, a few days previous to her death, very rapid respiration, a feeble pulse, and a temperature in the neighborhood of 102° and 103°. The wound in the chest was being washed out without difficulty through a drainage tube, and no evidence had been found of pus within the pericardium, which had become adherent to the heart.

A post mortem examination was not allowed. The husband, however, permitted an examination of the

chest through the wound. This enabled Dr. Roberts to obtain the specimen presented. The upper portion of the heart had been mutilated, because of the difficulty of separating it, through the wound, from the large vessels at the root. The left lung was adherent to the chest wall, but was crepitant in its upper portion, non-crepitant and solid below. It was a good deal retracted from the position which it had occupied when the woman was admitted to the hospital. Some purulent fluid was found in the pleural cavity. The pericardial cavity contained no fluid, but had a large opening in its lower and anterior portion, through which the heart protruded. The pericardium was attached to the upper portion of the heart by adhesions easily separated. The diaphragm was covered with lymph. The wound in the apex was over the ventricular sæptum and the lower portion of the left ventricle. It was for the most part confined to the region directly over the sæptum. In the specimen it was a little deeper than during life, because there was a slight laceration made at its base by the manipulations necessitated by the removal of the organ.

This history might well induce one to believe that in urgent cases of heart wound or pericardial wound with hæmorrhage the surgeon need not take time to resect the costal cartilages, but might quickly make a three or four inch cut through the fifth interspace to reach the injured organ for suture or ligation.

New Inventions.

AN AXIS TRACTION METER.

By Arthur C. Jacobson, M. D., Brooklyn, N. Y.

This simple device for measuring the force employed in axis traction forceps deliveries consists of a dynamometer interposed between the traction rods and the handle bar of the Tarnier instrument. The arrangement can be easily applied to any axis traction forceps other than the Tarnier, if desired.

Fig. 1.

This scheme, the advantages of which are quite obvious, lends itself readily to the axis traction forceps. In the case of the ordinary forceps it could not be so well adapted mechanically.

Aside from giving us a scientific gauge of the force employed, the device is a safeguard against excessive traction; one cannot exceed 85 pounds traction with it. Moreover, traction may be *sustained* at any given number of pounds with exactness. Having an index such as this before one's eyes obviates the marked variations which necessarily occur when one is guided only by the muscular sense. These variations undoubtedly constitute a real damage factor as regards the cranial vault of the child and its contents.

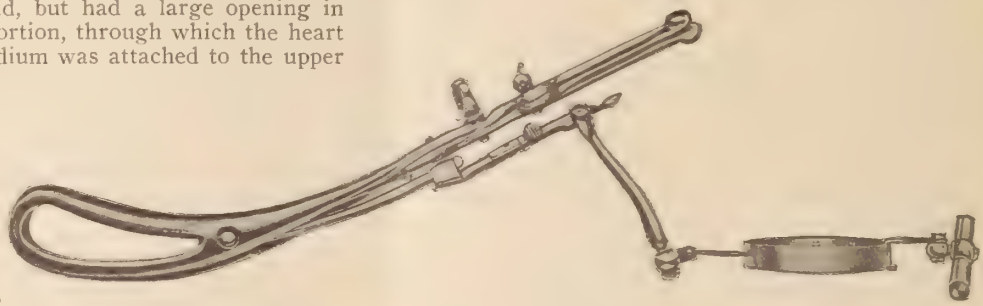

Fig. 2.

The dynamometer has two needles, one of which is "passive," being simply pushed along by the needle proper, remaining at the maximum point reached during the operation for later reference. The needle is absolutely true, whether traveling up or down, and the scale can be read down to one pound.

115 Johnson Street.

Book Notices.

The Crux of Pastoral Medicine. The Perils of Embryonic Man: Abortion, Craniotomy, and the Cæsarean Section; Myoma and the Porro Section. By the Reverend Andrew Klarmann, A. M. Second, Revised and Enlarged Edition. Permissu Ordinarii. New York and Cincinnati: Fr. Pustet & Co., 1905. Pp. v-221. (Price, $1.25.)

This is the second edition of a book which appeared for the first time in the beginning of 1905. We can hardly add anything to what we said of it in our issue for July 8, 1905, page 100.

Second Report of the Wellcome Research Laboratories at the Gordon Memorial College, Khartoum. Andrew Balfour, M. D., Director. Department of Education, Sudan Government, Khartoum, 1906.

The Wellcome Research Laboratories were opened to promote technical education, to inquire into the study of tropical disorders, to aid experimental investigation of cases of poisoning, particularly the study of obscure native means of poisoning, to study the water supplies of the region, to promote the knowledge of insect pests having economic as well as medical interest, and to undertake the testing and assaying of agricultural, mineral, and other substances of practical interest in the industrial development of the Sudan.

This, the second report of the laboratories, indicates that the ideas of the founders are bearing good fruit. In 247 pages are included the following papers, most of which are of more than passing interest to all students, particularly of tropical medicine: Mosquito Work in Khartoum, Biting and Noxious Insects Other than Mosquitoes, Blood Sucking Diptera, New Species of Culicidæ, Human and Animal Pests, Vegetable Pests, A Hæmogregarine of Mammals, A Leucocytozoon of Mammals, Changes in the Erythrocytes of the Jerboa, Trypanosomiasis in the Anglo-Egyptian Sudan, Routine Work Reports, Reports of the Travelling Pathologist,

Chemical Report on Nile Waters, Milk Supplies, Limestones, Gunpowders, Arrow Poisons, etc.

Many of these papers have been published in scientific journals previously, but it is of advantage to have them here collected into one volume. The director and founders are to be congratulated on the showing made.

Miscellany.

Apothecaries' Symbols.—In the *Pharmaceutical Journal* for May 19, 1906, page 583, Dr. C. B. Plowright traces the origin of the apothecaries symbols for scruple, drachm, and ounce to the Greek letters gamma, zeta, and xi, respectively (γ. ζ, ξ,). The *Lancet,* in a recent article, now advances a quite different hypothesis, as follows:

> The commonest syllable in mediæval Latin was the termination "us." This was abbreviated in early cursive MSS. into U, which is the long *f* with a flat U written over it. In the rapid writing of the commoner volumes this sign degenerated into the two dots representing the top and bottom of the *f*, which left a sign similar to our colon (:); thus m : came to represent "mus" and b : to represent "bus." This kind of expression for a contracted syllable is known by palæographists as a "ligature," and other ligatures were in frequent use. For a long period the contraction symbol ; (our semicolon) was one of those standing for "et," the dot representing e and the comma standing for the slurred remains of the cursive t. This semicolon came gradually to be written ʒ, which we can readily see is only a hasty, careless method of writing a semicolon without raising the pen; and we must remember that to raise a reed pen in rapid writing risked a blot, and blots were not favorably received in mediæval scriptoria. For a long period again this ligature (ʒ or ;) was confined to words ending in que or et, as in qnʒ for *quandoque,* quʒ for *quoque,* aʒ for *apparet,* oʒ for *oporret,* l ; for *licet,* tʒ *tenet,* and s ; for *scilicet.* Afterward the symbol was generalized to signify the omission of any final syllable, so that oʒ came to mean *ounce* or *uncia.* When printed text arose the ʒ at once became a z to suit the convenience of a limited font of type, but before this change became general the symbol oʒ had been slurred by hasty writing into ℥ and the lower weight of the drachma was derived from this as ʒ. The sign for the scruple (℈) is a "ligature" for sr, the long *f* being crossed by a cursive r.

In commenting upon this, the *Pharmaceutical Journal,* August 25, 1906, says: "The suggestion that the long *f* with a flat U degenerated into two dots like a colon (:) hardly tallies with the hypothesis that the semicolon a few centuries later developed into the ʒ symbol, because the mediæval copyists were afraid to raise their pens from the parchment lest they should blot their manuscripts, unless, indeed, the earlier scribes were a much braver race. The development of the ʒ as an abbreviation for *que* and *et* from the period, colon, and semicolon (. : and ;), as given by Chassant in his 'Dictionnaire des Abréviations' (fourth edition), page xlvi, forms but a small part of the multiple character given by him for these words at pages 116 and 117, where something like 30 are represented. At the same place, among the dozen contractions for the word *est* are no less than three which are as clearly our ʒ symbol, but no connection between this word and our pharmaceutical symbol exists. One does not readily see the steps by which the long *f* as a ligature for 'sr' became bent into our semicircular scruple symbol ℈, a character which the writer quoted above gives as a *sign particulier d'un usage frequent* for *cum.*"—Through *American Druggist and Pharmaceutical Record,* September 24, 1906.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending October 26, 1906:

Smallpox—United States.

Places.	Date.	Cases.	Deaths.
Montana—Cascade County	Sept. 1-30	1	
Oregon—Marion County	Sept. 1-30		1
Tennessee—Knoxville	Oct. 19-26	1	
Texas—Houston	Sept. 29-Oct. 6	1	
Utah—General	Sept. 1-30	20	
Smallpox—Foreign.			
Africa—Cape Town	Sept. 1-8	2	
Argentina—Buenos Ayres	July 1-31		99
Canada—Winnipeg	Oct. 5-12	3	
France—Marseilles	Sept. 1-30		12
France—Paris	Sept. 15-22	2	
France—Paris	Sept. 29-Oct. 6	2	
Germany—Bremen	Sept. 29-Oct. 6	1	
India—Bombay	Sept. 18-25		1
India—Madras	Sept. 15-21		3
Italy—General	Sept. 27-Oct. 4	1	
Russia—Moscow	Sept. 15-29	6	2
Russia—St. Petersburg	Sept. 8-12	4	2
Siberia—Vladivostock	Aug. 21	1	
Turkey—Constantinople	Sept. 30-Oct. 7		1
Yellow Fever—Foreign.			
Cuba—Havana	Oct. 19-21	4	
Guatemala—Gualan	Oct. 2	4	
Mexico—Merida	Sept. 30-Oct. 6	4	4
Mexico—Tustepec	Sept. 30-Oct. 6	1	1
Cholera—Insular.			
Philippine Islands—Manila	Sept. 8-15	20	17
Philippine Islands—Provinces	Sept. 8-15	120	94
Cholera—Foreign.			
India—Bombay	Sept. 18-25		21
India—Madras	Sept. 15-21		20
India—Rangoon	Sept. 8-15		1
Plague—Foreign.			
China—Hongkong	Aug. 25-Sept. 1	1	1
Egypt—Alexandria	Sept. 21-25	2	1
Egypt—Suez	Sept. 21-27	6	2
India—General	Sept. 1-8	4,304	3,134
India—Bombay	Sept. 18-25		41
India—Karachi	Sept. 3-16	18	16
India—Madras	Sept. 15-21		1
India—Rangoon	Sept. 8-15	1	43
Japan—Waykayama Ken	Oct. 2	Present.	
Mauritius	Aug. 8-24	9	6

Public Health and Marine Hospital Service:

List of Changes of Station and Duties of Commissioned and Noncommissioned Officers of the Public Health and Marine Hospital Service, for the seven days ending October 24, 1906:

ANDERSON, J. F., Passed Assistant Surgeon. Granted leave of absence for one month, from November 5, 1906.

ALEXANDER, E., Acting Assistant Surgeon. Granted leave of absence for seven days, from November 1, 1906.

CARRINGTON, P. M., Surgeon. Granted leave of absence for seven days, under provisions of Paragraph 189 of the Regulations, from October 23, 1906.

CARRINGTON, P. M., Surgeon. Granted extension of leave of absence for fifteen days, from October 30, 1906.

CUMMING, H. S., Passed Assistant Surgeon. Leave of absence granted for one month, from September 15th, amended so as to grant him one month's leave, from October 4, 1906.

FISHER, C. E., Acting Assistant Surgeon. Granted leave of absence for seven days, from October 17, 1906.

GAHN, HENRY, Pharmacist. Granted leave of absence for twelve days, from October 22, 1906.

GASSAWAY, J. M., Surgeon. Granted leave of absence for ten days, from November 4, 1906.

HOLT, E. M., Pharmacist. Granted leave of absence for twenty-seven days, from October 26, 1906.

LONG, JOHN D., Passed Assistant Surgeon. Relieved from duty at Manila, P. I., and directed to proceed to San Francisco, Cal.

MASON, W. C., Acting Assistant Surgeon. Granted leave of absence for twelve days, from September 17, 1906.

SIMONSON, G. T., Acting Assistant Surgeon. Granted five days' leave of absence, from October 19, 1906.

STRAW, E. E., Acting Assistant Surgeon. Granted leave of absence for twenty days, from October 15, 1906.

WALKER, T. D., Acting Assistant Surgeon. Granted leave of absence for ten days, from October 18, 1906.

Appointment.

Dr. J. F. Blanchard was appointed a temporary acting assistant surgeon for duty at Newport, Vt., in connection with the examination of alien immigrants.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, for the week ending October 27, 1906:

DESHON, GEORGE D., Major and Surgeon. Ordered to Rochester, Minn., for observation and treatment.

DUNCAN, WILLIAM, First Lieutenant and Assistant Surgeon. Arrived in San Francisco, Cal., for one month's leave of absence from the Philippines Division.

EKWURZEL, GEORGE M., First Lieutenant and Assistant Surgeon. Returned to Fort Keogh, Mont., from practice march.

HEYSINGER, JAMES D., First Lieutenant and Assistant Surgeon. Granted an extension of sixteen days to his leave of absence.

LYSTER, THEODORE C., Captain and Assistant Surgeon. Returned to Ancon Hospital, Canal Zone, from special leave of absence.

MAUS, LOUIS M., Lieutenant Colonel and Deputy Surgeon General. Returned from leave of absence to duty as chief surgeon, Department of Texas.

MCCULLOUGH, CHAMPE C., JR., Major and Surgeon. Left Fort Meade, South Dakota, on leave of absence for one month.

RHOADS, THOMAS L., Captain and Assistant Surgeon. Left West Point, N. Y., for Fort Crook, Neb., for his new station.

STEER, SAMUEL L., Captain and Assistant Surgeon. Returned to Fort Assinniboine, Mont., from leave of absence.

TALBOTT, EDWARD M., First Lieutenant and Assistant Surgeon. Returned to Fort Leavenworth, Kas., from detached service at Kansas City, Kas., with troops.

WADHAMS, SANFORD H., Captain and Assistant Surgeon. Returned to Fort Slocum, N. Y., from detached service at Fort Mackenzie, Wyo.

WALES, PHILIP G., Major and Surgeon. Left Fort Wayne, Mich., on leave of absence for ten days.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending October 27, 1906:

CASTO, D. H., Acting Assistant Surgeon. Ordered to the U. S. Naval Medical School, Washington, D. C., for instruction.

DECKER, C. J., Surgeon. Granted sick leave of absence for three months.

DONELSON, M., Acting Assistant Surgeon. Ordered to the U. S. Naval Medical School, Washington, D. C., for instruction.

DRAKE, N. H., Medical Inspector, retired. Placed on the retired list of officers of the Navy, from October 6, 1906.

HOLCOMB, R. C., Passed Assistant Surgeon. Ordered to additional duty as quarantine officer at Culebra, W. I., for the purpose of inspecting government vessels at that port.

MUNGER, C. B., Assistant Surgeon. Detached from the Naval Training Station, San Francisco, Cal., and ordered to the U. S. S. *Supply*, Naval Station, Guam, sailing November 5, 1906.

STITT, E. R., Surgeon. Ordered to the Naval Medical School, Washington, D. C.

Births, Marriages, and Deaths.

Born.

BERNHEIM.—In Fort Slocum, N. Y., on Friday, October 19th, to Dr. J. R. Bernheim and Mrs. Bernheim, a daughter.

Married.

BENNETT—GODFREY.—In Washington, D. C., on Wednesday, October 17th, Dr. Reginald Bennett and Miss Marion Emma Godfrey.

DOYLE—DRAKE.—In Philadelphia, on Wednesday, October 24th, Dr. George Ferguson Doyle and Miss Ann Laura Drake.

GRINAN—WILLIS.—In New York, on Wednesday, October 17th, Dr. Alfred J. Grinan and Miss Marjorie F. Willis.

HAYWARD—GAINES.—In St. Louis, Missouri, on Thursday, October 18th, Dr. J. Dawson Hayward and Miss Leonora Gaines.

HOSKINS—MILLER.—In Baltimore, Maryland, on Wednesday, October 17th, Dr. Robert R. Hoskins and Miss Bessie D. Miller.

JOFFE—JOFFEE.—In Brooklyn, on Thursday, October 18th, Dr. Maxwell S. Joffe to Miss Anna L. Joffee.

JOHNSON—SCARBOROUGH.—In Staten Island, N. Y., on Monday, October 1st, Dr. Philip Edwards Johnson and Miss Laura Hoadley Scarborough.

KNAPP—POWERS.—In St. Louis, on Wednesday, October 17th, Dr. Herbert W. Knapp and Miss Mae Powers.

MEYERS—ISAACS.—In Philadelphia, on Wednesday, October 24th, Dr. Herman J. Meyers and Miss Esther Isaacs.

SIMMER—ZEISSE.—In Philadelphia, on Wednesday, October 17th, Dr. George E. Simmer and Miss Karlene W. Zeisse.

WHALLEY—DEWALD.—In Philadelphia, on Wednesday, October 24th, Dr. Irving Whalley and Miss Katherine W. Dewald.

WHITE—PORTER.—In Washington, D. C., on Wednesday, October 17th, Dr. Carroll Agnew White and Miss Mary E. Porter.

Died.

ANDERSON.—In Cleveland, Ohio, on Tuesday, October 23rd, Dr. E. H. Anderson, aged fifty-two years.

ANDRADE.—In New York, on September 20th, Dr. Eduardo Andrade, of Jacksonville, Florida, aged thirty-three years.

ARNOLD.—In St. Louis, on Friday, October 19th, Dr. A. P. Arnold, aged eighty-six years.

BLANKS.—In New Orleans, on Friday, October 19th, Dr. J. H. Blanks.

COMSTOCK.—In Ilion. N, Y., on Thursday, October 18th, Dr. Arnon Lyon Comstock, aged twenty-six years.

CORNWELL.—In Alden, N. Y., on Monday, October 22nd, Dr. L. W. Cornwell, aged sixty-four years.

CRENSHAW.—In Richmond, Virginia, on Monday, October 22nd, Dr. O. A. Crenshaw, aged eighty-five years.

FINCKE.—In Brooklyn, on Sunday, October 21st, Dr. Bernhardt Fincke, aged eighty-five years.

FUQUA.—In Jonesboro, Tennessee, on Friday, October 19th, Dr. William M. Fuqua, aged sixty-eight years.

GRUBBS.—In Hopkinsville, Kentucky, on Saturday, October 20th, Dr. J. S. Grubbs.

HAZZARD.—In Louisville, on Thursday, October 18th, Dr. Rinaldo P. Hazard, aged seventy-eight years.

HUDSON.—In Hoosick Falls, N. Y., on Thursday, October 25th, Dr. Frederick R. Hudson, aged fifty years.

JANNEY.—In Welltown, Virginia, on Tuesday, October 16th, Dr. Daniel Janney, aged seventy-nine years.

LEWIS.—In Hudson Heights, N. J., on Wednesday, October 17th, Dr. Harry Parker Lewis, aged thirty years.

MULL.—In Rome, Georgia, on Wednesday, October 24th, Dr. Joseph C. Mull, aged thirty-nine years.

PINGREE.—In Chicago, on Monday, October 15th, Dr. M. Gaylord Pingree.

POWER.—In Saranac, Michigan, on Sunday, October 21st, Dr. Harrison H. Power, aged seventy-nine years.

REESE.—In Rockaway Park, Long Island, N. Y., on Friday, October 19th, Dr. George Frederick Reese, aged sixty-eight years.

RUSSELL.—In Utica, N. Y., on Friday, October 26th, Dr. Charles P. Russell.

SCHUESSLER.—In Baltimore, on Tuesday, October 16th, Dr. Frank W. Schuessler, aged forty years.

STEWART.—In Detroit, on Wednesday, October 17th, Dr. Morse Stewart, aged eighty-eight years.

WEIR.—In Warren, Ohio, on Thursday, October 18th, Dr. Virgil Weir, aged twenty-seven years.

WELLS.—In Norwich, N. Y., on Monday, October 22nd, Dr. Henry S. Wells, aged seventy-two years.

WILLIAMSON.—In Rainbow Lake, N. Y., on Sunday, October 21st, Dr. Charles Samuel Williamson, aged thirty-seven years.

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Lectures and Addresses.

PORTRAIT OF DR. CARL FORTUNATUS MUNDE.*

BY ABRAHAM JACOBI, M. D., LL. D.,
New York.

Carl Fortunatus Mundé was born in Germany, September 7, 1846, emigrated to America with his father, who was a political refugee, in 1849, and died February 2, 1902. He studied medicine in Harvard and graduated in 1886. Returning to Germany he served as assistant physician in the Prusso-Austrian war, was from 1866-1870 assistant to Scanzoni in Würzburg, and as such was instructor in the midwifery school of Bavaria. After serving in the Franco-German War in 1870, he studied obstetrics in Vienna in 1871 and obtained a special degree as master of obstetrics; he spent some time in Berlin, Heidelberg, Paris, London, and Edinburgh. In 1872 he returned to New York. From 1873 to 1876 he was secretary of the New York Obstetrical Society, edited the *Journal of Obstetrics and Diseases of Women and Children* from 1874 to 1892, joined the New York Polyclinic in 1882, and took the obstetrical chair in Dartmouth in 1880. There he lectured many years. From 1881 he was gynæcologist to the Mount Sinai Hospital. In this academy, which he joined in 1875, he was corresponding secretary during 1885 and 1886.

He was a prolific, instructive, clear, and graceful writer. Beside a great many magazine articles he published a book on *Obstetric Palpation* in 1879, a *Minor Gynæcological Surgery,* 1880, second edition, 1885, and was coeditor of T. G. Thomas's *Diseases of Women* in 1891.

Dr. Mundé was deservedly popular both in the medical profession and with the public. The impression he gave when first met was that of a warm hearted, good natured, optimistic, and withal strong nature, only occasionally disturbed by a brief outbreak of passion caused by acts of injustice or the neglect of duty on the part of those for whose acts he considered himself responsible. In the beginning of his career he was a sanitary inspector in the Health Department, active, conscientious, and highly thought of by his superiors. As an editor he made of *The Journal of Obstetrics and the Diseases of Women and Children* a high class journal which compared favorably with similar productions of foreign countries. It certainly has contributed much to the present high standing of obstetrics and gynæcology both in their scientific and practical aspects. As he was one of the well informed and circumspect men who reach a specialistic position after having been in varied general practice, he was a safe consultor. Both in his private and consultant practice, and in his hospital work he was eminently cautious and conservative, looking with the same care for the contraindications as well as the indications of an operation. Concerning the position of gynæcology as a specialty, he was strictly loyal and conservative. He did not share the opinion of those whose tendency it is to wipe it out and treat it as part of general or abdominal operative surgery. His position as a member of the profession and as a teacher was to the last honorable and prominent; he deserved the honors conferred upon him both here and abroad.

His memory should be preserved as that of a bright, upright, meritorious, and progressive physician. That is why the trustees and council have gladly accepted and present to the academy this successful and artistic portrait, the work and the gift of Mrs. Mundé.

* Delivered before the Academy of Medicine, New York, at the presentation of Dr. Mundé's portrait.

Original Communications.

A STUDY OF THE NATIVITY, SEX AND AGE, OCCUPATION, AND SOCIAL CONDITION OF THREE THOUSAND FOUR HUNDRED AND THIRTY-SIX CASES OF SENILE CATARACT OPERATED UPON AT THE WILLS HOSPITAL IN PHILADELPHIA.*

BY CHARLES A. OLIVER, A. M., M. D.,
Philadelphia.

The results given in this communication are based upon the findings which have been obtained in an extended study of three thousand four hundred and thirty-six cases of so called ordinary mature senile cataract operated on by different methods of extraction by the various members of the attending staff of Wills Hospital in Philadelphia, during the past thirty-five years.

All of the records of the cases from which the data have been obtained have been personally searched by the writer and four of his immediate assistants,[1] during a period of several months time.

Lenticular disturbance of both primary and secondary types from coarse traumatism, and gross associated and causative local and general disease, have been excluded from the lists; while secondary cataract (not infrequently found as the result of

* Read before the June, 1906, meeting of the American Ophthalmological Society.

[1] Dr. Albert J. Britt, Dr. I. Louise Haverstick, Dr. Mary H. Thompson, and Miss Guliema F. Alsop, to whom thanks are here given for their generous help in the research work.

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imperfect and faulty operative methods) has not been used. The cases employed have been limited as far as possible, to those in which the usual clinical appearances of so called senile cataract have not been complicated by any other demonstrable expression of cause and effect, than those which are significant of the gradual retrograde changes of more or less active life denominated by senility, a mere local condition representative of one of the usual degeneration signs of "wear" (and necessarily "tear") of tissue. A true senile metamorphosis.

Throughout the search among the original records, which fortunately, have been made by some of the most competent and best known ophthalmic observers in the country, due consideration has been given to avoid anything which might be considered in the least as uncertain: Thus separated from nearly twenty-eight hundred additional cases of congenital, and acquired complicated and gross secondary forms of lenticular disturbance (aggregating, as shown by the annual reports of the hospital, to more than six thousand cases which have been operated on in the institution during that period of time,[2] and confined to a minimum time limit of forty years for each subject (an age limit, which, as proved by a personal careful revisional study of the entire series of cases here given, made for both forty-five years and fifty years as the youngest age, has not practically altered the results herewith offered in any other way than to add respectively some one and three years to the average findings).

In order that the results here given, might not be considered uncertain through preconception, the compilation of the variously related tables, which in some instances assumed vast proportions, were relegated to special ophthalmic assistants who had been trained for particular types of work by the writer, so that in no manner was there any accidental or intentional collusion: This done, all of the obtained data were retabulated into briefer and less complex forms by the writer, and the findings were arranged logically into a series of, at least, self-evident resultants, which, in order to avoid the giving of much useless time consuming and undue space taking detail in such a communication as this, are here expressed in the briefest way.

(1) *Nativity*: As might be expected from the generally known and historically well understood several great influxes of foreign national element (particularly the Welsh, the English, the German, the Irish, the Italian, the Austrian and the Russian in the order here given) into this part of the United States of America, nativity has exerted a marked influence upon the obtained results. To such a degree has this affected the entire question, that it has been found necessary to separate all of the cases into two great groupings, the foreign and the native born, each of which has been subdivided into country and state.

Primarily, and based upon sufficiently broad evidences in every class that has been used, it has been found that there were fifteen hundred and thirty-five foreign born cases, and nineteen hundred and one native born ones, a rough ratio of three (+) cases to four (—) cases. Of the foreign born groupings, Ireland furnished the greatest number throughout the three and a half decades; actually rising to some fifty-five per cent. This was closely followed by Germany with thirty and some per cent., England with ten per cent. and Wales and Scotland with three and two per cent. respectively.[3]

Among the native born, Pennsylvania, with its preponderant sixty-five per cent., naturally gave a long lead; followed by fifteen per cent. for New Jersey; ten per cent. for Delaware, and five per cent. each for Maryland and New York. Many stray cases from the New England, the Southern, and the Western States—distributed particularly throughout the third and the last half decades, are to be found; but like those of the foreign lists, they have been excluded from the tables by reason of comparative fewness of numbers.

(2) *Sex and Age*: In general, it was found that during the decades from 1871 to 1880 inclusive, the average age of operation for men was 62.2 years; during the decade from 1881 to 1890 inclusive, it had slightly increased (63.3 years); during that from 1890 to 1900 inclusive, it had again risen slightly—to 63.7 years; while during the last five years, 1901 to 1905 inclusive, it had reached the high average of sixty-six years; thus giving a rough general average of about sixty-three years for the thirty-five years time.

Among women, the general average age, while equal to that for men, (about sixty-three years), showed an increase, which, while not so great, was certain: That for the first decade being 62.5 years; that for the second decade 63.9 years; that for the third decade 63.5 years (a slight fall); and that for the last five years having risen to 63.8 years.

With the native born male American, there existed the highest average age for operation, and hence most probable that of maturity of his cataract. During the first decade, it was 64.5 years, increasing one-tenth to 64.6 years for the second decade, and rising another tenth (64.7 years) in the third decade,—until in the first half of the last decade, (to date,) it has arisen to the remarkable average of 67.6 years. The Irish male, commencing at 61.7 years, falling two-tenths (61.5 years) in the second decade, and rising four tenths (61.9 years) in the third, showed a final increase of six tenths (62.5 years) in the last half decade: The male German beginning lower at 60.6 years, gave a rise to 60.9 years in the second decade, with a sudden jump to 64 years in the third,—to which he finally added eight tenths of a year, (64.8 years). The Englishman and the Scotchman at 60 years and 59 years each, rose to 63.5 years and 60 years, with a rise of the former to 65.3 years, and a fall of the latter to 58 years,—to at last give the phenomenal jumps of 70 years and 71 years respectively.[4]

[2] A carefully made study of the entire number of cases operated on at the hospital during the years named in this paper shows that the proportion of the operations to the total number of new cases seen was about one to four (77,373 operations upon 318,924 patients), and that the proportion of all cataracts operated on to the total number of operations was about one to twelve (6,190 cataract operations).

[3] The representatives of other nations found in the lists, such as from Belgium, Finland, France, Holland, Sweden, and the West Indies, were comparatively so few (some eighty cases) as to be considered practically worthless for accurate statistical work. So, too, with the races, which question, however, will receive consideration in a later paper bearing upon a similar subject.

[4] Native Canadians gave a slight increase over natives of England and Scotland. As the male Welsh have always formed a large contingent in the practice of this hospital, they were considered in detail. Comparatively medium at first with 62 years, they fell, with just as many in number operated upon, to 57 years in the second decade, to rise to 61 years, and then to 62 years—their original average. From the first male Russian

Among seven hundred and thirty native born women, forming about fifty per cent. of the total of fourteen hundred and fifty-two female cases in the series, it was found that the average operation age during the first decade was 63.1 years, increasing in the second decade to 65.4 years, and decreasing in the third decade to 64.3 years; ultimately rising in the last five years, to 63.8 years: Thus giving an increase of seven tenths of a year as the general average. The Irish female ratio increased regularly through the four decades from 60 years, to 60.8 years, to 62.1 years, and to 63.2 years as the final average, a very marked gain in the proportion. The German female, commencing with 62 years, fell to 60.8 years in the second decade, to rise to 63.9 years in the third, and to give an enormous leap to 68.5 years as the average for the last half decade; a most remarkable betterment. The English woman and the Scotch woman, commencing at 62 years and 64 years respectively, suddenly rose to 64 years and 73 years each, to again fall very low, 62 years and 60 years each, but ultimately to reach 63.2 years as the final for the former, with a remarkable jump to 73 years as the final for the latter. All the representatives of the other nations, among whom there was sufficient material for proper averaging, showed a decided betterment in the ratios that were obtained.

(3) *Occupation*: It was soon realized that as occupation among the male subject played such an important part in regard to the maturity, and even causation of the cataractous condition, it was necessary to divide the patient's vocations into four classes; (a), the unskilled laborer with his comparatively unused for near work eyes; (b), the skilled workman, whose eyes are incessantly exposed to bright glares of light and high temperatures of heat; (c), the high grade artisan, who requires accurate eyesight for proper manipulative procedures; and (d), the brain worker, whose entire time is sedentarily occupied with efforts at close vision.[5]

The first great class, (a), composed principally of out of door laborers, such as boatmen, drivers, farmers, hostlers, miners, porters, stevedores, and watchmen, although by far the greatest in number, gave the highest operative age average, sixty-six years throughout the entire three and a half decades; the average practically remaining the same.

The second class, (b), made up of blacksmiths, glass blowers, puddlers, and other workers in superheated materials, gave by far, the lowest age for the operative procedure, fifty-eight years.[6]

The third class, (c), composed of those in such employments as book binders, compositors, edge-tool makers, engravers, jewelers, shoemakers (particularly), and tailors, showed the lenticular condition fit for removal at an average age of sixty-three years.

The fourth class, (d), made up of those in vocations such as agents, clerks, and professional men, most probably, by reason of better hygiene, etc., gave a very high operative age, sixty-five years, as the average.

In regard to the women, there were but few active ones who were registered otherwise than housekeepers; this no doubt was owing to the fact of the limitation of means of livelihood for women which was existent at the time of the early life of the subjects in question:[7] The average operative age for the women, without regard to nationality, was, as has been elsewhere alluded to, about sixty-three years; this time ratio being somewhat earlier among the foreign born cases.

(4) *Social Conditions*: Commencing with foreign born married men as the highest at about thirty-three per cent. of the nineteen hundred and eighty-four males, (with a slight difference in favor of the native born) (thirty-one per cent.), the foreign born widowers fell to twelve per cent. and the native born widowers to thirteen per cent. Of the single men, six per cent. were natives, and five per cent. were foreigners. The women, on the contrary, gave their greatest showing of twenty-seven per cent. for native born widows, and twenty-four per cent. for native married women; with twenty-two per cent. for foreign born widows, and nine per cent. for foreign born married women. The ratio for single women, though the same in favor of the foreign born, gave the degree of per cent. lower—respectively five and three.

As might be expected from the ordinary course of things, some sixty-five per cent. of the male cases were married, thirty per cent. had been married, and the few remaining five per cent. were single. Fifty per cent. of the female cases were widows, forty per cent. were married, and ten per cent. were single. These results, as is well known in other similar statistical work, showed a slight disproportion in favor of the married male and the widowed female.

1507 Locust Street.

operated upon in 1878 to the quite recently marked increase in his countrymen, the average age of each decade has always been low: 51, 51, 56, and 58 years. For the past ten years there have been great numbers of young Austrians, Hungarians, Polanders, and Russians affected with the traumatic types of the affection, but very few thus far with the senile defect.

In an extended supplemental study in regard to the seasons of the year during which most cataract procedures were done, but which, by reason that Wills' Hospital, through custom, does but few if any cataract operations during the summer months, have not been included in this paper, some very curious findings in regard to the sex of the patient operated upon appeared. Year after year the proportion of men and women operated upon during January, February, and March was five to three; during April, May, and June, five to four; and during July, August, and September (though very few were done), three to two; while during the very busy months of October, November, and December, it kept to the three to two of the late summer and early autumn months.

[5] A large proportion of the men, 347 cases (about 16 per cent.) and 445 cases (about 33 per cent.) of the women, had passed their time of usefulness, and their occupation had to be regarded as "nil."

[6] It is interesting in this connection, as long known by the writer and elsewhere noted by him, that the eye which is the one that is usually directed toward the heated mass is the one which is generally the only one or the first one which is affected; this type of cases, a pure occupation one, appears very early in life.

[7] It will be instructive to recompare, and in fact contrast, this work with a similar one made after a lapse of another third of a century; particularly is this so in reference to the part bearing upon the occupations of women.

THE TREATMENT OF PERSISTENT OCCIPITO-POSTERIOR POSITIONS.*

By George L. Brodhead, M. D.,
New York,
Professor of Obstetrics, New York Postgraduate Medical School and Hospital; Instructor in Obstetrics, New York University and Bellevue Hospital Medical College.

The subject of occipitoposterior positions is to every one practicing obstetrics a most interesting field for observation and study. Fortunately, in the large majority of cases, rotation to an anterior position takes place, but we meet with the persistent

* Read before the Section in Obstetrics and Gynæcology, New York Academy of Medicine, May 24, 1906, and the Society of the Alumni of the Sloane Maternity Hospital, October 26, 1906.

posterior positions frequently enough to make it well worth our time in considering the treatment.

First, let us take up the treatment of occipito-posterior positions before labor begins. This might be said to be the prophylaxis of the condition of which we are speaking. Various authors have proposed postural treatment, such as the knee chest position, etc., and external manipulation has been advised, in the attempt to rotate the occiput to the front. Personally, it is not my practice to endeavor to correct a posterior position before labor sets in, or, indeed, to attempt rotation to the front during labor by external manipulation alone. As a rule, I have waited to interfere in any way until it was evident that the patient had accomplished all that she could.

The treatment of the condition during labor will naturally depend upon a number of circumstances, such as the degree of engagement, the amount of fluid present, the condition of the child, etc.; but for convenience, let us divide all cases which demand interference into three classes. The first class includes those cases in which the vertex is above the brim; the second, those in which the vertex is engaged in the brim, and the third, those cases in which the head is in the pelvic cavity. The first class of cases is met with less frequently than the other two, for, as a rule, in occipitoposterior, as in occipitoanterior cases, engagement to a greater or less extent has already taken place, and in consequence the treatment is made somewhat easier. Where the head is moveable above the brim, three plans of treatment may be considered; first, the application of forceps to the head in occipitoposterior position; second, manual rotation of the head, followed by the high forceps operation, and third, the operation of podalic version. It cannot be said that any one method is applicable to all cases; nor that any one of these three measures is inadmissible in all cases.

In the choice of operation, for instance, by one who has had little operative experience, it is my belief that in any case where the head is above the brim, and where there is still amniotic fluid present, version is a safer operation for the mother than the high forceps operation, although it is, in my opinion, equally true that the fœtal mortality in version will be greater than by the forceps operation properly performed. With reference to the internal manual rotation of the occiput forward, prior to the application of forceps, it can be said that in the hands of men accustomed to intrauterine manipulation the occiput can in some instances be rotated anteriorly, but in many cases, especially those in which the membranes have been ruptured for many hours, the operation is difficult, and in cases where the head is firmly grasped by the lower segment of the uterus, which may have been thinned by protracted labor, even dangerous. In the latter class of cases forceps carefully used would be safer than version, even in the hands of men of comparatively small experience. For operators of considerable experience, possessed of the proper knowledge of the technique of the high forceps operation, the following plan seems to me the best for both mother and child:

Under deep anæsthesia an attempt should first be made to rotate the occiput to the front by the introduction of the hand into the uterine cavity. Failing in this, the forceps should be applied to the sides of the head in the posterior position, and the head extracted in a manner which will be outlined later on. The high forceps operation is always to be undertaken with a proper appreciation of its difficulties and dangers. Nevertheless, in careful hands and with normal conditions, I believe that the forceps, in posterior as well as in anterior positions above the brim, will give better results than version as far as the child is concerned, and results equally good for the mother. Failing to deliver by forceps, the child being alive, version, of course, is the other alternative. Whether, however, version is the usual elective operation or not, I believe that when there is but little amniotic fluid left, and the uterus is tightly contracted about the fœtus, the careful, tentative use of the forceps is to be preferred to internal podalic version. Very little difficulty may be experienced with forceps, whereas version might result in a rupture of the uterus.

The treatment of the second class of cases, in which the vertex is engaged in the brim of the pelvis, is much less debatable than the treatment of cases where the head is above the brim. The majority of operators will agree, I think, that the forceps should be used to bring the head down into the pelvic cavity. I advise that the blades be applied to the sides of the head, and that the head be brought down slowly and carefully to the pelvic floor. If rotation occurs naturally and the position becomes anterior, the difficulty has been overcome, but if the position remains posterior, treatment should be carried out as indicated in the consideration of the third class of cases.

The treatment of the third class of cases may be, first, rotation of the occiput to the front by use of the forceps; second, manual rotation, and third, delivery by forceps, the occiput remaining in posterior position. In multiparæ, where the soft parts have been thoroughly stretched, and where the head is of average size, the forceps may be applied and the head extracted in occipitoposterior position. In primiparæ, on the other hand, or in multiparæ where the soft parts are not relaxed, or where the head is large, the rotation of the occiput forward is highly desirable, for the reason that it is much more easy, as a rule, to extract the head, with the occiput to the front, and there is much less danger of extensive laceration of the soft parts. Then, again, in some instances, it seems almost impossible to extract the head in its posterior position, and rotation by some method is imperative, if the life of the child is to be saved. Several years ago, I was called upon to perform craniotomy, in the case of a primipara, where the head in the pelvic cavity could not be extracted in the posterior position, and where the child was already dead. Manual rotation has been used successfully a number of times, and, indeed, the pressure upward upon the forehead, to increase flexion, has frequently caused rotation. Imperfect flexion is responsible for the failure to rotate at times, and pressure upon the forehead tends to bring the occiput lower down, so that the pelvic floor may act upon it favorably, rotating it to the front. In the treatment of these persistent occipitoposterior positions, with the head in the pelvic cavity, my rule is to use instrumental rotation.

The conditions which should be fulfilled before the operation of rotation is undertaken are these:

(1) The head should be as well flexed as possible; (2) the vertex should be well down in the pelvis and preferably at the vulvar outlet; (3) the membranes must be ruptured; (4) the cervix should be fully dilated or dilatable; (5) the bladder and rectum should be empty; (6) last, but not least, the operator should be positive of his diagnosis of position. The last four of these conditions must, of course, be complied with before any forceps operation should be done. The genitals are prepared in the usual manner, but no vaginal douche is given unless there have been frequent examinations, unless the vagina is dry, or there is reason to suspect possible infection from careless examination. Wherever it is possible the patient should be placed upon a table, but where inconvenient the buttocks should be brought to the edge of the bed. The legs are held up with leg holders, a sheet, or by assistants, and very light chloroform anæsthesia used. For the operation of rotation and subsequent extraction I have invariably used the Tucker solid bladed forceps, an instrument which is superior to any other for a number of reasons. The head, which is frequently moulded to an extreme degree, often fits the pelvis so tightly that it is difficult to introduce a fenestrated blade. The same difficulty is experienced in removing the blades, preparatory to a reapplication, after rotation is accomplished. The solid blades are more easily introduced, more easily applied to the sides of the child's head, are removed with greater ease, and, finally, mark the child less than any others. The forceps, after sterilization, is immersed in a one per cent. lysol solution, which answers admirably as a lubricant. The blades are introduced laterally at the sides of the pelvis, each blade being rotated so as to occupy a position at the side of the head, after which the forceps is locked. I believe that it is safer to apply the forceps in the usual manner (the concavity of the pelvic curve looking forward) than to attempt the rotation with the forceps in the inverted position, but in the hands of an expert the latter method may be safely used. One of the great objections to rotation with forceps has been the danger of laceration of the soft parts with the tips of the blades. Laceration would surely occur if rotation were to be made with the handles of the forceps held in the median line, but this can be easily avoided by careful attention to the details of the operation as they are given below.

Straight blades would perhaps be preferable to those with the pelvic curve for the purpose of rotation alone, but with care one can get results just as good with the curved instrument. By carrying the handles of the instrument toward the thigh of the patient toward which the concavity of the pelvic curve looks—or, in simpler words, toward the right side of the operator if the position is right occipitoposterior, and the left side if the position is left occipitoposterior—the blades become for all practical purposes straight blades.

Two fingers of one hand of the operator are placed upon the vertex, preferably upon the sagittal suture, and kept there during the operation in order to note whether the head is turning with the blades or whether the blades alone are being rotated. The handles of the forceps are seized with the other hand and the blades held firmly against the sides of the child's head. The fingers of the one hand being kept in position on the sagittal suture, the head is rotated during a contraction from the posterior to a transverse position until the concavity of the pelvic curve faces the lateral wall of the pelvis. The head is then held in this transverse position for several moments, until several contractions and relaxations of the uterus have taken place. During the relaxed periods the body of the child will usually adapt itself to the position of the head—in other words, the back rotates forward. The head is then rotated to the right occipitoanterior or left occipitoanterior position, as the case may be, by rotating the handles, at the same time carrying the handles still further backward and downward. By so doing the tips of the blades are kept constantly in the middle of the pelvis and therefore cannot lacerate the vagina. The head is held in the oblique anterior position for several moments more, in order to allow the body, during a relaxed condition of the uterus between its contractions, to rotate anteriorly to accommodate itself to the position in which the head is held. The rotation of the body can be verified by palpation and auscultation, and by the fact that after removal of the blades the position will remain anterior.

After such a rotation it is surprising to note the advance which often takes place immediately after the occiput has come to the front, and in many cases, when once the head has been turned to the transverse position, the rest of the rotation is spontaneous and delivery is easily completed. After the removal of the blades the rest of the delivery may be left to the natural forces, but as a rule it is better to reapply the blades in the usual manner and complete the operation in the usual way. If rotation takes place easily, as it generally does, much has been gained, especially in the primipara; but if the rotation cannot be accomplished except by the use of force, the head should be extracted in the posterior position, the forehead being brought down under the pubic arch, and the head made to advance by using traction in such a way as to promote flexion. When it is evident that delivery can be completed by the natural forces, the blades are removed and the rest of the delivery completed in the usual manner.

In conclusion, let me emphasize the great importance of a thorough examination to determine the precise position of the head before any forceps operation is undertaken, and again, the most favorable conditions for successful forceps rotation, viz., the well flexed head, the low position of the vertex, and careful attention to the technique of the operation, as described.

110 West Fifty-Seventh Street.

EPIDEMIC CEREBROSPINAL MENINGITIS. REPORT UPON ITS PRESENCE IN BIRMINGHAM, ALA., DURING THE PAST YEAR.*

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An epidemic of cerebrospinal meningitis, of limited extent, but of great fatality, has been present in Birmingham and vicinity since March,

* Read before the Medical Association of the State of Alabama, April 18, 1906.

1905. Up to the present time one hundred and seven cases have been reported with seventy-eight deaths, a mortality of 72.9 per cent. The cases have been distributed as follows: Whites, thirty-four; deaths, twenty-six; mortality, 76.4 per cent. Blacks, seventy-three; deaths, fifty-two; mortality, 71.2 per cent.

Through the kindness of many of my professional brethren, I have been enabled to observe a number of these patients, both at the bedside and at autopsy, and several cases have occurred in my service at St. Vincent's Hospital. Altogether twenty-three cases of meningitis have been studied bacteriologically, and five cases have been seen in which the diagnosis was made clinically, but where, for various reasons, bacteriological studies were not made.

Of the cases studied bacteriologically, meningococcus was found in nineteen cases; tubercle bacillus in one case, secondary to tuberculosis of mesenteric glands; tubercle bacillus and meningococcus in one case; pneumococcus in one case, secondary to lobar pneumonia; no definite conclusion was reached in one case, but the infection was probably meningococcus.

Clinically the cases have differed widely. Some have died within a few hours of the onset; some have survived eight or ten days; others have recovered entirely within this time; still others have lingered for weeks or months, and finally succumbed; and a few have recovered after prolonged illness, with more or less disturbance of the general nervous system, and of the special senses.

The comparatively small number of cases occurring in the practice of many different physicians has given no opportunity for the extensive trial of any line of special treatment, but there has been opportunity for studying the bacteriology of the outbreak, and for adding some slight additional evidence to the fact that the meningococcus is the specific cause of sporadic and epidemic cerebrospinal meningitis. Councilman, Osler, and others call attention to the fact that but few outbreaks of meningitis and still fewer sporadic cases have been studied bacteriologically, and urge the advisability of investigations along this line. It has been in the investigation of this feature of the disease that my efforts have been particularly directed.

In this series of cases cerebrospinal fluid has been withdrawn by lumbar puncture for bacterial examination, wherever possible, and autopsies have been made in all cases where they could be obtained. As already pointed out, the disease has appeared in very different forms, and I believe that every recognized clinical type has been observed.

The Organism.—"Morphologically, the organisms appear as diplococci, occurring as paired hemispheres, separated by well marked, unstained intervals." The diplococci found in this epidemic have been characteristic. In cover slips from fluid obtained by lumbar puncture and in preparations of the exudate found upon brain and cord at autopsy, the intracellular diplococcus has been found, and typical growths have been obtained upon blood serum. The organism has stained well with the aniline colors, and has been decolorized by the Gram method. While it is ordinarily considered that the organism is difficult to cultivate, sixteen successful cultures were obtained out of the twenty-two cases in which cultures were made.

Pathology.—In this series of cases twelve autopsies were made. In nine the infection was due to meningococcus; in one to tubercle bacillus (secondary); in one to pneumococcus (secondary); in one to tubercle bacillus and meningococcus.

Cases I, II, IX, X, due to the meningococcus, showed acute purulent meningitis, extending over surface of hemispheres and particularly marked at base. Case III showed thin, scanty exudate on surface of hemispheres; extensive grayish white exudate at base, with tubercles on choroid plexus of veins, a large quantity of cerebrospinal fluid, a large area of cerebral softening beneath the angular convolution of the left parietal lobe. Case VIII showed only intense cerebral congestions and a small quantity of fluid in ventricles (eleventh day). In Case XV acute purulent meningitis was most marked at base; very little exudate on surface of hemispheres; pus in each lateral and in third ventricle, and hæmorrhagic foci in brain; healed tuberculous lesions in lungs. In Case XII (chronic cerebrospinal meningitis) the patient died on the one hundred and second day from hydrocephalus, old placques of exudate were found on surface of brain, organized exudate at base; ventricles were very much distended with watery fluid. Pus in posterior horn of each lateral ventricle. Brain very anæmic, softened area beneath the right temporosphenoidal lobe. Cord soft throughout Gelatinous exudate around cauda equina. In Case XX no visible changes were observed. Death occurred in a few hours. Culture of meningococci were found. Case XXII (acute purulent meningitis) showed fluid in ventricles; extensive exudate. Microscopically indistinguishable from meningococcus. Case XXIII was of tuberculous meningitis, secondary to tuberculous mesenteric glands. Exudate exclusively basilar.

Infection Atrium.—Westendoeffer, as a result of investigating thirty cases at autopsy, draws the following conclusions (9), (10): First. The infection atrium is the posterior nasal space, and particularly the pharyngeal tonsil. Second. The meningeal inflammation begins at the base of the brain in the region of the hypophysis. It develops through the lymph channels. Third. The inflammation never, or at least rarely, develops by extension from a disease of the ethnoid cells. Fourth. The disease is an inhalation disease. This report shows that the infection started in the pharyngeal tonsil, entering the cranium through the sphenoid bone, traveling along the vessels which run across the pharynx into the sella tursica, through the sphenoid foramina. There was no evidence that the infection passed through the cribiform plate of the ethmoid bone, and the infection seemed to travel by lymph channels rather than by blood channels (10).

Contagiousness.—The belief is gaining ground that the disease is very slightly, if at all contagious. Osler states that the disease seems not to be directly contagious (1). Professor Osborne,

of Yale, says: "My personal belief is that it is very mildly communicable, no more so than pneumonia or typhoid fever." By this he means that a nurse or other person caring for a patient sick with cerebrospinal fever might acquire it by carelessness in caring for or handling the nasal or throat secretions of the patient, and the same is absolutely true of pneumonic and typhoid excretions. As the term is ordinarily understood, he considers that it is not contagious (11). Kirchnell, after an extensive study of the disease, concludes that it should not be placed under the group of contagious diseases (9) (12). Abbott holds that it is only slightly contagious (13). Prebele, in reviewing the subject, makes the following statement: "Upon the question of the contagiousness of the disease, there is some difference of opinion, but the trend is toward disbelief" (9). Our own observations agree with those who believe the disease is not directly contagious. In only one instance have two cases occurred in one household (Cases VII and VIII), and in this instance the two children were taken sick within thirty-six hours of each other, and most likely obtained the infection from the same source, rather than the one from the other. In the same house were several other children and grown persons, and their surroundings were such that isolation was impossible. Indeed, it was practically impossible to get them to take ordinary care in handling the sick.

Both these cases were sick for weeks, but no other cases occurred in the house. Several cases have been treated in the wards of the St. Vincent and Hillman hospitals and in the wards of the almshouse, and there has been no spread; neither has there been a second case in any of the dirty, crowded, unsanitary houses where cases have died.

Symptoms.—As seen in this epidemic, the patients presented symptoms of such regularity that difficulty of diagnosis has not been great. The onset has been studied in twenty-one cases, with chills or nausea and vomiting; gradual or proceeded by malaise in three cases; unknown in four cases. Delirium or coma has been present in every case. Stiff and retracted neck, with stiffness of back, has been present in every case which was observed during life. Examinations of eyes have been negative in twelve cases; and not noted in four cases. Conjunctivitis has been seen in six cases; once in association with ptosis and once in connection with widely dilated and sluggish pupils. Inequality of pupils has been noticed in two cases. Pupils have been widely dilated without other change in one case. Strabismus has been noted in one case. Photophobia has not been specially marked, except in one case which proved to be tuberculous. Subconjunctival hæmorrhages have been seen in one case. Eruptions have been found in three cases, and herpes has been noted in only two of the cases I have seen. Concerning eruptions and eye symptoms, it will be observed that a large proportion of our cases have been in negroes, and a rash can rarely be seen in them. As the eyes are nearly always very black and the light in their cabins is often poor, it is practically impossible to get satisfactory observation on pupils. Convulsions were present only in one case, though muscular twitching and contractions of hands and feet were often observed. Hyperæsthesia was frequently present, and the scophoid abdomen appeared in most of the protracted cases. Albumin and casts were present in a few cases and involuntary urination and defæcation was the rule in unconscious patients. Priapism was observed once. Intestinal hæmorrhages occurred in two cases. Neither of these showed any gross intestinal lesions at autopsy, but petechial spots were seen in the intestinal walls, and in the mucous membrane. Knee jerks have been absent in the cases where this examination was made. Deafness has been observed in a number of cases.

Lumbar puncture has been performed in twenty cases, and more than once in several cases. The fluid withdrawn was cloudy in nine cases, opaque in two, purulent in five, and clear in three. A fibrinous plug occluded the cannula in one case. In one secondary puncture a dry tap was made. In one secondary puncture a yellowish green fluid was observed. Of the three cases with clear fluid one was tuberculous, one mixed tuberculous and meningococcus infection, and one meningococcus.

Cover slips from lumbar puncture showed: Meningococci in twelve cases, tubercle bacilli and meningococci in one case, not examined in one case, pneumococci in one case, and nothing found in five cases.

Cultures were made, either at autopsy or from lumbar puncture in twenty-two cases. Meningococci were grown in sixteen cases, and were not found in six cases. In one case, IX, where organisms were abundant in cover slips, twelve tubes were inoculated at autopsy to see how many would grow. Nine tubes gave typical growth.

Leucocyte counts were made in thirteen cases and averaged 18,037, the lowest count was 12,000, and the highest was 31,000.

Temperature and pulse have been variable. Pulse in many cases has been as low as 48 or 50; in other cases it has been rapid and weak. Temperature: Highest, 105°; lowest, subnormal, 97°.

TYPES OF DISEASE.

	Cases.	Recoveries.	Deaths.	Under Treatment.
Abortive	1	1	0	0
Fulminating	3	0	3	0
Ordinary	14	3	10	1
Chronic	8	5	1	2

We have not been able to definitely classify any case as of intermittent type, though some of the chronic cases presented some such features. The tuberculous and pneumococcic cases were both fatal.

Age: Under 5 years, 1; 5 to 15 years, 12; 15 to 30 years, 7; 30 to 50 years, 7; above 50 years, 1.

The youngest patient was eighteen months old and died. The oldest was sixty-eight years old and recovered.

I am unable to give full case histories of many of the patients, for in most cases there was only opportunity for examining patients once or twice in consultation.

Diagnosis.—In all suspicious cases thorough examination has been made to exclude disease of other organs. Pneumonia with meningeal symptoms should be carefully watched for, and in malignant cases care should be exercised to

exclude acute uræmia. Whenever there has appeared a case of severe headache, delirium, or coma, with stiff neck and back, and Kernig's sign, especially if there has been leucocytosis and a history of sudden onset, cerebrospinal meningitis has been suspected, and whenever possible lumbar puncture has been resorted to for diagnostic as well as therapeutical purposes.

Technique of lumbar puncture: First. The puncture is best made in the interval or between the third and fourth lumbar vertebræ. The third interspace corresponds to a line drawn across back from the highest points of the iliac crests. Second. A hollow aspirating needle of medium size, at least three inches long and preferably four inches for adults, is to be used. A wire trocar should be at hand, for it is sometimes necessary to pass it into the needle to remove blood clots, thick tenacious pus, or plugs of exudate. An aspirating syringe should never be used (14). Third. The patient should be on his side with knees and thighs and trunk flexed, and with shoulders and head slightly raised on pillows. Fourth. For the reception of the fluid one or more sterile test tubes should be at hand, and it is preferable to have the culture tubes at hand also, so that they can be inoculated directly from the fluid as it flows from the spinal canal. Fifth. The needle should be introduced about one half inch to one side of the middle line, and one half inch to three fourths of an inch below the tip of the spinous process of third lumbar vertebra. It must be pushed in an upward and inward direction.

My aim in an adult is to so direct the needle that it will reach the middle line at a point about two and one half or three inches deep. If the canal is not at once penetrated, the needle may be partially withdrawn and the point pushed in at a different place. Wherever bone is encountered it shows definitely that the needle has not reached the location of the interspace, and it must be searched for in another direction. In children and in thin individuals the canal is easily reached, but in stout adult persons it is frequently very difficult. Dry taps are sometimes made, i. e., the needle actually enters the canal, but no fluid is withdrawn. This may be due to thick exudate, stopping of cannula with blood or tissue, and in case of secondary tap to adhesions around the point of aspiration. In Case XII, where secondary dry taps were made, we found on autopsy a gelatinous exudate around the cauda equina. Sixth. The fluid should be collected in sterile tubes and should be centrifuged or allowed to settle, when the sediment should be spread on slides stained, and examined.

The following points should be noted: First. The gross appearance of the fluid. It may be clear, cloudy, opaque, bloody, or purulent. Second. The character of the cells in the exudate. In tuberculous meningitis the lymphocyte is almost exclusively found. In meningococcic meningitis the polyneuclear cell is in excess. Third. The spread should be carefully examined for organisms.

It is often advisable to examine the fluid for tuberculous bacilli, and when this is to be done, the fluid should be centrifuged for at least fifteen minutes before the sediment is secured for staining. Cultures may be made from the sediment, or preferably from the fluid as it flows from the cannula at the time of the puncture. Except in summer, they do not grow at room temperature, and should be kept in an incubator at 38° C. A growth will usually appear in twenty-four hours.

That the puncture is free from danger in the presence of pressure symptoms, is the general opinion of the authorities. It affords positive diagnostic information in a large number of cases. It acts favorably and perhaps curatively in many cases, by relieving intracranial pressure.

The absolute knowledge of the character of the organism in a given case of meningitis is of great value from a prognostic standpoint, in that from twenty to sixty per cent. of recoveries may be expected in diplococcus meningitis, whereas nearly all of the pneumococcic, tuberculous, and pyogenic cases are fatal.

Autopsies in private practice, particularly in country districts, are often impossible. Lumbar puncture can be performed in practically any case, shortly after death, if it has not been done earlier.

I suggest that physicians make use of lumbar puncture post mortem in any suspicious case, or in any case where bacterial confirmation of a diagnosis is desired.

Treatment.—As already mentioned, no line of special treatment has been followed in any large number of the cases. The general outline as recommended by Professor Stockton (6) has probably been given the fullest trial.

In practically all cases it has been found necessary to resort to morphine and bromides. Lumbar puncture, frequently repeated, has been tried in several cases without marked curative effect, though the operation has seemed to give some relief for a time. The hot bath treatment has been used with comfort to the patient in every instance. The suggestion of Dow (13), that the head of the patient be elevated, has been tried in a few instances, and may possibly relieve the cerebral congestion to a slight extent. Ergot hypodermatically, as recommended by Osborne (11) has been tried in a few cases without any noticeable effect. Diphtheria antitoxine as recommended by Waitzfelder (7) has not been tried, nor have any cases been treated by the injection of antiseptics into the cerebrospinal canal.

Upon the whole, no disease seems to resist all treatment more stubborning than this, and we seem forced to resort to symptomatic treatment with the employment of such special measures as the physician may prefer and as the case may seem to demand.

I wish to express my indebtedness to Professor Councilman, to Dr. Milton J. Rosenau, director of the Hygienic Laboratory, and to Dr. S. B. Walbach, of the pathological department of Harvard University, for examination of a number of slides and for review of several of these cases.

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FIRST NATIONAL BANK BUILDING.

THE SURGICAL TREATMENT OF CERTAIN LESIONS OF THE UPPER ABDOMEN.*

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I have decided to confine my remarks to a class of symptoms met daily by the general practitioner and which concerns chiefly the functional and organic diseases of the liver and its ducts, the stomach duodenum, and pancreas, and indirectly the vermiform appendix. We will first consider some general symptoms arising from the presence of a stone or infection (cholecystitis) involving the gallbladder and its ducts.

Gallstones are the result of cholecystitis, the infection probably reaches the gallbladder through the bile current rather than from the duodenum through the common duct. We know that infections carried from the alimentary tract through the portal circulation are filtered in the liver, therefore it is reasonable to suppose that the bile can be a fruitful source of infection.

Most people with gallstones have had mild attacks of cholecystitis at various times before the presence of gallstones are manifest.

The first symptom of gallstone disease is an acute attack of pain in the midline just beneath the ensiform cartilage. The pain usually radiates to the right, but frequently to the left. It may radiate to the back or upwards to the shoulder. The attack may last from a few minutes to hours, and may be relieved suddenly by nausea or vomiting. The patient feels the sensation of gas passing an obstruction, there is little variation in the pulse or temperature. When the attack passes off, beyond a little rigidity of the right rectus muscle, he has no evidence of disease. The second stage of gallstone disease may mean obstruction of the pelvis of the gallbladder. The attack may begin as formerly, but it leaves more tenderness in that region, and a tumor of the gallbladder may be felt. The temperature may reach 101° F., seldom more, even with the presence of pus. The appetite may remain good.

The third stage is produced by the contraction of the distended gallbladder, with a slow absorption of fluids. This is usually attended with more or less local peritonitis, and now for the first time we may have slight jaundice, due to compression of the common duct from the plastic peritonitis. We then have a typical "liver trouble," oftentimes diagnosticated as "biliousness." Infection may now give us new attacks of localized peritonitis without further attacks of colic. We may also have as an associated condition dilatation of the stomach by interference with the latter's motility, owing to adhesions between the pylorus and the region of the gallbladder. Secondary complications may also occur at this period, namely, acute perforation of the gallbladder, or a slower ulceration into the colon, pylorus, or duodenum.

The next stage means the passage of the stone into the cystic duct with sudden boring and deep seated pain, rise of temperature from 102° to 104° F., and frequently associated with chills. The pain may continue for hours or days, as the stone advances through the narrow duct. The attack may be marked by jaundice, and the pain varies according to the distensibility of the gallbladder to relieve back pressure.

The next stage means the passage of the stone into the common duct, the symptoms now depend upon two conditions, infection and jaundice. The temperature usually assumes a malarial curve with rise of temperature from 103° to 107° F., which means we have free absorption by the lymphatics. We notice that the temperature has advanced from the gallbladder where it was normal, or 100, to 107 in the common duct; due to the fact, as Murphy has demonstrated, that the gallbladder has no glands and few lymphatic channels. There is a gland at the junction of the gallbladder and the cystic duct, another at the junction of the cystic and the common; then, as we pass along the common duct we have a plentiful supply of glands and free lymphatic absorption, which accounts for the marked variation in temperature. We should always look upon the temperature as an important diagnostic symptom.

Jaundice up to this stage is an uncertain complication. During the acute stage there is a slight increase in the degree of icterus, changing often in twenty-four hours. This does not mean that the stone has passed into the duodenum. There is often a quiescent stage which may last weeks or months with gastric disturbance or so called "dyspepsia," the only symptoms remaining. There is usually some loss of weight at this period, and it is the safe time to operate, the mortality now being less than two per cent. Later we will have changes in the walls of the common and hepatic ducts, and frequently in the pancreas.

Now the infection becomes more rapid, jaundice more marked, emaciation more noticeable; the patient is becoming anæmic, with the characteristic "putty like" appearance of the skin. Operation is now a matter of necessity, but the safety line is passed, and instead of a mortality of two per cent. he must face one of over thirty per cent. and surgery is blamed for it. As a rule, in stone impaction of either the cystic or common duct, there is resistance to deep pressure over the right rectus muscle during deep inspiration;

* Read before the Hartford County Medical Association, April, 1906.

there is seldom a tumor palpable when the common duct is obstructed.

We will consider for a moment the symptom of jaundice, which in the past has led us astray in making an early diagnosis. We may, and usually have, stone in the gallbladder without jaundice, unless the infection has traveled to the common duct and produced a choleangitis from absorption or plastic peritonitis in the fissure of the liver, causing pressure jaundice. Jaundice may be produced by a stone being impacted in the cystic duct at the junction of the common, causing obstruction of the latter; the cholangeitic infection by extension into the pancreatic duct may cause chronic pancreatitis, a disease which the future will show is far more common than was formerly believed.

Jaundice, if produced by malignant disease, is usually associated with the early history of gallstones; after a long period of quiescence it is noticed accidentally unassociated with pain gradually progressing, and does not vary from day to day as in common duct obstruction, usually a nodular tumor may be palpated. Jaundice from hypertrophic cirrhosis of the liver may be accompanied by painful attacks, but is usually differentiated by its enlargement, the alcoholic history, enlarged spleen, and ascitis, which is so often present. Many of our cases which we have been contended to call bilious attacks, hepatic fever, cramps, and dyspepsia, would undoubtedly fall within range of the symptoms I have enumerated if the early history and examination were more painstaking. Surgical interference, the only cure, should be advised early before secondary changes, and even cancer has occurred in these organs. The Mayos found that four per cent. of their chronic gallbladder cases were cancerous. Their statistics for gallstones show in 1,500 cases, including cancer, infections and secondary complications, a total mortality of less than five per cent., but this mortality varies from one and one seventh per cent. in uncomplicated gallbladder cases to thirty-nine per cent. in complete obstruction of the common duct with infection, virtually progressing in the same ratio as in appendicitis, from one per cent. or less in clean, early cases to forty or fifty per cent. These figures show beyond a reasonable doubt that the early gallbladder operations are as important as the early appendicitis operation. Observe the close similarity between the two conditions—inflammation confined to the appendix is practically the same as stones in the gallbladder. A ruptured appendix with secondary infection and its consequences means the same as gallstones passing into the duct, and infections following with their chain of symptoms in the liver, gall duct, pancreas, and duodenum. The mortality from both conditions is not from the primary condition, but from secondary obstruction and infection.

We will now consider the second condition so often called "chronic dyspepsia." It is thoroughly understood by all surgeons at the present time that a large percentage of all our cases of so called chronic dyspepsia are ulcer of the stomach and duodenum. For a long time hæmorrhage, obstructive vomiting, and localized pain were regarded as the essential symptoms of gastric ulcer. It was not until the advance in stomach surgery permitted us to study gastric ulcer on the operating table that we were made to realize the great frequency and grave importance of this lesion, and it was not until an efficient and promising treatment was developed that the great practical need of making an early diagnosis was apparent.

In the early stages of at least eighty per cent. of gastric ulcer none of the generally recognized typical symptoms are present, and a diagnosis may seem impossible. However, in spite of these difficulties, I believe we have diagnostic aids that may guide us to an early conclusion in the majority of cases.

First, we should consider the frequency of ulcers compared with other stomach lesions. It is estimated that at least five per cent. of the human race are afflicted at some period with gastric ulcer. Brunner collected six hundred cases of acute perforations, in which one fourth were duodenal. He also showed that ninety per cent. of acute perforations occurred in the site of chronic ulcer, and that diagnostic symptoms usually existed previous to perforation.

We should remember the influence of age, trauma, and habits on the developments of this pathological condition. The average age of patients afflicted with ulcer is about forty years; the greatest number between thirty-seven and forty-eight years, the next greatest between eighteen and thirty years, and the fewest between twenty-eight and thirty-seven years. In other words, the two periods in which stomach ulcer is more likely to occur are during the years of most active development, and near the age that degenerative changes begin. Sedentary habits in young life predispose to this disease, while activity predisposes after middle life. We should remember that gastritis, indigestion, and gastralgia are the most common results, while hyperacidity is the most common cause of gastric ulcer. Ulcer of the stomach, like ulcer of other parts of the body, depends upon local causes, therefore if the stomach wall is immobilized by adhesions or muscular spasm, or partly devitalized by the presence of an old cicatrix or by infected emboli carried by the vascular omentum from some remote region, such as the gallbladder, appendicitis, or pelvic inflammation might furnish. But it is fair to suppose that in a majority of cases the fault lies in the exaggerated corrosive or excessive digestive property of the gastric juice. Unquestionably hyperacidity is by far the most common cause of gastric ulcer and is certainly one of the most significant symptoms.

It is probable that ulcers in early life are produced by hyperacidity alone. They frequently cicatrize with proper treatment, while the ulcers found in patients past the middle life are probably due to the degenerative changes of the scar of the old ulcers which may have been quiescent for years, but which when the reparative powers of Nature begin to decline, are likely to remain open and may give serious trouble. The first form of ulcer is due to an imperfect adjustment of the functions of the stomach, and the last to

Nature's inability to protect scar tissue against the digestive effect of the gastric juice.

The statistics of the Mayos, who have probably had the largest experience in stomach surgery, show in eleven hundred operations on the stomach and duodenum about thirty per cent. of duodenal ulcers. They found gastric ulcers slightly more common in men than in women, while they found duodenal ulcer nearly four times as frequent in men. When we stop to consider the thin walls of the duodenum and the acid discharge from the stomach which has not been neutralized by the alkaline secretions, it is easy to realize why chronic ulcer of the first two inches of the duodenum is relatively more common than in the stomach. Duodenal ulcer is especially liable to perforate, although its sheltered position often gives protection by adhesions.

Many pyloric ulcers will be found to extend from the duodenal side into the stomach, the ulcer involving the pylorus in the great majority of cases.

Frequently saddle shaped ulcers are found in the lesser curvature, extending down the anterior and posterior walls. This causes thickening of the pyloric portion; the circular fibres of the pylorus spasmodically contract when pain is induced by the efforts of the stomach to force the food into the duodenum, or because of organic changes that contract the opening, or cicatricial contraction in the body of the stomach, or perigastric adhesions which interfere with normal mobility; in either of the conditions the stomach usually becomes dilated and may be hypertrophied. Pain is a frequent symptom. The retained food in the stomach will decompose and cause painful irritation, and vomiting often results because of reverse peristalsis. The stomach at all times containing residual food in a decomposed condition cannot be restored to its normal function, except by a surgical operation, which will produce free drainage.

We must take into consideration that the chronic ulceration of the stomach and duodenum not only make the life of the individual a burden, but also the dangers of acute perforation which is practically fatal, unless operated on within eight hours from the time of its appearance. Modern surgery is demonstrating that chronic ulcer is the primary cause of a large percentage of gastric carcinoma. When we stop to consider that nearly one third of all the cancers of the human body occur in the stomach, this is certainly a matter which requires close scrutiny and careful attention.

During a recent visit to the Mayo laboratory the writer personally saw the records of thirty-nine cases of gastric carcinoma out of which twenty-one were engrafted on an old ulcer base, which was over fifty per cent., and several of the specimens could be recognized by the naked eye. As many of these were operated on for supposed ulcer, the proportion was probably high, but in all cases would not average less than twenty per cent., and the indications are that future statistics will show this proportion much higher. We must depend upon the clinical diagnosis of both gastric ulcer and cancer; as laboratory experiments are of value, we should always make them, bearing in mind they are not reliable in forming an early diagnosis; however, a marked hyperchlorhydria is of value in gastric ulcer. Other valuable aids in diagnosis of diseases of the stomach are the presence of lactic acid and disturbances in the motor or absorbent functions of the stomach. Experience has taught us that we cannot depend upon laboratory results in the diagnosis of cancer, as is shown in the following figures which the writer took from the carefully prepared statistics in Mayo's laboratory: Out of sixty-seven gastric cancers operated on where diagnosis was positive, thirty out of the sixty-seven tumors were palpable, marked dilatation of the stomach in fifty-four cases, pyloric obstruction in thirty-six cases, thirty-two of the sixty-seven cases had free hydrochloric acid in considerable amount, twenty-two of the sixty-seven showed no lactic acid; free hydrochloric acid absent and lactic acid present in thirty cases of sixty-seven, less than one half. Free hydrochloric and lactic acid present in seventeen cases. This evidence goes to show that we cannot be sure of our diagnosis by any known laboratory methods at the present time, until the cancer is beyond a reasonable hope of cure, and in many cases even relief of symptoms.

The question arises, Which cases are medical and which are surgical? The dividing line cannot be drawn for years to come. Many patients with the first attack without serious hæmorrhage, who can give up the time and who realize the importance of prolonged rest, will recover permanently under medical treatment, but the following types should be considered surgical: (a) Cases of relapsing acute hæmorrhage; (b) cases with persistent hæmorrhage causing anæmia; (c) perforations; (d) recurrent ulcer, pure and simple, attended with dyspepsia and starvation; (e) pyloric obstruction; (f) adhesions following ulcer or independent of it; (g) scar contraction of body of stomach giving hour glass condition; and (h) some cases of intractable dyspepsia originating in an ulcer and for which the definite pathology is unknown (Munroe).

Moynihan has well said there are none so abjectly miserable as those who are the victims of intractible dyspepsia, the meal time which should be a delight is a time of despair and foreboding, the keen relish of good food which the man in physical health should appreciate, is a joy unknown or long since forgotten to the dyspeptic. A patient who has misery written in every wrinkle of a thin and haggard face, who by reason of long suffering and bitter experience has felt compelled to abandon first one dish and then another, till fluids alone can be taken, and these not always with impunity, a patient, to say the truth, whose life becomes afflicted by the pangs of a suffering which he must inflict upon himself. This patient will find if gastroenterostomy be done for the relief of a chronic ulcer which is the source of all his trouble, that his return to health and appetite is almost at first beyond belief.

Cases of pyloric obstruction are purely mechanical, cases of adhesion from chronic ulcer or gall-

bladder disease can rarely be relieved without operation. The radical cure of gastric ulcer and cancer is now on assured ground with a mortality of five per cent. in favorable cases, and twenty per cent. in less favorable, but still "operable" disease. The only thing necessary to success is the early diagnosis, and this must be on clinical grounds by the general practitioner, supplemented by an early exploratory incision.

Chronic appendicitis with adhesions can and does frequently simulate diseases of the gallbladder and stomach, so that it is impossible to differentiate only at the operating table. It is absolutely impossible to make an accurate diagnosis in all cases between gallstones, infection of the ducts, chronic stomach ulcers, secondary ulcers of the duodenum adherent to the liver and bile passages. This may be readily appreciated when we consider a three inch circle will cover the principal symptom pain of the diseases of these organs. The history may be our only reliable guide to the condition, and we know how often that is defective, but we can say this is a surgical condition, which requires operative interference, the exact nature of which must be determined by exploratory incision, which at best is particularly free from danger, and means only two or three days in bed, if only exploratory.

I feel safe in predicting that the near future will bring about wonderful changes in the treatment of this class of cases, and that the years of suffering from gallstones and ulcers with the secondary complications and cancer, which our patients have tolerated in the past, under the names of "biliousness" and "dyspepsia" will be changed, when the medical man and surgeon work hand in hand to relieve a condition which gives us as large a percentage of recoveries as our cases of appendicitis. This is no idle dream, we have only to glance over the work of Kocher, Moynihan, Robson, and Mikulicz in Europe, Munroe, Ochsner, Brewer, Murphy, and the great work done by the Mayos, which is a credit to American surgery. We will then appreciate at a glance that the experimental stage is passed and that a brilliant future awaits us, a field is open to us which will call forth our best energy and endeavor and our reward is assured.

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25 CHARTER OAK AVENUE.

THE IMPORTANCE OF EARLY RECOGNITION OF NASAL OBSTRUCTION, AND ITS RELATION TO LATER RESPIRATORY DISTURBANCES.

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To live we must breathe. To live in health and in comfort we must breathe naturally and easily in the manner planned and intended by Nature. Anything which alters or disturbs the proper exercise of the respiratory function will sooner or later leave a permanent impress upon or alteration in the respiratory tract itself, or in the organs and tissues in close association to it.

Nature intended that practically all the air we breathe should pass to the lungs by way of the nose, and further that the nose should be so constructed and in such a condition that the inspired air is rendered acceptable to the lung tissues: First, by being raised in temperature from that of the outside air to that of the body; second, that the air in its passage through the nose should become saturated with moisture; third, that the air should be rendered free from all foreign matter (dust, bacteria, etc.); and, fourth, that the lungs should be guarded from injury by irritants in the form of fumes, gases, and noxious vapors, through the warning and protection afforded by the sense of smell and the nasal and laryngeal reflexes.

From this brief review of the physiology of the nose, it becomes evident that if for any reason one or more of these functions are impaired or destroyed, the lungs are then subjected to unnatural and pathological conditions whereby their vitality is reduced and chronic inflammatory processes set up, resulting in a lowered vital resistance and a predisposition to air borne infections. It further follows then that any condition which at once reduces or destroys all of these functions, will be more likely to produce these pathological conditions than an impairment or loss of any single one. This discussion will confine itself to the consideration of those diseases which interfere with the function of the nose by reducing or destroying its capacity to transmit air, by which the whole respiratory function of the nose is lessened or destroyed; in a word, all those lesions of the upper air passages which influence respiration in the production of mouth breathing.

The patency and functional capacity of this tract should be the object of great concern both on the part of physician and parent. Particularly in young children and in those with any susceptibility or predisposition to lung disease, for it is largely through the filtering action of the nasal vibrissæ and the moist convoluted tissue of the turbinals that floating particles are removed from the air in their passage through the nose.

These important and fundamental facts cannot be too well understood and too often reiterated. They should be taught and repeated daily in the course of practice, for it is only by constant teaching and individual instruction that the pernicious belief so often encountered among

patients, namely, that the occurrence of mouth breathing with its accompanying symptoms and disturbances is of little import in growing children, as they will outgrow them in a few years, can be refuted and counteracted, and in its place be substituted a proper recognition of the importance and seriousness of neglected mouth breathing. The longer the existence of the obstruciton, the greater and more firmly rooted become the consequences, so by the time that Nature brings partial relief from the obstruction itself, the resulting habits and disturbance in the respiratory tract have become permanent, and may act as the forerunners of actual disease.

The effects of these obstructive lesions are many, including both local and general manifestations. Very frequently the victim of this condition has been a sufferer so long and has become so thoroughly accustomed to the altered conditions that he is totally unaware of any obstruction.

In children, the parents usually make the discovery by noting the restlessness of the child during sleep, and the tendency to awaken and call for water to moisten their parched lips. Snoring is common to all forms of nasal obstruction. Such cases are usually backward in their studies, appear inattentive, and complain of headache. Upon further questioning we may develop a history of nocturnal enuresis, stuttering, imperfect articulation, diminution in hearing, a dead nasal quality to the voice, embarrassed respiration, and difficult degultition. Examination of the mouth will often show a high arched, palatal vault, with contraction of the dental arches and of the teeth. The presence of one or more of these symptoms should be sufficient to excite suspicion and call for a thorough examination.

I am confident that were a systematic examination of the upper air passages made as a routine method in the examination of children, many unrecognized deformities would be discovered, which properly treated would greatly reduce the tendency to disease of the respiratory tract, particularly the tendency to pulmonary tuberculosis.

Assuming that the ordinary methods of examination and diagnosis are familiar to all actively engaged in practice at this time, it is then only necessary to urge that these facilities be exercised, and that no case which in any way suggests, no matter how slightly, symptoms pointing to nasal or pharyngeal obstruction will ever be passed unexamined and untreated.

Examination should commence by inspection of the mouth for specific ulceration and the scars of old lesions (this is particularly important in children where the possibility of specific taint exists); extending our search backward we note the condition of the fauces and tonsils, behind them the uvula and oropharynx, which present a variety of pathological conditions indicative of disease. Aided by the laryngoscopic mirror our investigation is directed downward, bringing into view the lingual tonsil, the epiglottis, the glottis and contiguous structures, below which we may often obtain a view of the upper part of the trachea.

Reversing our mirror we may then inspect the nasopharynx for adenoid enlargements, hypertrophy of the posterior ends of the turbinals, and the presence of pathological secretion. Inspection anteriorly reveals the condition of the nasal bones, the nasal cartilages, the mucous membranes of the nasal chambers, the inferior and middle turbinals and the sæptum in the anterior part.

Examination methodically carried out as outlined may develop one or more of the following conditions, each of which calls for a special line of treatment: Externally we may find congenital or acquired partial or complete (rare) closure of the nostrils, or paralysis of the alæ nasi. Within the nasal chambers we may encounter hypertrophy of the turbinals, ecchondroses or exostoses of or deflections of the nasal sæptum; polypi or granulation tissue arising from the region of the middle turbinal body; foreign bodies; in the nasopharynx the presence of the adenoid vegetations.

The so called adenoid vegetations are the result of a lymphatic hypertrophy of the tissues lining the pharyngeal vault, usually occurring in early infancy (occasionally congenital), and showing a decided tendency to contract and partially disappear at or near puberty. Adenoid disease is then a disease of infancy and childhood, rarely extending into adult life as a disease *per se*, but frequently leaving in its train pathological changes which may persist throughout the life of the individual. These after effects may be a diminution in hearing from disturbances in the middle ear, chronic rhinitis, also deformities of the chest, of the face, and of the dental arches.

In spite of the prevalence of adenoid disease and the abundant opportunity offered for its study, we are still in doubt as to its true underlying cause. Admitting that it may at times be hereditary, or follow in the wake of infectious diseases, particularly in children of specific or tuberculous taint, we are still at a loss to account for the large majority of cases occurring in children apparently healthy from birth. Until the true cause of origin of this superabundance of tissue is discovered, we remain unable to successfully prevent or inhibit the development of this condition by medical or hygienic measures.

Pathologically we find not a true glandular hypertrophy, but rather an irregular hypertrophic enlargement of the mucoperiosteum of the vault of the pharynx, whereby there are formed depressions and fissures of varying depth and capacity. These irregular masses occur occasionally pendant from the pharyngeal vault; more often they are found on the posterior wall with lateral extensions into the fossæ of Rosenmüller. It is these lateral extensions, which by encroaching on the pharyngeal opening of the Eustachian tube, cause disturbances of hearing. In infancy and early childhood these masses are quite soft and give the characteristic "bunch of earth worms" feel to the palpating finger. Later they become firmer and more resisting through the increase of fibrous tissue. The presence of this form of obstruction may often be recognized at sight by the characteristic blank facial expression,

accompanied by a peculiar character of the voice. Add to this the history of nasal stenosis dating back usually to early infancy, with its accompanying mouth breathing and snoring at night, associated with a more or less constant catarrhal discharge, and the picture is complete.

Ear symptoms are of frequent and early occurrence. Apparent inattention and disobedience on the part of the child, due to beginning deafness, may be the first symptom to call attention to the disease. The victim of this disease often presents an appearance of retarded mental development, characterized by general apathy and an inability to concentrate the attention upon one subject for any length of time. Irregular cough exists as a rule.

In a certain percentage of cases we may succeed in eliciting a history of nose bleed, night terrors, nocturnal enuresis, headache, and more rarely periodic attacks of asthma, which completely disappear after removal of the adenoid mass. Predisposition to repeated colds and to infectious diseases usually exists. Permanent facial, nasal, and chest deformities are the ultimate result of long neglect of the intranasal condition.

Despite this appalling array of consequences, including profound and lasting constitutional disturbances, the prognosis is favorable, if operation is performed sufficiently early, and is complete in its removal of the hypertrophic mass. On the contrary, continued neglect, the result of an erroneous impression that Nature will remove the mass in due course of time without any secondary consequences, may doom the patient to a life of discomfort through greater susceptibility to infection if not to actual disease, through a weakened constitution and diminished lung capacity, not to mention a permanent impairment of hearing in a certain proportion of cases. The complete removal of the growth is clearly the only indication, which should be accomplished at the earliest practical moment.

"Deviation of the sæptum from a straight line is usually associated with a high incisive crest, and where this is well established, the vomer, tending to grow forward, when there is no space in front to permit it to do so, is deflected from the straight line." This deflection is usually to the left. Of the many theories offered in explanation of the ætiology of this deformity, the cited statement, taken from de Schweinitz and Randal, as found in their *American Textbook*, seems to me to offer the most rational explanation from an anatomical standpoint, and is probably the most nearly correct. It is hard to conceive that diathetic or inherited tendencies can in any way influence the condition of the plane of the sæptum, except in so far as the admixture of races produces irregularities in development of contiguous anatomical parts.

Among the external causes productive of sæptal deformity are numbered birth injuries, and the various trauma to which every growing child is subjected in the region of the nose. These injuries may frequently result in deformity without fracture of the nasal bones.

Deflections of the nasal sæptum should always be distinguished from thickenings of the mucous membrane or cartilage, and from osseous outgrowths from the vomer. These two conditions are frequently associated. The deformity is usually only recognized by the secondary disturbances to which it gives rise, and it is one of these which first calls our attention to the case, at which time examination of the nasal chambers reveals the character of the trouble. As a rule sæptal deflections are not discovered in early life, though careful examination often reveals them in the young.

Of the many secondary effects resulting from deflections, the most common is probably nasal stenosis, which is the direct result of the deformity. This obstruction in many cases gives rise to serious inconvenience by interfering with proper respiration, resulting in an alteration in the voice and a chronic postnasal catarrh. It should be borne in mind that while the obstruction is chiefly on the convex side, the combined capacity of the nose to transmit air is often greatly reduced through thickening of the mucous membrane and compensatory hypertrophy of the inferior turbinal of the opposite side. Deformity of the sæptum probably more often than any other one cause, gives rise to epistaxis, due to the fact that irregularities in the surface of the sæptum present certain prominences which are unduly exposed to the incoming current of air, laden with sharp dust particles, whose action is somewhat like that of a sand blast. Another cause of frequent hæmorrhage is the actual apposition of the nasal sæptum and the outer wall of the nose, resulting in a chronic erosion at the point of contact.

Deviations involving the region of the middle turbinal produce changes in the middle turbinal tissue resembling the nasal neuroses, with the characteristic watery discharge and frequent sneezing. Other secondary disturbances are severe paroxysmal headaches, chronic sinusitis involving one or more sinus, the direct result of stoppage of the proper drainage of these cavities. Deflected sæpta are frequently found to exist in cases of chronic hay fever and asthma. When this is the case correction of the nasal condition often results in a cure of these reflex symptoms.

Ultimately the chronic rhinitis and disturbances of aeration may give rise to ear complications, often showing themselves before the catarrhal disease has progressed to any great extent. This is an important fact in the prognosis of ear diseases, for in a certain percentage of such cases correction of the nasal deformity will be followed by improvement in the auditory disturbances. Diagnosis is based upon inspection of the anterior nares, where will be found bulging of the sæptum to one or both sides, usually to the left, with a resulting concavity on the other side partially filled by the compensatory hypertrophy of the inferior turbinal, and more or less thickening of the mucous membrane of the sæptum. This compensatory hypertrophy is almost constant. The use of weak solutions of cocaine and adrenalin applied to the part will greatly facilitate the examination to determine the extent

of the deviation, by eliminating stenosis due to engorged erectile tissue.

The ultimate result of operations on the sæptum for the correction of deformity is usually good in competent hands, except in cases of crumpling of the sæptum from multiple fracture, when the prognosis is guarded.

As far as the secondary disturbances of hearing are concerned we should not be too sanguine of a complete restoration to normal. We can, however, assure our patients that a properly corrected deformity, if the cause of the secondary disturbance will at least prevent further progress of the disease conditions. It is always advisable to recommend corrective treatment in obstinate cases of asthma and hay fever, for while cure cannot be promised, the operation at least offers as fair measure of success as any other form of treatment. Treatment to be successful must be surgical, palliative measures are almost useless and a pure waste of time.

The occurrence of the nasal polyp is more frequent than is usually supposed, Bosworth places their occurrence at once in every eleven cases of chronic rhinitis. Of the neoplasms occurring in the nasal chambers they are by far the most numerous. Usually purely myxœmatous in character they contain very few and minute bloodvessels, and seldom if ever undergo malignant change. Their occurrence does not seem to depend upon hereditary or constitutional predisposition, but they are often found in association with sæptal deformity and partial stenosis from other causes. The disturbance of the blood supply and stasis existing in these conditions probably playing an important rôle in their production. So also do chronic inflammatory conditions of the nasal chambers and of the accessory sinus. They may occur at any period of life, though they are more frequently encountered after the twentieth year than before that time. They are usually multiple and involve both sides unequally. The tumors are generally pedunculated and spring in a large majority of cases from the mucous membrane of the middle turbinal bone and from the ethmoid bone near the hiatus semilunaris. Occasionally they fill the ethmoid cells causing a "necrosing ethmoiditis," in which the spongy sæpta and outer wall of the ethmoid cells in the part usually known as the bulla ethmoidalis are destroyed. Rare cases show the seat of origin to be from the mucous membrane of the sæptum or within the maxillary sinus.

The symptoms depend upon the number and location of the tumors as well as upon the length of time the polypi have existed. The earliest sign of their presence is frequently violent attacks of sneezing accompanied by a profuse watery discharge which not infrequently produces excoriation of the nostrils. Later stenosis becomes evident and gradually becomes more marked. This condition is affected by atmospheric conditions being worse in damp and cold weather. Old cases may show complete stenosis of both sides with a purulent discharge. In these advanced cases frontal and infraocular pains may occur, as does also a nasal quality of the voice, symptoms of sinusitis in the maxillary ethmoid or frontal sinuses, due to obstruction in the hiatus semilunaris may add to the complication of the case.

At this time also appear the various sequelæ of mouth breathing, already described in the consideration for adenoid disease. Diagnosis can only be made by ocular inspection aided by powerful illumination. Of particular aid in showing the extent of involvement is the local application of cocaine which, by nature of its constricting action upon bloodvessels and the erectile tissue of the nose, greatly increases the field of vision. In appearance the masses resemble the pulp of a grape, with a tendency toward a pink or a dusky red color, and a smooth shiny surface. In extreme cases they may be found protruding from either the anterior or the posterior nares or both. In forced efforts of respiration they may be seen to alternately retract and protrude with each inspiration and expiration. This movability is evidence of the pedunculated character of the growth, and may be of service in diagnosis. These tumors are not serious in themselves, as they very rarely undergo malignant degeneration, they are, however, productive of numerous secondary conditions, such as bronchitis, asthma, hay fever, and purulent rhinitis. The rational treatment is early and complete removal.

Hypertrophies and enlargements of the turbinal bodies are frequently found in association with the previously mentioned obstructive lesions. No absolute rule to determine when the size of the turbinal becomes pathological can be laid down, as this is purely a matter of personal judgment and is based upon experience and a knowledge of what constitutes a nose of normal capacity to transmit air, and upon the secondary subjective symptoms of the patient.

Foreign bodies are as a rule found only in the young, in idiots, and in the insane. They may consist of anything in the mineral, vegetable, or animal kingdom capable of being introduced either through the anterior or posterior nares. The symptoms are partial or complete stenosis on one side of sudden origin, with complaint of pain in the nose on the patient's part, followed by a profuse unilateral watery discharge which rapidly becomes purulent in character. Diagnosis is based upon occular inspection after appropriate cleansing and the application of adrenalin and cocaine.

The presence of partial or complete closure of the nostrils is determined by inspection, and is self evident when complete, when partial this cause can only be held accountable for mouth breathing when careful inspection of the interior of the nose and pharynx fails to reveal the presence of sufficient cause for the patients obstructive symptoms. The presence of scars from burns or from syphilis will naturally direct our attention to an inspection of the part.

Paralysis of the alæ nasi is marked by an undue flapping of the nostrils during respiration, the movement being sufficient to embarrass respiration by preventing the passage of air into the nose.

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RECENT WORK IN CLINICAL PATHOLOGY. SPUTUM, GASTRIC CONTENTS, FÆCES.

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SPUTUM.

Examination of the sputum has developed bacteriologically, particularly in respect to acute infections of the respiratory passages classed as grippe, since Kitasato (1) suggested the simple method of washing sputa in sterile water or salt solution or in water heated to 80° to 90° C. before planting upon media, and in this country since Lord and Smith's (2) publications concerning chronic influenzal infections and bronchiectasis. Pfeiffer has for several years recognized the multigenetic nature of grippe. Articles by Moritz (3), Kleinberger (4), Dunn and Gordon (5), and Bezançon and de Jonge (6) show results similar to those we are obtaining in New York, that grippe, acute or chronic, may be due to one or more organisms singly or mixed, and that the most common are the micrococcus catarrhalis, pneumococcus, streptococcus, micrococcus tetragenes, and the pneumobacillus. Most important of all, some of these writers emphasize the fact that a grippe is a cold produced by a local infection, and when reachable as in the nares should be treated locally as well as by systemic medication. The same organism may at one time produce an acute coryza, again an acute bronchitis, again a definite pneumonia (lobar or bronchopneumonia depending little upon the type of organism), and again the chronic bronchitic conditions. The rarity of the specific influenza bacillus is to be noted.

In addition to staining for tubercle bacilli, sputa should be examined after staining by Gram's method, and, in properly selected cases, cultures prepared upon proper media. Hiss's (7) inulin media is to be recommended for separating pneumococci from organisms resembling it in morphology and some cultural characteristics. In addition to the older methods for staining capsules of encapsulated bacteria several new methods have been described in this country by Buerger (8), Epstein (9), and Hiss (10). With us Welch's older method (glacial acetic acid, aniline gentian violet, two per cent. sodium chloride solution), and His's method of staining with a hot solution of gentian violet (saturated alcohol solution, 5 parts + water 95 parts) and washing out with a twenty per cent. aqueous solution of copper sulphate, have given good results, provided the sputum or the other material were fresh, not standing more than three or four hours, freshly exuded, or from young cultures.

SEROUS FLUIDS.

Exudates, Transudates, and Cerebrospinal Fluid.

Under serous fluids are classed the exudates and transudates from serous cavities and the cerebrospinal fluid, to all of which the newer methods of cytodiagnosis and inoscopy apply. The physical and chemical methods of examination for such material have been practically discarded, for the specific gravity and the degree of concentration, and thus the percentage of albumins and urea and sugar vary so with duration of exudation or transudation that observations may be misleading. The fact that such a fluid as spinal fluid contains normally no serum-albumin, but a globulin, is of no import in practice, for there are at hand no methods which permit of a ready separation of serum-albumin and globulin in small quantities of fluid, and Halliburton's (11) suggestion that the presence of nucleoalbumin in the cerebrospinal fluid means a pathological condition since nucleoalbumin is not found in normal fluid, has not been borne out by our examinations of a hundred fluids; as a rule it is impossible to demonstrate, with small amounts of fluid, normal or pathological, any reaction suggesting nucleoalbumin. Halliburton's fluids were taken from the cadaver.. The fluids we have examined were withdrawn by lumbar puncture during life (6 to 25 c.c.).

The methods for cytodiagnosis are simple, calling for practice in differentiating three cell types, polynuclear, small mononuclear, and large mononuclear (which are largely endothelial cells) cells. One recognizes the three formulas of Ravaud and Sicard, the lymphocytic or tuberculous, the polynuclear or nontuberculous infectious, and the endothelial or transudate index. The results from careful work are constant and quite absolute, with exception of ascitic fluids, prostatic fluid with exudation, and urine with exudation. In searching for tubercle bacilli in these same fluids one may wait for clot formation and stain the clot or the fluid squeezed from the clot, or one may use Jousset's (12) original method of digesting the clot with artificial digestive fluids (hydrochloric acid, pepsin, sodium fluoride). This method of Jousset's (inoscopy) is suitable for ascitic as well as for pleural, pericardial, arthritic, and spinal fluids.

Edsall (13), Wilson (14), and Fuller (15) have called attention to the recognition of chylous and chyloid fluids from the pleural and peritoneal cavities, and in the contents of abdominal cysts, emphasizing the necessity for distinguishing the chyloid from the chylous fluids the appearance of which (chyloid) may be due to disintegrated fatty tissue cells, globulinlike bodies, or combination of globulins and lecithin. Aside from the application of cytodiagnosis and inoscopy to spinal fluids the one method of interest has been that of Halliburton (16) for finding cholin in the spinal fluid of certain degenerative diseases. Cholin, which comes from the disintegration of lecithin, has peculiar physiological properties when injected into the circulation of living animals, which makes its recognition in this manner possible. Halliburton (16, 17) elaborated a method of isolating the substance as a cholin platinum chloride salt recognizable by the yellow tetrahderal or octahedral crystals, and by this method found cholin in the blood serum and in the urine in some cases. Donath (18) published reports of investigations with many positive results in cases of epilepsy and in cases of diseases of the central nervous system. It can be shown, however, that cholin cannot be recognized by such a method, since potassium and ammonium salts give similar crystals with platinic chloride, and Halliburton,

to-day I believe, recognizes the method as unreliable, so the chemical examination of the spinal fluid can be again for the time being discarded, unless sufficient fluid is obtained for carrying out physiological experiments on animals.

Through the kindness of Dr. Wolf we have been able to obtain tracings of the physiological effect upon dogs of cholin isolated from the egg yolk, and tracings also of supposed cholin isolated by this crystal method from cerebrospinal fluid, and the latter tracings showed definitely that, although the crystals resembled those of the cholin platinum chloride, yet the material from which they were obtained produced no physiological effect comparable to the cholin isolated from egg yolk. Recently Otto Rosenheim (19), under Halliburton's guidance, has gone into this subject thoroughly and has found the former method of Halliburton, and also the method of Donath, unreliable, and has utilized the principle of Florence's test for semen in which the reaction depends upon an iodine combination with cholin (the periodide of cholin) occurring when the cholin platinum chloride crystals obtained by Halliburton's method are treated with a solution of iodine (iodine 2 parts, potassium iodide 6 parts, water 100 parts). The characteristic changes in the crystals are observed with the microscope. We have submitted the crystals from cases of cerebral hæmorrhage and tuberculous and non-tuberculous meningitis to this test, and have not found any positive reactions in fourteen cases.

Serum from Scarifications and Gland Aspirations, and Klatsch Preparations.

With the advent of the study of spirochætæ of all types a simple method of examination long neglected has been revived, that of scarifying a lesion of the skin, and of making a *Klatsch* preparation of the exuded serum, by which method the diagnosis of leprosy without tuberculous lesions may be confirmed; and the successful aspiration of syphilitic glands suggests this method as of possible assistance in the study of conditions characterized by glandular enlargement. The quickest and most useful method of staining such serum smears for *Spirochæta pallida* (*Treponema pallidum*) of syphilis is after Goldhorn's (20) method: Allow the serum or bloody fluid to dry in the air, flood the dried smear with Goldhorn's spirochætæ stain for from four to five seconds, dip in a glass of tap water for the same length of time, move the slide back and forth in the water to wash off the excess of stain, and finally stand the slide on end or move about in the air to dry. For the further study of the spirochætæ and similar organisms Löffler's flagella stain is to be recommended.

GASTRIC CONTENTS AND TESTS FOR PEPTIC AND TRYPTIC DIGESTION.

There is little to be said in regard to the examination of gastric contents. Fischer (21), in 1904 in this country, published a good critical summary of methods in vogue, and gave more exact methods for estimating the acid constituents of the gastric secretion. Most of the articles have dealt with Sahli's (22) test meal, and the estimation of the fats and acids in the gastric contents one hour after ingestion. Theoretically Sahli's method is a marked advance over older methods in that it eliminates in part errors due to variations in gastric motility, and to solution and resorption of albumins, both of which influence the results of determinations by the usual titration methods. Whether Sahli's method shall become the standard or not depends upon the specialist, since little gastric material goes to a general laboratory for examination. The desmoid test recently introduced by Sahli (23) is one readily carried out and one which will give evidence of the presence or absence of the function of the gastric juice, notwithstanding the absence or the presence of hydrochloric acid in the gastric contents after a test meal. The patient is given with the midday meal a pill of methylene blue (0.05 gramme = 1 grain) or of methylene blue and iodoform (0.1 gramme = 2 grains) enclosed in a small rubber sac of dental dam tied with small catgut, which has not been subjected to chemical or thermal treatment for sterilization: This raw catgut, which is uncooked connective tissue, is readily digested by the gastric juice (peptic digestion), but not by pancreatic juice (tryptic digestion), as shown by Schmidt (24) in 1899. Six or seven hours after and again eighteen or twenty hours after ingestion the urine and saliva are tested for iodine, and the urine is noted for methylene blue. A positive test, early or late, signifies the presence of gastric digestion.

Boas (25), in the *Deutsche medizinische Wochenschrift*, has recently discussed these more elaborate methods and has concluded that a return to the simplest method, that of the Ewald test meal, followed by determinations of the total acidity, of the free hydrochloric acid, and of the presence or absence of lactic acid, together with the quantitative estimation of pepsin and renin, is desirable, provided one follows closely Ewald's directions, particularly those relating to the necessity for giving the test meal after washing the stomach free from food residue. One should also note that the presence of mucus, blood, and bile interfere with quantitative estimations, and under such conditions the results of examinations in respect to acidity may be unreliable. If one reads this article carefully it will be seen that deductions to be drawn from the acidity determinations are limited and at times uncertain, as one would expect from clinical experience; one should know when to disregard as well as when to respect a gastric analysis. Reliable tests for pancreatic function (tryptic digestion) have been long searched for, that of Sahli (26) probably being the one most useful if any of them are sufficiently reliable to be used. Sahli first wrote of his "glutoid capsule," prepared from gelatin hardened with formaldehyde, in 1897 and again in 1898, particularly in reference to their diagnostic and therapeutical use. Schmidt (27), in his monograph of 1904 (pages 39 to 41), discusses the use of these "glutoid capsules," and proposes a test with small squares of fresh beef which have been hardened in alcohol and enclosed in pieces of silk gauze. The preparation is swallowed and later collected from the stool, washed, and prop-

erly sectioned in order to study the changes in or disappearance of the nuclei of the muscle fibres and of the muscle fibres themselves. We have had no experience with either of the methods—Sahli's or Schmidt's—and therefore refer the reader to the original articles of Sahli and the monograph of Schmidt.

FÆCES.

Notwithstanding the amount of work recognized by Schmidt (28) and Strassburger in their book on the *Fæces of Man*, little of real value has been added to the knowledge obtainable by examination of the fæces. Careful search for parasites and ova, for tubercle bacilli, and tests for fat and urobilin remain of value. Tests for blood by Weber's (29) method are of value only when the patient has been practically free from a meat diet for forty-eight or seventy-two hours, a condition which often obtains during an illness, or may be readily established. Schmidt's (30) theory of the variations in fermentation and gas formation is not yet upon a sufficiently stable basis to be practical. This fermentation depends upon so many other conditions than the presence of starch and gas forming bacilli that Schmidt's conclusions are not justified. Schorlemmer (31), in 1900, published a lengthy article in refeernce to the delicacy and value of Schmidt's sublimate test for bilirubin, a test which to us has presented nothing of value, while on the other hand, tests for urobilin (hydrobilirubin) have not infrequently served their purpose in proving the presence or absence of bile pigments in the duodenum, in cases of cholelithiasis before and after operation. Methods of testing for urobilin after extraction with amylic alcohol or sulphuric acid alcohol are to be found in most of the textbooks on physiological chemistry.

Physical Chemical Methods.

The physical chemical and physical methods of examination can be passed over briefly. These methods are applicable for the examination of any of the body fluids and secretions, normal and pathological, and most of them aid no more in diagnosis than methods calling for less apparatus and less application, and, therefore are naturally being neglected. Cryoscopy, determinations of the viscosity of the blood and other fluids, studies of osmotic pressure, refractometry, determinations of the electrical conductivity come under this class. Traube and Blumenthal (32) have recently described the latest, the determination of the surface tension of liquids by means of the stalagmometer, a process termed stalagmometry. The stalagmometer is a dropping pipette in which a definite amount of fluid is contained between two markings, and from which through a capillary tip surrounded by an inverted cup shaped surface of certain dimensions the fluid is carefully dropped, the number of drops noted and compared with the number of drops for the same amount of distilled water. The number of drops is greater as the volume of each drop decreases, the capillary tip and the end surface being constant. One establishes the number of drops for distilled water for each instrument, and thus determines the factor for converting the readings for any fluid into terms of one hundred drops of distilled water. For example, if an instrument drops fifty-three of distilled water the factor in terms of one hundred for milk or urine is X $^{100}/_{53}$, where X is equal the number of drops of milk or urine, necessary to empty the marked portion of the tube. Traube and Blumenthal have determined the index for gastric contents, milk, urine, serous fluids, blood serum; and from their publications it does not seem likely that such a method is to be considered valuable clinically. We have examined in this manner a hundred urines from cases of chronic interstitial and parenchymatous nephritis, diabetes mellitus, melanotic sarcoma with melanuria, gout, icterus, cystitis, hepatic cirrhosis, and pregnancy. The results agree with those of Traube and Blumenthal, the precarious nephritic conditions and the case of melanuria producing exceedingly high drop numbers. Likewise, the drop numbers for maternal milk, and for gastric contents, gave figures similar to Blumenthal's. Such a method of examination does not furnish information in diagnostic detail, and only does furnish information of diagnostic value which is unavoidably obtained through the usual clinical and laboratory methods of examination, so that one may place stalagmometry among the class of interesting physical chemical procedures which are unnecessary and of doubtful utility. Elimination tests, which have been used particularly in conjunction with cryoscopy, are more to the point and are to be recommended in the study of renal function. The methods which call into use subcutaneous injections of indigocarmin, methylene blue, or phlorizin, and the ingestion of fixed amounts of sodium chloride, are well known. One method not so generally known is that mentioned by Achard (33) as performed experimentally upon animals, the simultaneous injections of methylene blue subcutaneously and of casein intravenously, for the proving of a contracted kidney, in which condition the methylene blue excretion is less than and the casein excretion greater than normal in amount and rapidity of excretion. Achard does not state that this method has been applied to his patients, and it stands, therefore, only as an interesting experimental observation.

From such a hurried review of the exceedingly large amount of work related to laboratory diagnosis done during the last five years one cannot expect to gather detailed instructions for trying out the methods suggested; the original articles should be consulted. We have given considerable time to these methods, excepting one or two as mentioned in the text, and the statements in respect to their utility and value are based upon experience. The lack of commendatory statements for many accurate methods is due not so much to poor results with such methods as to the fact that similar useful results are to be obtained from simpler methods long in vogue, and naturally one would recommend the latter.

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SYMPTOMATOLOGY AND DIAGNOSIS OF GASTRIC ULCER.

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Before entering upon the discussion of this subject I wish to define my position regarding ulcers of the stomach. I believe there are two different forms of stomach ulcers, between which the principle difference is their ætiology.

One of which, and by far the most common, is the peptic gastric ulcer, so called because of the vicious action of excessive hydrochloric acid in the gastric juice. This form of ulcer never occurs, as stated in a previous paper, outside the influence of the gastric juice; upon a hyperacidity of which it depends as its principle ætiological factor.

The second form does not differ from that found elsewhere in the body, and has for its ætiological factors those conditions which produce ulcer anywhere else. In other words, the stomach is subjected to its own peculiar ulcerative processes, due to its peculiar functions and secretions. But these do not exempt it from the action of those conditions that produce ulcers in other tissues of the body, especially the alimentary tract; prominent among which, I believe, is varix of the veins of the pylorus, or a similar condition to that found in the rectum. This latter form of gastric ulcer is comparatively rare; in the ætiology of which excessive hydrochloric acid in the gastric juice does not play a necessary part. In other words, this form of ulcer may develop and perform its vicious work during a long period of time without a hyperchlorhydria being present at any time, just as it may develop in any other part of the alimentary tract. It is not more common in the stomach wall than elsewhere; the vice versa probably is also true.

Symptomatology, or the science of symptoms, is that science by which one not only differentiates between different diseases and places them in their proper catagories, but also enables one to distinguish between the values of symptoms as diagnostic factors in every disease. A systematic application of this science in all diseased conditions is of the greatest value.

A diseased condition of any important organ has a multitude of symptoms, most of which are worthless diagnostically. These symptoms or findings in any condition may be classed as follows: Positive, essential, valuable, and minor. The positive findings are those which establish the diagnosis, as for instance, the tubercle bacillus in suspected tuberculosis. The essential symptoms or findings are those that must be present in order to make a diagnosis, but may also be present in other conditions. In other words, the diagnosis will not rest upon these alone, neither can it be established without them. Valuable symptoms or findings are those which strongly support the essential findings, and in diseased conditions that do not admit of essential findings, the diagnosis must rest upon the valuable findings. The minor findings are those that add to or detract from the valuable symptoms in a general way, and upon which a diagnosis could not be established. Symptomatology then teaches the value of findings and symptoms in diseased conditions.

There is no greater fallacy than that which attempts to build a diagnosis on a mental picture produced by a totality of symptoms. The mental picture may be typhoid fever, the true condition cholecystitis. Probably every physician has a system of applying symptomatology by which he builds his diagnosis in every disease, though he may use it unconsciously.

It has been my experience that a diagnosis will stand upon the essential symptom in any disease, supported by two valuable symptoms. Or in diseased conditions not admitting essential symptoms, the diagnosis will stand upon three valuable

symptoms, supported by the minor symptoms.

The symptoms of gastric peptic ulcer, as recited by a patient, are frequently a discordant jumble, which means nothing definitely, as a whole, to the trained mind, excepting that which it is able to screen from the mass. Three unmistakable definite and certain symptoms must be eliminated from the jumble before a positive diagnosis of gastric peptic ulcer can be made, and one of these must be in every case the essential finding, hyperchlorhydria. Several groupings of three such symptoms can be constructed from the total valuable symptoms and the essential finding of gastric peptic ulcer, among which we may recite the following:

Group 1.

a. A history of long continued hyperchlorhydria.

b. Pain commencing a half hour after eating, spasmodic in character, always at one point in the pylorus, and reproduced. exaggerated, or made continuous by shifting the contents of the stomach to the site of the ulcer, usually done by turning the patient on the right side.

c. Hæmatemesis, if the blood is fresh, as it often is, the value of the symptom is increased, doubt being removed as to the nature of the vomitus.

Group 2.

a. Hyperchlorhydria as in group 1.

b. Pain as in group 1.

c. Primary anæmia or chlorosis.

Group 3.

a. Hyperchlorhydria as in group 1.

b. Pain as in group 1.

c. Vomiting soon after eating continuous and persistent, in spite of remedial measures.

Group 4.

a. Hyperchlorhydria as in group 1.

b. Pain radiating from the pylorus in different directions, frequently felt between the shoulder blades and intercostal spaces, *which pain is greatly aggravated by deep pressure over the pylorus.*

c. Marked anorexia.

Group 5.

a. Hyperchlorhydria as in group 1.

b. Hæmatemesis as in group 1.

c. Anæmia or chlorosis as in group 2.

Grouped about the three symptoms in each of these five groups or in any case will be numerous minor symptoms, which add to, or detract from, in a measure the value of the valuable symptoms, many of which are of a reflex nature, each requiring thought in order that it may be placed in its proper relation to the case. In every case, however, the essential finding and the two valuable symptoms that support it, must be so definite and certain that the evidence produced by the minor symptoms can in no way disturb the diagnosis. We must also bear in mind that the valuable symptoms are not all of equal value as supporters of the essential finding. These stand in my judgment in about the following order: Hæmatemesis, as in group 1; pain, as in group 1; primary anæmia or chlorosis, anorexia, as in group 4; and vomiting. as in group 3.

In building a diagnosis of gastric ulcer, we must bear in mind the fact that hæmatemesis only occurs in about half the cases, and that sometimes when it does occur we do not get the history for reason of the changed appearance of the blood after remaining in the stomach a short time prior to emesis. Hence, we must make the diagnosis in more than half of the cases without this valuable symptom.

The conditions of primary anæmia or chlorosis when present are of great diagnostic value, as these conditions render the tissues less resistant to the vicious influences of excessive hydrochloric acid in the gastric juice, and markedly predisposes to gastric peptic ulcer; but this condition is only present in about twenty per cent. of the cases, hence we must make the diagnosis in eighty cases out of every hundred without the aid of this condition. It must also be borne in mind that the symptoms of pain, vomiting, and anorexia, while frequent symptoms of gastric ulcer are also frequent findings in many other stomach troubles, and in diseased conditions of organs in close proximity to the stomach, hence they must be modified in such a manner that, when present, they speak more forcefully for this condition than any other before any value can be given them as diagnostic factors.

It has also been my experience that a probable diagnosis of certain diseased conditions can be made on two valuable symptoms. This is eminently true in gastric peptic ulcer, as the essential finding is so prominent a factor. The following groups are examples:

Group 1.

a. Hyperchlorhydria long continued.

b. Pain as described in group 1 of the first series.

In this case we would also think of gastralgia, and decline a positive diagnosis of gastric peptic ulcer, though the preponderence of evidence seems to be in its favor.

Group 2.

a. Hyperchlorhydria as in group 1.

b. Hæmatemesis as in group 1 of the first series.

The question here hinges on the cause of the hæmorrhage. What can it come from if not from ulcer? We must here bear in mind recurrent hæmatemesis due to a neurotic origin, or hysterical hæmatemesis, or if in a female vicarious hæmatemesis, any of which may cause the hæmorrhage and preclude a positive diagnosis of gastric peptic ulcer, but the infrequency of these conditions compared to the frequency of hæmorrhage from ulcer makes it more probable that the blood is from an ulcer; hence, a probable diagnosis of gastric peptic ulcer.

Group 3.

a. Hyperchlorhydria as in group 1.

b. Vomiting as in group 3 of the first series.

In this case we would think of a simple hyperchlorhydria. The severity and long continued character of the symptoms, however, in spite of well directed therapeutics, makes the diagnosis probable ulcer.

As before noted ulcers of the stomach sometimes occur, the hydrochloric acid of the gastric juice being normal, less than normal, or wanting. These ulcers, however, are not peptic ulcers,

hydrochloric acid not being a necessary ætiological factor in their production. They are due to three independent conditions and may be placed, in my judgment, in three different catagories. One of the conditions that may cause them is blood stasis in the gastric wall due to varix, embolus, thrombus, or conditions of a nervous nature that may produce blood stasis. A second condition that may cause them is a specific lesion. A third is a tuberculous process. Their symptoms, excepting the absence of the hyperchlorhydria, are not different from peptic gastric ulcer.

We do not wish to convey the idea that hyperchlorhydria cannot be present in these cases. It simply is not essential to them. In a recent case of ours hæmatemesis of fresh blood occurring frequently, every two or three days, pain, as in group 1, and marked anorexia were the valuable findings in the case. A positive diagnosis of gastric ulcer was made and verified, gastroenterostomy being done in the case. This was not a gastric peptic ulcer, but an ulcer due to blood stasis.

To make a differentiation between the ætiology in these cases we have used the following plan: If the gastric juice contains a normal or even less than normal hydrochloric acid, we exclude tuberculous ulcer, because the tubercle bacillus will not live in an acid medium. We then exhibit antispecific therapeutics. If the case improves immediately the diagnosis is positive. If there is no improvement the case probably belongs in the catagory of ulcers due to blood stasis.

Many interesting questions arise from the study of the symptoms of gastric ulcer, among which we may mention those connected with pain. The vagaries connected with the pains of gastric ulcer are indeed curious. In some cases this symptom being of infinite value diagnostically, while in others it is of no value, and yet the cause of the pain is the same in both cases. This is due to two well known facts. Pain is almost an universal expression of diseased conditions, and, second, pain is not always located at the diseased foci. If pain then is to receive value as a diagnostic factor in any disease, it must possess certain qualities as to time, nature, and place, which make it more probable that it is an expression of that disease than any other. This is especially true in gastric ulcer. As there are so many conditions in and around the stomach that cause pain, other than gastric ulcer, to interpret pain as an expression of gastric ulcer requires that it shall possess certain definite qualities or it is valueless diagnostically. Many errors have been made by too highly valuing pain which was not properly qualified. For instance, pain as in group 4, unless this pain can be markedly aggravated by deep pressure over the pylorus, it is worthless as a symptom. Such a pain would speak more frankly for intercostal neuralgia, which condition has often been mistaken for gastric ulcer. Vomiting is also a condition that unless so qualified that it speaks more decidedly for gastric ulcer than for any other condition, it must be discarded as a diagnostic factor. There could be nothing more perilous in the building of a diagnosis of gastric ulcer than that an important factor, entering into it, should be unqualified pain or vomiting.

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APPENDICITIS. A PLEA FOR COMPLETE OPERATIONS IN PUS CASES.*

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Appendicitis has been known as such for twenty years, since Fitz established the pathology of the disease. During those years it has given rise to many difficult problems and has caused much discussion, often bitter. At first a man was venturesome who dared to operate at all, then it was acknowledged to be permissible to open an appendiceal abscess without entering the peritoneal cavity. Later in 1887 Treves straightened out an appendix, and Sands trimmed off the edges of a fistula in the appendix and closed it. Krönlein removed an appendix in 1884, but it was only after McBurney's paper (1), in 1889, that removal of the appendix became at all general. The next question to arise was under what circumstances the appendix should be removed. At first the surgeon would watch to see how the attack was going, and would only operate if it was getting worse, and even in the interval he would operate only under certain conditions. A little later he went a step further and always advised operation if the case was seen in the first forty-eight hours, but after that thought it was better to wait until the abscess was "walled off," or until an interval operation could be done. Needless to say, many cases did not reach the "walled off" or interval stage. As recently as 1899 Dr. White, in the chair of Surgery at the University of Pennsylvania, gave so many rules as to when to operate and when not to, that the student hated to be asked the question as to how to treat appendicitis. Fortunately, these rules are rapidly dropping away, so that to-day it is almost universally acknowledged that, as soon as the diagnosis of appendicitis is made, the appendix should be removed.

To show the change of opinion that has taken place, I want to read you what Dr. Richardson, of Boston, one of our greatest appendicular surgeons, wrote last year, and what he wrote in 1898.

In 1898, after reporting 653 cases of all kinds, with a fourteen per cent. mortality, he said: (2) "The greater one's experience in all classes of acute cases, the greater the number that will justify serious doubts as to the advisability of interfering in every case as soon as the diagnosis is made." In 1905 he had reduced his mortality to 2 2-3 per cent., and then he says: (3) "I operate in all cases as soon as possible, except when moribund. The only objection to operative treatment seemed at first to be the apparently unavoidable extension of infection—the breaking up of adhesions, and the spread of septic fluids throughout the perinæum—the churning up, as it were, of pus and small intestines in the depths of the abdomen. That objection exists to-day, and the evils of such a procedure are fully as great as they ever were. The improvement in operative technics has, fortunately, reduced to a minimum this danger, and has made it far less than the danger

* Read before the Rochester Pathological Society, May 3, 1906.

of nonoperative treatment." A little later, in the same paper, he says: "I was forced to admit time and again that I ought to have operated instead of waiting."

I think that this same change of feeling has taken place very generally throughout the country, so that if I turned to the surgeons present here to-night and told them that a case of appendicitis came to me this morning, and asked them their opinion as to operation, they would say, with little hesitancy, "operate at once, whether it is the first day, the third day, the fifth day, or later, whether there is pus present or not, and whether the wall of limiting adhesions is present or not." The one surgeon who still holds to the old doctrine of delay in certain cases and who still teaches it is Ochsner. He has reported (4) a thousand cases with a low mortality, claiming an especially good record in cases of general peritonitis, of which he reported thirty-three cases with ten deaths. Of course, in the cases that recovered, his diagnosis depended entirely upon symptoms unverified by operative findings, and it is possible for the best of us sometimes to make mistakes in the diagnosis of general peritonitis. The same treatment when applied by the Mayos at St. Mary's (5) in three cases gave three deaths.

If the treatment in the hands of such distinguished surgeons gives such a mortality, it had better be left in the hands of the originator. I have seen the method used in one case; it died promptly. I believe that Ochsner's teaching has been distinctly harmful, undoing much good work that has been done, and tending to recall the old methods of delay, waiting for adhesions, "walling off," etc. With the exception of this surgeon and his adherents, every one is operating promptly now, and the result is a great decrease in the mortality of the disease.

In the chronic or interval cases the Mayos report, (6) for 1905, four hundred and sixty-seven cases without a death; Van Buren Knott reports (7) six hundred and forty-seven cases, with one death, and Dr. Richardson (8) has passed his thousandth case without a death. Such results are satisfactory. We can ask for nothing better, so we can consider the treatment of such cases as settled. The technique that has accomplished this is good enough. In the acute cases before rupture has taken place the results are also good. Deaver, in a year's work, has one hundred and ninety-four cases with three deaths, a 1½ per cent. mortality, Knott has a less than one per cent. mortality, and Price has a nil mortality.

But there is one class of cases in which the methods of treatment are very diverse and where the mortality is still larger than it should be. I refer to the cases in which the appendix has ruptured, and in which pus is present about it, either in the form of a circumscribed abscess or a general peritonitis. Deaver reports (9) one hundred and eighty-three of these cases in 1903, with twenty-two deaths, i. e., a mortality of twelve per cent. These cases are still common, though not as common as ten years ago, when most surgeons were waiting for an abscess to form and localize itself, that they might lance it. The general recognition of the fact that an early operation should always be sought, the earlier the better, has done away with many of the pus cases, but still many do not come to the surgeon until this stage has been reached, and then the question arises as to how these cases should be treated. Twelve per cent. is too big a mortality; we are not perfect here yet.

The first case on record of what was probably appendicitis is that which Mestivier reported (10) in 1759. It was a pus case. He cut through the abdominal wall and the pus gushed out. He drained the abscess. The patient died. Marion Sims, (11) in 1835, found a case out in the woods which had been sick for months with abdominal pain. It was at the very beginning of his practice, and he called another young fellow in consultation. The latter said that the patient had fungus hæmatodes and would die. Sims said there was pus in the belly and advised the use of the knife. This was finally agreed to, and the pus ran for weeks from what was probably an appendiceal abscess.

Gentlemen, some surgeons to-day are treating an appendiceal abscess in the same way. One hundred and fifty years of work have made no difference to them; our knowledge of the appendix and its diseases, and our knowledge of how to handle the intestines in the presence of pus have not changed their methods. They shut their eyes to the pathology that they know is present, and, like the ostrich who hides his head in the sand, they think what they can't see won't hurt them. These gentlemen say that they get good results, but read through the cases collected by Dr. Munro in his article on *Lymphatic and Hepatic Affections Secondary to Appendicitis*" (12), and see what some of these imperfect and late procedures lead to. He has personally seen forty-one cases of subphrenic abscess, liver abscess, phylephlebitis, splenic abscess, etc., infections in other parts of the body secondary to appendicitis, and he mentions many other similar cases recorded by others. I have copied from his article the following six cases as illustrations:

CASE I.—J. S. C., male, ten years old, was operated upon in 1898 for acute appendicitis one week after onset. There was a gangrenous appendix with an abscess cavity full of gas and foul pus. There was another pus pocket in the pelvis and one behind the right kidney. The patient seemed to make a satisfactory and rapid recovery, but fourteen months later he developed a retroperitoneal lymphangeitis, and was sick for weeks, though he finally recovered without operation.

CASE II.—C. D., male, thirty-five years old. Operated on August 11, 1896; an acute appendicular abscess was found. It was drained and appendix removed. Three weeks later there was left only a healthy sinus about an inch deep, but the temperature which had been normal began to rise. There was vomiting, and chills, and pain over the liver, which became steadily worse, and on September 13th the abdomen was again opened and pus sought for in the liver. It was not found, but a week later the abdominal incision, which had been healing nicely, burst open with an escape of pus and bile. The wound was flushed out and continued to discharge for seven weeks, and during this time the patient was also expectorating pus. On November 8th the incision healed and the expectoration ceased, and on December 7th he left the hospital well. He had been in the hospital about five months.

CASE III.—W. C., male, thirty-six years old. Has had several attacks of appendicitis; the last two weeks ago. There is now an epigastric tumor which on aspiration shows pus. This is opened, and a large group of abscesses found in the right lobe of the liver.

These are drained. Then a lower incision is made, and a gangrenous appendix removed, and another abscess drained. Patient died two days later.

Case IV.—Sheen, in 1896, reported the following case: A woman, twenty-seven years old, had an appendiceal abscess opened and drained. The appendix was not found. No improvement followed, but delirium, jaundice, and chills came on. A month later a large mottled liver was explored, but nothing found. The jaundice then faded, but an abscess in the neck developed and had to be opened. Two and a half months later a swelling appeared in the lumbar region between the ninth and tenth ribs. It was opened and foul pus evacuated. Recovery followed.

Case V.—Koch reported the following: Man, forty-eight years old, was injured in his appendix region in April. The following September he had an acute attack of appendicitis which was not operated on. Three weeks later he had an enlarged liver and was jaundiced. A week later he was operated upon and in three days the autopsy showed a gangrenous appendix with abscess and multiple abscesses of the liver.

Case VI.—Eisendrath has reported a case which he first simply opened and drained. No improvement occurred, and a few days later he opened again and removed the appendix. Sepsis still continued, and three weeks later he drained an abscess between the liver and spleen. Death followed two weeks later.

All these patients are examples of delay or incomplete work. They did not all die, but those that recovered were sick for months and had narrow escapes. These complications often take place in what seem like mild and latent infections, but as a rule in cases which have been operated in very late in the attack, or where some foci of pus have been left behind at operation.

Dr. Brewster (13), one of the younger operators of Boston, reports one hundred and forty-five acute cases, with six deaths. Two of these deaths were in well localized abscess cases, and one other from obstruction six days after the removal of a gangrenous appendix. Dr. Abbe (14) reports ten cases of obstruction following appendicitis that he has had in two years of private work. There were three deaths.

But now to come down to personal knowledge. There is a man in this city whom I know well, walking the streets to-day with a sinus in his right groin three years after a delayed drainage operation. He is troubled by a phlebitis in the right leg and has frequent attacks of nausea and pain that confine him to his room every few weeks. Here are two more cases; they came to the hospital when I was an interne, and they stand out very clearly in my memory and always will. Both the patients were of prominent families, young and happy, with everything in this world to live for, and both were lost through bad surgery.

The first was a college boy, eighteen years old, he was brought to the hospital one Monday afternoon having been taken sick the day before. The symptoms were quite typical; nausea, vomiting, a little fever, pain, and tenderness in the right iliac fossa. After a consultation the surgeon decided to wait a day to see whether the symptoms would subside or not. He relieved the boy's pain and kept him quiet by morphine. Then Tuesday another consultation was held; the boy was no better, and, they thought, no worse; they waited another day, more morphine. On Wednesday morning the patient was distinctly worse, the pain and tenderness which had been localized had now spread across the whole lower abdomen which was as rigid as a board. Another consultation decided that they had better operate. The operation was performed that afternoon, a puddle of pus in the right iliac fossa was drained and the appendix removed; nothing more was done. Two days later the boy died. A general peritonitis was present.

The second case was one of those most virulent fulminating cases. The attack started with terrific pain one afternoon. The next morning the pain continued very severe; was little influenced by morphine, and that evening the patient was brought to the hospital with all the symptoms of a general peritonitis. The patient, a young woman, thirty years old, recently married, was operated upon at eleven o'clock that night. A median incision was made. There was free pus all through the intestines in the lower abdomen, and they were covered with lymph. The appendix, which was very long, was acutely inflamed and ruptured at the tip. The appendix was removed and the pelvis and lower abdomen flushed. There was drainage by a rubber tube and some gauze. The day after the operation there was little pain, the patient rallied nicely from the effects of the ether; the pulse was good, and the temperature came down, but there was much distention. Cathartics and enemata of all kinds and description were very thoroughly tried. Some gas came up through the mouth, but little or none passed by the rectum. The distention gradually increased, pressed up upon the diaphragm, and embarrassed the heart and lungs. She could breathe with comfort only when propped well up in bed, and I can remember very distinctly sitting behind her and holding her up often for an hour at a time to make her a little more comfortable. Her heart did its work manfully for three days, then it gave out, and she died. There were no symptoms of sepsis. The death was due to obstruction.

The first of these cases, the boy, could easily have been saved; it was delay, delay, delay, then incomplete surgery, that killed him. The second case was almost saved. If only a little more had been done at the operation, the adherent intestines freed, I think she, too, would have lived. It was so near to success; she rallied so wonderfully, but it was failure. These two cases and the others I have quoted are examples of failure following incomplete operations. The men who do them say, "The less interference the better, if you just incise and drain they will all get well"; "We never get obstruction." But they do get obstruction and they do get complications. I have described to you some of their cases that I have seen myself, and some reported by others. The two cases last quoted made such an impression upon me, a young interne just ready to start in practice, that I shall never forget them, and the pictures seen in those two bellies have more weight with me than all the papers Ochsner can write on delay and opium.

Now I have picked out four cases of my own bearing on this same subject.

Case I.—C. V., woman, thirty-five years old, married. I was called to see her on January 26, 1905, at midnight. She had been suffering from severe abdominal pain since 5 p. m. The pain had been getting rapidly worse; it was situated in the epigastrium, but no tenderness or rigidity. The temperature was 98.4°, pulse 80. No vomiting. I gave ¼ of a grain of morphine sulphate hypodermatically, and in half an hour, as she still was unrelieved. I repeated it. This quieted her, ant the next morning I found her fairly comfortable, a little general abdominal tenderness, no local tenderness, no rigidity; the pulse was 90, the

temperature 100°. I gave some calomel and soda, and the bowels moved four times during the day, and the patient felt better. The next morning she complained of very little pain, but the pulse was 110, with a temperature of 100°, and there was considerable tenderness all across the lower abdomen, a very little rigidity over the appendix, but no more tenderness there than elsewhere. I then diagnosticated acute appendicitis, and advised immediate operation. She was taken to the hospital and at 4 p. m., less than forty-eight hours from the initial symptoms, I operated. As soon as the peritonæum was opened, a thin straw colored fluid ran out. The site of the infection was not shut off from the general peritoneal cavity; the appendix was long, acutely inflamed, and ruptured at the tip. There were a few adhesions about it which were broken up, and the appendix was removed. The site was then cleaned up and irrigated locally. Gauze drainage was inserted to the pelvis and to the site of the appendix. Pulse, which was 120 before operation, was 130 when I had finished. She had a fairly comfortable night; no nausea or vomiting, but there was considerable distention the next morning, and I started giving calomel at once and used the rectal tube. The pulse continued about 130 all that day, then gradually came down until on the fourth day after the operation it was only 90, and the temperature, which had never been over 100.4°, came down to 98.8°. She was quite comfortable, had no nausea or vomiting. She passed some flatus and some fæcal matter, but never enough to make any impression on the distention, which was crowding up under the diaphragm. The next morning, that of the fifth day, the pulse jumped from 90 to 120, and continued to go up all day; by evening it was 130, and she was evidently going to die. Something had to be done. The gauze drainage had all been removed before this, and now with just a whiff of ether I explored the incision, found a kink of bowel held by an adhesion, freed it, and then punctured a kink of distended bowel, so as to get more immediate relief. Much gas and fæcal matter was discharged. The whole procedure took about ten minutes, and the patient wasn't moved from her own bed. Even this amount of anæsthesia was, however, too much for her, and she died six hours later from shock.

This case is an easy one to criticize, and I blame myself for my conduct of it more than for any other case I have ever had. In the first place, I should not have given morphine the first night. If I had not done so, the symptoms would probably have been plain the next day, and operation could have been done a day sooner. In the next place, at the operation itself my procedure was not thorough enough. I left behind a band of adhesions that later caused obstruction and death. The patient did not die from a general peritonitis but from obstruction; the inflammatory process in the peritonæum was successfully arrested, the pain and tenderness all disappeared, the pulse and temperature gradually subsided, but that band of adhesion what had been left behind caused obstruction. In the third place I should not have waited so long after the operation before re-exploring. If it had been done a day sooner she would have lived. That is a bad record, three chances to save life, and all lost by delay and incomplete work. The case of the well known surgeon who died recently was very similar to this; an incomplete operation done a day late followed by obstruction, then a second operation also late and incomplete; then death.

CASE II.—W. M., man, twenty-four years old. Strong and well developed. August 18, 1905, while handling a trunk, he was seized with a sharp pain in right iliac fossa, and when I saw him for the first time at 2 p. m. the following day, he was just moaning and tossing with pain, and the tenderness and rigidity in the right iliac fossa were marked. He vomited occasionally a dark green watery liquid. The temperature was 101°, the pulse 90. Immediate operation was advised, but he lived in the country, and it was the next morning before I could get him to the hospital. Then at 10 a. m. after a forty mile journey he was put on the table at once, forty hours after the beginning of the attack. As soon as the peritonæum was opened thin pus gushed out, not walled off from the general cavity; the appendix placed behind the cæcum, adherent to it, intensely inflamed and ruptured; a concretion being free in the abdominal cavity. Large and small bowel were adherent and covered with lymph. The cavity was cleansed, the appendix removed, the right iliac fossa flushed, the lymph wiped off the intestines and all adhesions freed. A well of gauze drained the infected area, without any sutures in the abdominal walls. This man reacted well and promptly. His bowels moved on the second day, and flatus passed freely; the drainage was very free. Pulse and temperature subsided promptly to normal. The gauze was gradually removed, and the cavity cleansed with hydrogen peroxide. For two weeks his progress was favorable in every way, then on the fourteenth day his temperature shot up to 190.4°; on the next day it was 101.4°, with a point of tenderness above the upper end of the incision, and the day after it was 102°, and he had some nausea. The pulse was not affected, but something was evidently going wrong. Without using an anæsthetic I explored the wound very carefully with my finger, finally breaking through the adhesions at the upper end of the incision and getting a gush of pus from a new focus which had not been there at the time of operation. I enlarged my incision a little and placed new gauze wicks into this second cavity. The temperature and pain subsided promptly, and he went on to recovery without further incident. In three weeks the lower part of the incision had completely closed, but there was still a sinus to the upper abscess cavity. He left the hospital and took up some light work, but it was six months before that upper sinus finally healed.

In regard to this case I would make the following comments. The gauze drains were removed a little too early and the washing with peroxide caused the spread to a new focus, but what I wish to call especial attention to is the difference in results between complete and partial work. Where the work was thorough, everything was healed in four weeks; where the work was partial, simply opening an abscess and nothing further, it took six months for it to heal. If I had given ether a second time, opened the abscess freely, flushed out, and separated adhesives I should have saved him five months with a sinus.

CASE III.—B. N., woman, thirty years old, married. On December 26th she became ill with sharp pain in the epigastrium at 7 a. m., vomited anything taken into the stomach. The pulse was 80, temperature normal. There was no local tenderness or rigidity. She was put on a starvation diet; hot stupes and calomel were given. The next morning the pain was still present, but now it was in the appendix region, tenderness was marked and it hurt her to cough. A vaginal examination showed the presence of a mass. A diagnosis of acute pyosalpynx was made and immediate operation advised, but the patient would not consent until the next morning; but then the pain had been growing steadily worse, and she went to the hospital.

Temperature was 102°, pulse 120 on admission. An immediate operation was performed. Through a medium incision a mass was found on the right side, consisting of adherent intestines and omentum, and in the centre the appendix acutely inflamed and ruptured. The right tube and ovary were also involved; they were removed and also the appendix, the adhesions were all separated, lymph was wiped from the bowels, and then the pelvis and site of the trouble were thoroughly flushed and gauze drains placed. No sutures in abdominal incision. Since the operation her course has been uneventful, and she left the hospital at the end of four weeks with everything healed.

On this case I have no comments to make, the operation was a complete one, it was thoroughly done, the effect was immediate, temperature dropping from 102° to normal by the second day, and then recovery progressed steadily and rapidly. I was satisfied with it.

Case IV.—M. F., male, twenty years old, single. He was seen for the first time on the third day of his attack, which began with nausea, vomiting, and abdominal pain. He now had severe pain in the right side with tenderness and rigidity extending all across the lower abdomen; temperature 100°, pulse 80. He was put on a water diet, but vomited occasionally. Diagnosis of appendicitis and beginning peritonitis was made, and immediate operation advised. It was the next day before we could get him to the hospital, and by that time the pain and tenderness had spread across the whole lower abdomen, and there was considerable distention. As soon as the abdomen was opened there was a gush of thin, lemon colored fluid with fætid odor. This was washed out, then the appendix was found ruptured near its base. It was freed and removed, and the iliac fossa looked well cleaned. Upon introducing a finger down into the pelvis, however, there was a second gush of pus, more than the first. The green groin was again flushed, then all the remaining adhesions were separated, lymph was wiped from the intestines, and then the whole lower abdomen was again thoroughly flushed. A well of gauze was made to the appendix and pelvis. No sutures in the incision. After the operation, the result was immediate, pain gone, temperature never went above 100° again, and the pulse was not above 80, until he got up five weeks later.

In this case I have little comment to make, except that it would have been very easy to stop after the appendix was removed, and to overlook the puddle of pus in the pelvis.

I have picked out the four worst cases of appendicitis that I have had—the first is the only case of appendicitis that I have lost so far—and these four were all of them cases that might easily have been lost. It was thorough surgery that saved them. I did not spread infection in a single one of these cases, or in any other that I know of. The case that I lost was lost not because I did too much, but because I did too little.

The lesson that I would draw from these cases of my own and from the cases of others that I have quoted, is that complete and thorough work can be done safely in the region of the appendix, even though pus is present, and that it should be done, as it will give better results than any other method.

Dr. Swift (15) says: "I have never known an appendiceal infection to be spread by the breaking up of adhesions." Dr. Mynter (16) says: "It is perfectly possible to cleanse the abdominal cavity." Dr. Price says the same, and acts upon this principle. It is time then to put away that old dread which the general surgeon especially has always had of infecting the abdominal cavity, and to do complete work in the right hand lower quadrant of the abdomen. I don't mean that you should wilfully scatter pus about among the intestines. No, indeed! Take every possible precaution against it, but don't leave pathology behind you still in the abdomen after you have left.

In a pus case then I would say that, after incising the abdominal wall, you should place carefully gauze sponges so as to separate as effectually as possible the infected areas from the uninfected, then evacuate your pus first with mops, then by a local irrigation; now, free the appendix and remove it, then separate the adherent coils of large and small intestine, evacuate all secondary pus pockets, wipe the lymph from the intestines, and make them as clean as you can; remove the protective gauze pads and put in fresh ones for drainage. Take the greatest possible care in placing drains, build up as it were a wall of gauze which will hold the intestines away from the infected areas, and then use central ropes of gauze to drain the infected spots; leave the abdominal incision wide open, no sutures.

If, after separating your adhesions, you find that the inflammation has already spread beyond the boundaries of the right iliac fossa, a second irrigation should be performed, and, whenever you irrigate, do it in the right way. I have never seen a surgeon in this city give what I should call a satisfactory irrigation. Use a big tube at least three quarters of an inch in diameter; hold the funnel high so that there is plenty of force, turn the patient on the right side, and keep two fingers of your left hand spread wide apart in the incision, so that the exit is very free, and use at least two or three gallons of water. An irrigation given in this way does not spread pus, it cleanses. In these cases of general peritonitis use the Fowler position, if you like, and Murphy's method of continuous saline infusion by rectum. Good results are being reported from their use. You must work quickly, but at the same time work well and thoroughly.

A procedure of this kind is complete, rectifying as far as is possible the pathological conditions present, and, what is more important, you will be able in this way to save more patients; their cure will be complete, and their convalescence short. Simply incising an appendiceal abscess is like puncturing the vaginal vault, doing *the wriggle operation,* as Dr. Price calls it; you cut a hole and wriggle your finger and leave all the pathology behind.

If you will do this complete appendicular surgery, Ochsner's suggestions will have no attractions for you. Why should you wait for adhesions to form, just so as to break them up again? And while you are waiting, the intestinal wall is becoming weaker, disintegrating, the patient is becoming septic, the lymph channels are becoming loaded with pus, and, before you know it, you may have one of those cases that I described early in this paper of pylephlebitis, subprenic abscess, or septic pneumonia. On the other hand, let me beg you to try this complete method I have outlined. Don't be afraid. Try it yourselves, and see if you don't get better results than you ever did before. I don't want to ever have another case like the first one of my own that I

described to you, three chances to save her, and all lost by delay or incomplete work. I intend, henceforth, to do the most complete work that I know how to do, and I enter my most earnest plea to you to do the same, and do it early.

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18 GROVE PLACE.

Therapeutical Notes.

Painless Injection of Soluble Mercurial Salts.—The *Deutsche medizinische Wochenschrift* gives the following formula which after several trials with a number of prescriptions has proved the best:

I. Hydrargyri cyanati, ... 1.0 gramme;
Dissolve under low heat in distilled water containing acidum boricum of 1 per cent., ...30.0 grammes.

The preparation should cool off.

II. Acoini, ... 0.4 gramme;
Dissolve in cold distilled water containing acidum boricum of 1 per cent., ...70.0 grammes.

Both to be mixed in dark vessel, giving a clear, permanent solution, and 1 to 2 c.c. used for an injection.

Through the *Apotheker Zeitung.*

The Caustic Action of Quinine Hydrochloride on Granulating Tissue.—After hypodermic injections of quinine sloughing sometimes occurs showing the caustic action of this agent. This has been utilized in surgery recently by Moro in the treatment of granulations of tuberculous origin. Moro (*Il Policlinico, Le Bulletin médical,* October 3, 1906) observes that quinine hydrochloride is an excellent means of causing the destruction of all sorts of granulations, whether pathological or simply exuberant. It has the advantage over other caustics of not causing pain, nor any local irritation, while at the same time it causes a deep eschar. There is little if any absorption, because symptoms of cinchonism were never observed, even though several grammes of this salt were applied as a dressing.

Mutton Suet as an Excipient for Pills for the Administration of Potassium Iodide.—It has been found by Jaworski (*Przeglad Lekarski, Le Bulletin médical,* October 3, 1906) that mutton fat (fusible at 45° C.) is a useful excipient for remedies which irritate the stomach or which we desire to act on the intestine. He has observed that pills prepared in this way float in the liquid contents of the stomach without melting or dissolving; and pass unchanged into the intestine when the medicament is absorbed. When potassium iodide causes irritation of the stomach, it can be given in this form. Each pill should contain about a grain and a half (0.10 gramme) of mutton suet, with the proper quantity of the medicament. When the quantity of the active principle is very small it can be mixed with a little calcined magnesia or licorice powder before adding the mutton fat.

Effects of X Rays Upon Ague.—Although a case has been reported in which a quotidian intermittent was apparently cured by x rays, Demarchi (*Il Policlinico, Le Bulletin médical,* June 13, 1906), after applying this method in eight cases of malarial fever, was unsuccessful, and obtained only a negative result. He demonstrated to his own satisfaction that exposure of the splenic region to x rays did not in any degree modify the course of the malarial infection, nor of the cycle of evolution of the pathogenic agent. However, in cases of chronic enlargement of the spleen, radiotherapy brought about a manifest diminution in this organ, but only after the spontaneous cessation of the fever, or as the result of the administration of quinine. The possibility of a preventive influence of the x rays against recrudescence of the fever is admitted by the author.

A Fatality Following Subcutaneous Calomel Injections.—The practice so generally followed in Paris of treating syphilis by depositing insoluble or comparatively insoluble salts of mercury under the skin, especially of the buttocks, is occasionally followed by abscess or other unfavorable result. Antonelli, in a discussion before the Société de médecine de Paris, referred to a case in which a curious accident occurred with an unfortunate result. A patient who had received one of these injections for a grave ocular manifestation of syphilis a few days later fell down stairs, striking with all his weight upon the part selected for the injections. The following day he had a stomatitis, which became violent, and was attended with œdema of the glottis, which led to a fatal termination.—*Le Progrès médical,* June 16, 1906.

Treatment of Venereal Buboes by X Rays.—Merxheimer and Hübner have obtained positive results by radiation in the treatment of enlarged lymphatic glands, both venereal and strumous. The application of the x rays should be energetic, and with a hard tube; the exposures of half an hour are repeated twice in a week. The testicles are to be protected with a plate of lead, and the bubo also is covered with a sheet of tin in order to protect the skin from injury from the soft rays, which might escape from the tube. Two exposures are usually sufficient to cause the disappearance of glands as large as a hen's egg. The treatment is not effective after suppuration has occurred, but after evacuation of the collection, the application of the x rays can take the place of the curette, and the wound generally granulates very quickly.—*Medizinische Klinik,* through *Le Bulletin médical,* September 29, 1906.

Abortive Treatment of Boils.—A method of checking the development of furuncles has been described by Vikentiev (*Vratchebnaya Gazetta,*

through *Le Bulletin médical*, October 3, 1906). If the treatment is applied early, the boil will proceed to dry up after one intervention. The method is described as follows: Apply a solution of soft soap in alcohol, which is then to be washed off with alcohol, and a small piece of absorbent cotton wet with the same solution is placed on the surface until the liquid has evaporated. The region is again to be rubbed with the tincture of soft soap (made with potash), and the latter is allowed to dry on the surface. In the great majority of cases this is all that is required, and the furuncle aborts without further treatment. The method is also useful with furuncles already advanced in their development, as it reduces to the minimum the extent of the purulent collection.

On the Administration of Arsenic in Chorea.—In a review of the different methods of giving arsenic in chorea, Parrot (*Gazette des hôpitaux* and *Journal de médecine*, September 30, 1906) describes and approves Weill's method of administering it in butter, which is spread upon bread or biscuit, and is readily taken by children. It is prepared as follows: First, a certain quantity of arsenic, which it is thought will be sufficient for a course of treatment, is weighed out and intimately mixed with thirty times the quantity of sodium chloride. This mixture is administered in gradually increasing doses as follows: First day, 0.105 grammes, equivalent to 0.005 gramme of arsenious acid; second day, 0.210 grammes, equivalent to 0.010 gramme. This addition of an equivalent of five milligrammes of arsenious acid is added each day until on the sixth day 0.630 gramme of the mixture is given, corresponding with 0.030 of arsenious acid. When this point is reached, the dose is reduced progressively in the same proportion. Each dose of the mixture is triturated carefully with ten grammes of fresh butter each day as it is used. The excess of salt is generally liked by the children when spread upon tartines. The advantages of this method are that the remedy is perfectly tolerated, and is taken at the table as food, and the diet is not restricted. The patient generally gains in weight during the course of treatment, and is allowed to pass his time in the open air with other children without being specially watched. No accidents have been observed from this method, except some slight skin eruptions. Out of forty-eight cases treated in only three was there partial success. In one case, there was a trace of albumin in the urine. Improvement is generally observed towards the tenth day of treatment, and the cure is complete by the twenty-fourth day. The age of the patients for whom dosage, as described, was directed is not mentioned in this article.

Acute Osteomyelitis of Adolescents.—In a clinical lecture, E. Jouon (*Gazette médicale de Nantes*, October 6, 1906) calls attention to the necessity of early diagnosis and prompt surgical treatment in the grave forms of acute osteomyelitis in growing children. He reports several cases in which the disease affected simultaneously the humerus or tibia on both sides of the body, or began in the leg and subsequently attacked the arm or the large joints. The *Staphylococcus aureus* was found in all the cases in the medullary canal of the bone or in the periosteal abscess. In the diagnosis the intense and early pain in the bone affected is very prominent. It is excruciating in character, and is met with usually at the level of the epiphyseal cartilages. There is also a marked rise in the temperature, general systemic disturbance, delirium, or stupor, with drawn features expressive of pain. Locally, symptoms of inflammation or suppuration are found, with deep fluctuation. This may be absent when the abscess is in the medullary canal. The acute onset, the gravity of the general symptoms with the local signs of bone inflammation, should be sufficient to prevent errors in diagnosis. No time should be lost with attempts to treat the lesion medically. As soon as the diagnosis is made a free incision through the soft parts to the bone should be made. If the periosteal surface of the bone is not affected, then the canal should be explored with the application of the trephine. An opening should be made sufficiently large to remove the medulla which has been transformed into a spongy purulent mass. Jouon claims that this operation is just as urgent as one for strangulated hernia, and when performed early is usually successful.

Tetanus from Middle Ear Lesion, with Recovery.—In a contribution to the *Revue médicale de l'Est* (September 15, 1906), Baros reports two cases of tetanus in persons who worked in stables or on a farm. In the first case the port of infection apparently was a vaccination upon the arm. The symptoms had appeared on the tenth day after vaccination, and the patient died within twelve hours from the first outbreak of the tetanic symptoms. In the second case the symptoms were slower in developing and less severe. The only lesion in this case was a suppurating middle ear, which by exclusion was thought to be the site of infection. As the patient, while working about the farm, frequently experienced some irritation in the ear, he would introduce his little finger to relieve it, and the finger being soiled by the manure naturally infected the auditory canal. After a few days of pain and stiffness in the neck, the jaws were set, and attacks of opisthotonos frequently recurred. Dr. Baros administered ten c.c. of antitetanic serum, once daily; and also gave twelve grammes each of potassium bromide and chloral hydrate by the rectum through the day. When the convulsions were severe, an injection of morphine also was given, which usually afforded relief, and sleep for three or four hours followed. The serum was used for eight days, and the bromide and chloral enemata for eighteen days. The symptoms gradually yielded in severity, and towards the end of the third week the patient's appetite came back and his general health improved, although some stiffness in the back of the neck continued for several days longer. He had also much stiffness in the other muscles of the body and limbs, which caused considerable trouble in walking. However, by the fifth week he had entirely recovered. This mode of infection by the ear has been also observed by Jacques, who reported a case to the *Société de médecine de Nancy* last March.

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MILK INSPECTION.

Eternal vigilance is the price of a reasonable approach to a satisfactory milk supply for cities. The need of incessant and exhaustive inspection is emphasized in two publications that have recently come to our notice. One of them is the report of the milk inspector of the Boston Board of Health, Professor James O. Jordan, Ph. G., of the Massachusetts College of Pharmacy (*City Document No. 17*). During the year ending January 31, 1906, Professor Jordan and his assistants examined 18,582 specimens of milk. It is noteworthy that only 245 of them were "brought in by citizens," for the fact exemplifies the apathy shown generally in our communities regarding the quality of even such a vitally important article of food as milk, the one substance on which hangs the fate of myriads of children. But it is not this apathy alone that favors deterioration of the milk; in one respect fastidiousness contributes to the same regrettable result. "The public," says Professor Jordan, "desires and insists upon having a layer of cream at the top of the milk when it is delivered." "To cater to this demand," he adds, "the milk is usually placed in bottles the day before delivery and held by the milkmen until the following morning. Thus the milk is left at houses from sixteen to twenty-four hours older than necessary." Unfortunately, this unwise requirement on the part of the public is more generally complied with in summer, when it is most harmful, than in winter, when, to avoid the inclement weather of the early morning, many of the milkmen deliver their supply on the day of its receipt.

It is not alone the dealer that is at fault in the matter of the supply of improper milk; the producer is often to blame. The Boston Board of Health requires that "no milk shall be sold, offered for sale, or distributed in the city of Boston which was drawn from cows within fifteen days before or five days after parturition." The milk producers of Massachusetts can hardly plead ignorance of the necessity of this and other requirements, for, says Professor Jordan, the Massachusetts Cattle Owners' Association has voted that "the milk of a healthy cow should not be used for twenty days before calving nor for three to five days afterward," and that "the milk of a diseased cow should not be used upon the farm or sent to market."

The other publication which we have in mind is an excellent editorial article in the November number of the *Canadian Journal of Medicine and Surgery*, dealing with the Dominion Inland Revenue Department's *Bulletin No. 121*, on Whole Milk, Skim Milk, Buttermilk, and Cream, for 1906. It seems that skim milk has practically disappeared from the Canadian market, though buttermilk is sold. It is to the widely varying proportion of butter fat in samples of milk from different parts of Canada that our contemporary's article is chiefly devoted. It appears that, of thirty-four samples of whole milk collected in Toronto, only five contained the standard average percentage, 3.75, of butter fat. "The skimming and watering of milk must, therefore," says the writer, "have been freely practised by producers or retailers who supplied the Toronto market, or by both of them;" and he indicates that the conditions are about the same in Montreal. He sees hope of improvement in the advance of the retail price of milk.

PULMONARY ŒDEMA.

Œdema of the lungs is considered by many medical writers to be exclusively a pathological condition of no interest to the clinician. The majority of textbooks make no mention of it as a clinical entity, although Osler gives it a paragraph in his sixth edition. Coplin (*Proceedings of the Pathological Society of Philadelphia*, ix, 4) has recently analyzed 2,030 autopsies. He found among them only 405 cases in which pulmonary œdema was of sufficient intensity to attract attention. Of these 405 cases of pulmonary œdema, thirty-two were unilateral, eighteen affecting the right and fourteen the left lung. Because of the relative infrequency of œdema of the lungs, and because it is frequently unilateral in occurrence, Coplin opposes the statement made by Cohnheim

that a man gets pulmonary œdema because he is on the point of dying.

Œdema of the lungs may be local or diffuse. The local œdema accompanies all inflammatory processes, and may be due to the accompanying disturbance of the circulation, to the action of toxic substances produced in the lesion, or to both. Terminal œdema accompanying a prolonged agonal period is of the nature of a local œdema and possesses little significance independent of the disease which it complicates. Diffuse, or general, pulmonary œdema, on the other hand, is a serious and an interesting condition. It may constitute a part of a progressing dropsy, when it is a manifestation of the general œdema, or it may be an acute, fulminating affection, unaccompanied by other manifestations of dropsy, and is often rapidly fatal. It is characterized by a sense of oppression, dyspnœa, which amounts to "air hunger," cyanosis, cold sweats, pain in the chest, and the expectoration of a pinkish, salmon colored, or red material. This fluid amounted to 1,260 cubic centimetres (more than thirty-six fluid ounces) in eight hours in one reported case. It contains a variable number of red blood corpuscles, some leucocytes, and a moderate amount of epithelium, and chemically it has been shown to contain as high as 7.5 per cent. of albuminous bodies. On auscultation, numerous crepitant râles are heard all over the chest, which are rapidly replaced by loud bronchial bubbling. The percussion note is usually excessively resonant—the paradoxical percussion sound of Huchard. The condition may be mistaken for pulmonary embolism, acute asthma, the chronic pulmonary œdema of cardiac and renal disease, and pleurisy. The blood pressure in the lesser circulation is always high, and there is a disproportionate weakness of the left ventricle.

The most striking feature of the gross morbid anatomy of the condition is the reddish, frothy fluid that escapes from the cut surface of the lung. The lung sometimes appears gelatinous in consistence. Microscopically, the picture varies. In some cases the capillaries are distended; in others they are empty. In all instances the lung tissue is extensively infiltrated with an albuminous fluid which appears as a granular deposit in the distended air vesicles and in the interstices of the connective tissue framework of the organ. This fluid is too rich in cells to be called a transudate and too poor in leucocytes to be called an exudate. The leucocytes are sometimes of the polymorphonuclear variety, and in other cases the large uninuclear cells predominate. Fibrin is never present in more than an insignificant amount. The peribronchial lymph nodes are frequently intensely œdematous.

Bleeding is the surest, safest, and most prompt remedy in the treatment of acute œdema of the lungs. It removes toxic substances, lowers venous tension and the pressure in the right side of the heart, and therefore relieves the cardiac embarrassment, and it antagonizes any tendency to pulmonary congestion and exerts a sorbefacient influence on the exudate in the interstitial tissue. Cardiac stimulants are indicated after phlebotomy.

NEGLECT OF THE FUNDAMENTAL BRANCHES IN MEDICAL STUDY.

A report of the Pennsylvania State Board of Medical Examiners, presented at the recent annual meeting of the Medical Society of the State of Pennsylvania, contained the following statement: "In the fundamental subjects of anatomy, physiology, chemistry, and pathology, about fifty per cent. of the candidates (415) failed, and if it were not for the high marks attained in the practical subjects of medicine, obstetrics, surgery, hygiene, and diagnosis, a very large number now passed would have failed. So prominent is this annual result that one of two conclusions must necessarily be reached—either the teachers in these fundamental subjects failed utterly to teach the fundamental principles as well as the applied features thereof, because the questions submitted are especially of this character, or the students failed to comprehend these essential sciences. The matter is so serious, as is self evident, and has prevailed without any practical variation ever since the Practice Act has been in force, that it demands serious investigation."

We believe that the main reason why the State board candidates do so poorly in their examinations in the fundamental branches is traceable to the attitude of the student toward these branches. The medical student is preeminently utilitarian in his philosophy. He goes to the medical school to learn how to cure disease, and in his ignorance he is unable to see the connection between a chemical laboratory and the bedside of a sick man. In this attitude he is encouraged by many practitioners of medicine who have had experience enough to be able to set him right if they would. As a result of the lack of experience on the part of the student and the cynicism of the practitioner, we find the former learning just enough of these four subjects to get passing marks from his professors. And let us say that a passing mark of sixty per cent. in a medical subject is ridiculously low. We hear the freshman and

sophomore philosophers saying that anatomy has to be learned nine times before it is remembered, that chemistry is a waste of time, that physiology is all theory, and that pathology is of no practical value. So far as we are able to see, the way to correct these faults is to raise the percentage required for passing, and to induce the practitioners throughout the country to impress on their students who are in the medical schools the necessity—not the expediency—of knowing these four subjects.

A criticism that may be made regarding the teachers of these subjects is one that they themselves are not wholly to blame for. They are, as a rule, hardworking, underpaid men. Of course it is a tiresome job to tell a great number of men every year that the greater tuberosity of the humerus is not the great trochanter of the femur, and that you always get a precipitate of silver chloride when you mix solutions of silver nitrate and sodium chloride. But the greed of trustees for notoriety has compelled professors to neglect these positive facts and to spend too much time in elaborating new things that are not yet generally accepted by their profession. We have been told of an instance in which a professor of pathology spent more time in describing the inoculation of dead cultures of the *Bacillus typhosus* to prevent typhoid fever than in the exposition of the histological characteristics of sarcoma and carcinoma. We are hearty advocates of research, but we do believe that research and the instruction of undergraduates should be kept apart. However, the fault of which the State Board of Medical Examiners of Pennsylvania complains is a fault primarily of the student's attitude toward the foundation stones of his professional knowledge, and not a fault of his teachers.

THE CHURCH AND MEDICAL SCIENCE.

In an article on The Supposed Warfare Between Medical Science and Theology, published in the *Messenger* for September, Dr. James J. Walsh takes up the contentions of former President Andrew White, of Cornell University, and Dr. Cruikshank, both of whom have written on this topic, and adduces much documentary evidence in opposition to the views of those gentlemen. The points touched upon are, briefly, two —whether the Church did or did not offer deliberate and effective opposition to the study of anatomy by dissection in the time of Vesalius, and whether a certain papal bull issued by John XXII did or did not, in the words of President White, "deal a terrible blow at the beginning of chemical science."

Dr. Walsh uses in the main the same sources of authority as his opponents. He gives in full translation the decretal of Pope Boniface VIII, which has been supposed to have occasioned so much obstrucion to the study of anatomy, and seeks to dispose of any idea that such a result was explicitly sought by the wording of this document. To his opponents' assertion that it was at least misinterpreted as forbidding dissections for scientific purposes, as well as the separation of the bones from the flesh for purposes of burying the former at a distance from the place of death, he replies by citing many instances where dissections were carried on not only without opposition, but actually with approval from the ecclesiastical authorities. Corradi, in his sketch of anatomy in Italy in the Middle Ages, expressly states that this decretal did not in any way hamper the study of anatomy, and Haeser, quoting from this authority, notes that dissections were carried on at the universities of that day, although these were invariably presided over by representatives of the Church. As Roth, the biographer of Vesalius upon whom President White chiefly relies, acknowledges his indebtedness to Corradi, we find the controversialists agreeing at least upon an authority. Roth himself is also quoted by Dr. Walsh to the effect that dissections were made in pre-Vesalian times, not only in teaching institutions, but also in Strasbourg and Venice for the instruction of the practitioners of those towns. Two years after the decretal an autopsy was held at Bologna in a medicolegal case, and the readiness with which this method of determining the cause of death was resorted to might reasonably be taken as an indication that it was not a novelty.

Several allusions to dissections in the years that follow this period are interpreted by President White as indicating that such an occurrence was unusual and therefore mentioned. Dr. Walsh, however, contends that in every case there is some feature to distinguish it from ordinary dissections, and draws the conclusion that dissections in general were too common to mention, and only those that were notable in some way achieved such prominence. President White has intimated that Vesalius was allowed to dissect at Padua because this was Venetian territory, and Venice was constantly in opposition to the pope, but Dr. Walsh thinks there is abundant testimony that dissections were not unusual there even before the city came under Venetian control. The second point, that in regard to chemistry, is also disposed of by quoting the text of the papal bull, which forbids merely "alchemies," the pretended making of gold and silver.

Apart from a natural desire to know the truth

as it is, there is still further reason for accepting, if one can do so, such explanations as Dr. Walsh offers. It is pleasant to think that there has been less strife between these two great spheres of human thought than had been commonly supposed, since every step in the right direction, however slight, brings nearer the realization of that unity of all knowledge of which the philosopher dreams.

THE FŒTAL EXCRETIONS.

A new turn taken by speculation concerning the waste products of the fœtus is set forth by Sanitätsrat Dr. J. Starzewski in the *Wiener medizinische Presse* for August 30th and September 6th and 13th. He attributes notable pathogenic power to those products, and he imputes to their malign action nausea gravidarum, eclampsia, and practically all the minor disturbances incident to pregnancy. He conceives that the mother's resisting power depends on antibodies which her system elaborates for the express purpose of counteracting infection, as he terms it, by excretory material derived from the fœtus, which has no other means of egress than the maternal emunctories. If she is not equal to the formation of a sufficiency of these antibodies, he virtually says, she is likely to succumb to the poisons.

While it must be admitted, of course, that the fœtus forms excrementitious products which can be got rid of only through the maternal organism, it seems to us that Dr. Starzewski has vastly overrated the pathogenic action of which they may be capable. It is difficult to imagine that they can prove seriously poisonous to the mother unless they are endowed with some peculiar toxic quality or are formed in enormous amounts. We know of nothing to indicate that they are at all more noxious than the waste products of postnatal life. As to their quantity, it must be remembered that the fœtus leads hardly more than a vegetative existence. Its heart, to be sure, works industriously, but its respiratory apparatus (except in the placental element) and its alimentary tract have nothing to do. Its central nervous system exerts but a minimum of energy, and in all probability its other internal organs, barring the kidneys, are virtually in a dormant state. Its muscular movements, grievous as they sometimes are to the mother, can hardly be looked upon as energetic enough to give rise to any great amount of waste material. The fœtus grows and develops at an enormous rate; it must constantly assimilate a great deal of nutriment, but it almost certainly does not give out waste products in anything like the proportion that is observed in the mature organism.

Such are some of the theoretical considerations which incline us to think that Dr. Starzewski's hypothesis is fanciful. From the practical point of view, let us call to mind the fact that vomiting is one of the troubles that come on early in pregnancy and usually cease long before parturition takes place; that is to say, they make their appearance while yet the ovum is very small, and therefore incapable of giving off more than a negligible amount of waste material, and subside as the ovum grows. Moreover, nobody would expect a woman's excretory organs to be seriously embarrassed by her taking on ten or twelve pounds of flesh in the course of nine months, and there is nothing to show that the uterine contents exceed other living animal matter in metabolism.

THE PERIL OF THE POLLS.

The Dead Rabbits and the Plug Uglies are now but memories of a time long gone by, and violence and intimidation at the polls no longer figure in elections, at least in our larger and older communities. But the duty of the ballot is not yet to be performed in all instances without some danger of physical injury. It comes now in the form of prolonged exposure to inclement weather without the protection afforded by exercise. In New York, certainly in some of its voting districts, this particular menace to the health of the old and infirm seems to be worse than at any other period within our memory. In the election that was held on Tuesday of this week the writer was compelled to maintain his place in a line of men for three quarters of an hour before he reached the poor shelter of an open undertaker's shop in which the balloting was carried on—an experience that never was his before in all the forty-five years of his life as a voter in New York. The day was fine, but it was chilly; if in addition to the cold there had been a windy and drizzling rain, the exposure must have been much more trying still. It is easy to find fault with citizens for omitting to do their duty at the polls, but we submit that they cannot be greatly blamed for the omission so long as adequate means are not taken to shield them from incurring in the discharge of that duty such hardships as must in many instances prove provocative of illness or at least impairment of strength. Let spacious and comfortable polling places be provided.

Obituary.

DAVID B. BIRNEY, M. D.,

OF PHILADELPHIA.

Dr. Birney died on Friday, November 2nd, at his home in Philadelphia. He was thrown from his carriage on the afternoon of October 13th, rupturing one

of the arteries in his left leg, from the effects of which he finally died. Dr. Birney was graduated from the Medical Department of the University of Pennsylvania in 1885. For several years he was one of the surgical anæsthetizers at the University Hospital. He was a very popular quiz master in surgery, doing extramural teaching in connection with the university. At the time of his death he was medical director of the United Gas Improvement Company.

CADWALADER BIDDLE, ESQ.,

OF PHILADELPHIA.

Cadwalader Biddle, secretary of the Pennsylvania State Board of Charities, died at his home, in Philadelphia, on Monday, October 29th. Mr. Biddle was born on October 28, 1837. He was educated at the University of Pennsylvania, receiving the degree of Bachelor of Arts in 1856 and the degree of Bachelor of Laws in 1859. He was one of the trustees of the University of Pennsylvania from 1862 to 1882. In 1884 he was appointed secretary to the State Board of Charities, which position he held until his death. He was a member of the American Philosophical Society and other organizations of a scientific and social character.

News Items.

NEW YORK CITY AND STATE.

The American Chemical Society.—The thirty-fifth general meeting of this society will be held at New York City from December 27, 1906, to January 2, 1907.

The Rochester Academy of Medicine.—The programme for a meeting of the *Section in General Medicine*, of this academy, held on Wedneday, November 7th, included a paper by Dr. C. D. Young entitled Recent Progress in Medical Education.

Changes of Address.—Dr. Robert Kunitzer, to 7 West One Hundred and Twenty-first Street, New York; Dr. Alfred W. Pollak, to 251 West One Hundred and Twenty-second Street, New York; Dr. Frederick Guttman, to 236 West One Hundred and Thirty-fifth Street, New York.

The Glens Falls (N. Y.) Medical and Surgical Society.—The annual meeting of this society was held on the evening of Thursday, November 1st. The programme included a paper on Specific Urethritis, by Dr. Virgil D. Selleck. The paper was discussed by Dr. Griffin and Dr. Haviland.

The Queens-Nassau Medical Society.—The semiannual meeting of this society will be held at Jamaica, L. I., on Tuesday, November 27th. The officers elect, who will assume office on January 5, 1907, are: Dr. Irving F. Barnes, of Oyster Bay, president; Dr. John H. Barry, of Long Island City, vice-president.

Personal.—Dr. Carlos F. MacDonald's resignation of the chair of Mental Diseases and Medical Jurisprudence in the University and Bellevue Hospital Medical College has been accepted, and the Advisory Board has recommended to the council that Dr. MacDonald be made emeritus professor of these subjects.

The Harvey Society Lectures.—The third lecture in the Harvey Society course will be delivered at the New York Academy of Medicine on Saturday evening, November 17th, by Professor W. T. Porter, of Boston. Subject, Vasomotor Reflexes. These lectures are open to the public and all persons interested are cordially invited to attend.

The Elmira Academy of Medicine.—The programme for a meeting of this academy, held on Wednesday evening, November 7th, included the following titles: Dechloridation Treatment in Diseases of the Heart, by Dr. F. C. Annabel; Report of a Case of Acromegaly, by Dr. John C. Fisher; The Uterine Curette, by Dr. A. M. Loope, of Wellsburg; Some Remarks on Uranalysis, by Dr. G. V. R. Merrill.

The Buffalo Academy of Medicine.—A meeting of this academy will be held on Tuesday, November 13th, under the auspices of the *Section in Medicine*. A paper entitled A Consideration of the Pelvic Articulations, will be presented by Dr. Joel E. Goldthwait, of Boston. At a meeting of the *Section in Pathology*, to be held on Tuesday, November 20th, there will be an exhibition and demonstration of pathological specimens from the University of Pennsylvania.

New York Orthopaedic Dispensary and Hospital, 126 East Fifty-ninth Street.—The trustees of the New York Orthopædic Dispensary and Hospital announce that the surgeon-in-chief, Dr. Russell A. Hibbs, will give a course of clinical lectures on Orthopædic Surgery at the institution, on Tuesday and Friday afternoons, at four o'clock, from November 20th to December 21st (both inclusive). The course will be free to the medical profession and students.

The New York City Tuberculosis Hospital.—A site consisting of 1,300 acres in Otisville, Orange county, having an elevation of from 1,300 to 1,400 feet, situated about seventy-seven miles from the city on the Erie Railroad, has been selected by the municipal authorities upon which to build the proposed hospital, which is to be used for the reception and treatment of incipient cases and convalescents from other hospitals. Conditions are favorable for the treatment of 200 patients. At the beginning $225,000, the sum appropriated, will be spent for buildings, dormitories, roadways, employees, paths, and other improvements.

The Society of Dermatology and Genitourinary Surgery, of New York City.—The meetings of this society are held on the second Friday of each month at the offices of members. The meeting for November was held at the office of Dr. Charles M. Williams, 616 Madison Avenue, on Friday, November 9th. The next meeting will be held on Friday, December 14th, at the office of Dr. Thomas J. Carney, 204 West Fifty-fifth Street. The officers of the society are: President, Dr. Frederic Bierhoff; vice-president, Dr. William B. Trimble; secretary, Dr. Henry Graham MacAdam; treasurer, Dr. H. H. Whitehouse.

The Hospital Saturday and Sunday Association of Brooklyn.—At the first autumn meeting of this association, held on Tuesday evening, October 16th, at 62 Joralemon Street, Brooklyn, the report of the preceding year's work was fully presented, from which it appeared that this was the most successful year in its history. The amount raised for hospitals was $8,609.56. This sum was distributed among sixteen hospitals in the Borough of Brooklyn. There is also a fund of $1,185.47 for assistance to the poor in purchasing proper surgical appliances, on the recommendation of any church contributing to the association collections. There has been but one call for this purpose during the past year. Plans for the coming year's work were considered.

Civil Service Examinations for the State and County Service.—The State Civil Service Commission will hold examinations November 17, 1906, for the following positions: Physician, sixth grade, State hospitals and institutions, $900 and maintenance; superintendent of nurses, Erie County Hospital, $1,200 and maintenance; trained nurse State institutions, $420 and maintenance. The commission has been unable to secure a sufficient number of eligibles to fill the vacancies in the service in the positions of physician, trained nurse, and woman officer, and qualified applicants for these positions have an excellent chance for appointment. The last day for filing applications for these positions is November 12th. Full information and application forms for any of these examinations may be obtained by addressing Charles S. Fowler, chief examiner of the commission, at Albany.

Society Meetings for the Coming Week:

MONDAY, *November 12th.*—New York Academy of Sciences (Section in Chemistry and Technology); New York Medicohistorical Society (private); New York Ophthalmological Society (private); Medical Association of the Greater City of New York; Society of Medical Jurisprudence, New York; Corning, N. Y., Medical Association; Waterbury, Conn., Medical Association; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private).

TUESDAY, *November 13th.*—New York Medical Union (private); New York Obstetrical Society (private); Buffalo Academy of Medicine (Section in Medicine); Kings County, N. Y., Medical Association; Rome, N. Y., Medical Society; Medical Society of the County of Rensselaer, N. Y.; Newark, N. J., Medical Association (private); Trenton, N. J., Medical Association; Northwestern Medical Society of Philadelphia; Practitioners' Club, Richmond, Ky.; Richmond, Va., Acad-

emy of Medicine and Surgery; Practitioners' Club of Jersey City, N. J.; Blackwell Medical Society, Detroit, Mich.

WEDNESDAY, *November 14th.*—New York Pathological Society; New York Surgical Society (annual); American Microscopical Society of the City of New York; Society of the Alumni of the City (Charity) Hospital, New York; Society for Medical Progress, New York; Lenox Medical and Surgical Society, New York (private); Medical Society of the Borough of the Bronx, New York; Brooklyn Medical and Pharmaceutical Association; Medical Society of the County of Allegheny, N. Y.; Pittsfield, Mass., Medical Association (private); Philadelphia County Medical Society.

THURSDAY, *November 15th.*—New York Academy of Medicine; Brooklyn Surgical Society; New Bedford, Mass., Society for Medical Improvement (private); Medical Society of the City Hospital Alumni, St. Louis; Atlanta Society of Medicine; Newark, N. J., Medical and Surgical Society (annual); Æsculapian Club of Buffalo.

FRIDAY, *November 16th.*—New York Academy of Medicine (Section in Orthopædic Surgery); Manhattan Medical and Surgical Society, New York (private); New York East Side Physicians' Association; New York Microscopical Society; Brooklyn Medical Society; Clinical Society of the New York Post Graduate Medical School and Hospital; Baltimore Clinical Society; Chicago Gynæcological Society.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending November 3, 1906:

	November 3.		October 27.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	99	24	127	27
Smallpox	..	..	..	..
Varicella	48	..	42	..
Measles	64	3	51	..
Scarlet fever	73	5	90	3
Whooping cough	41	5	38	6
Diphtheria	239	25	238	25
Tuberculosis pulmonalis	387	176	336	159
Cerebrospinal meningitis	6	11	11	5
Totals	957	249	933	225

PHILADELPHIA AND THE MIDDLE STATES.

Personal.—Dr. Curtis C. Eves, of George School, Pa., is registered at the Philadelphia Polyclinic and College for Graduates in Medicine.

Mr. James Gill, superintendent of the Samaritan Hospital, Philadelphia, has been elected superintendent of the Germantown Hospital, Philadelphia.

The College of Physicians.—At the regular monthly meeting of the College of Physicians, held on Wednesday evening, November 7th, Dr. Charles P. Noble read a paper entitled Hospital Management: Certain Questions of Interest to the Medical Profession, Hospital Superintendents, Superintendents of Training Schools, Head Nurses, and Directors of Hospitals. Dr. G. G. Davis read a paper on The Making of a Museum of Applied Anatomy, and Dr. Thomas G. Ashton, Dr. George W. Norris, and Dr. R. S. Lavenson read a paper on Adams-Stokes Disease.

Sunday Closing of Drug Stores.—At a meeting held at the Philadelphia College of Pharmacy on October 16th, the local branch of the American Pharmaceutical Association discussed the closing of drug stores on Sunday, or at least during a part of the day. The subject was introduced in a paper by Mr. Joseph W. England. In some parts of the city druggists close their stores for a part of every Sunday, but it is a personal act on the part of each druggist, and no concerted effort has ever before been made, so far as we know, to have all the druggists of Philadelphia join in the movement.

The Annual Meeting of the Hospital Association of Philadelphia was held on the afternoon of Wednesday, October 24th, in Westminster Hall. Fourteen hospitals were represented. On motion of Dr. Lawrence F. Flick, of the Phipps Institute for the Study, Prevention, and Treatment of Tuberculosis, it was voted to appoint a committee of three members to confer with a similar committee appointed by the Society for the Prevention of Social Diseases to consider subjects affecting the welfare of the public. The following officers were elected: President, Mr. John E. Brown, Episcopal Hospital; vice-president, Mr. Ellison T. Morris, Germantown Hospital; secretary and treasurer, Mr. Robert L. Hastings, University Hospital. The American Hospital for Diseases of the Stomach was admitted to membership.

Scientific Society Meetings in Philadelphia for the Week Ending November 17, 1906.—*Monday, November 12th,* Section in General Medicine, College of Physicians; Wills Hospital Ophthalmic Society. *Tuesday, November 13th,* Kensington Branch of the Philadelphia County Medical Society; Philadelphia Pædiatric Society; Botanical Section, Academy of Natural Sciences. *Wednesday, November 14th,* Philadelphia County Medical Society. *Thursday, November 15th,* Section Meeting, Franklin Institute, Medical Society of the Woman's Hospital; Northwest Branch, Philadelphia County Medical Society. *Friday, November 16th,* University of Pennsylvania Medical Society; American Philosophical Society; West Philadelphia Branch, Philadelphia County Medical Society.

The Pennsylvania Railroad Wreck Near Atlantic City.—On Sunday afternoon, October 28th, one of the new electric trains of the Pennsylvania Railroad, running between Camden and Atlantic City, N. J., jumped the track near Atlantic City and went overboard into a piece of water known as the Thoroughfare. The train, which left Camden at 1 o'clock in the afternoon, was well filled with passengers and about sixty persons were killed. Among these were two physicians from Philadelphia, Dr. Paul Felsberg, of 1421 Girard Avenue, and Dr. A. L. Hudders, of Mitchell and Lyceum streets, Roxborough. The coroner's inquest into the cause of the disaster is not completed at the present writing and no definite information concerning that phase of the question is available at this time.

The Annual Convention of the Pennsylvania State Graduate Nurses' Association was held in the Hotel Rittenhouse, Philadelphia, October 17th to 20th. Among the items of business discussed at the convention were the legal registration of nurses and provision for a fixed test of proficiency by examination for all nurses permitted to practise. A reception was held at the Hotel Rittenhouse on the evening of October 18th. Dr. W. M. L. Coplin and Dr. Henry Beates addressed the convention. It was voted to contribute toward the endowment of a chair of hospital economics at Columbia University. About one hundred nurses were in attendance at the convention. The following officers were elected for the ensuing year: President, Miss Roberta West; first vice-president, Miss Helen S. Greaney; second vice-president, Miss Annie W. Pennypacker; secretary, Mrs. Edwin W. Lewis; and treasurer, William McNaughton.

The Condition of the Insane in Pennsylvania.—In these days, reform and the strenuous search for graft have become the fashion throughout the entire country. Consequently, it is not at all strange that the condition of the insane poor in the State of Pennsylvania, which has been known to and complained of by those physicians in the State who are connected with institutions for the care of the insane, should come to the surface and be given prominent places in the newspapers. The newspapers of Philadelphia and other large cities in the State are just waking up to the fact that the provision made by the State of Pennsylvania for the care of the insane has been inadequate for years. The State Board of Charities has known of the condition for a long time, but up to the present time no relief has been in sight. It is quite likely that some steps will now be taken to remedy the condition. Whatever group of politicians happens to be in power at the time that the conditions are finally remedied will take all the credit to itself. On October 18th the newspapers announced that Governor Pennypacker had approved the selection of a site in Wayne county on which should be erected a State hospital for the care of the criminal insane. The Medical Jurisprudence Society of Philadelphia has been active in giving publicity to the condition of the insane in Pennsylvania, and in March last appointed a special committee, consisting of Mr. William W. Smithers, Dr. Charles W. Burr, and Dr. Horace Phillips, to investigate and report upon the conditions.

Charitable Bequests.—By the will of Theodore Kitchen the Presbyterian Hospital, the Presbyterian Home for Aged Couples, the Philadelphia Home for Incurables, the Pennsylvania Training School for Feeble Minded Children, the Indigent Widows' and Single Women's Asylum, the Chil-

dren's Hospital, the German Hospital, the Pennsylvania Hospital, the Philadelphia Dispensary, the Howard Hospital, the Preston Retreat, and the Philadelphia Polyclinic and College for Graduates in Medicine are residuary legatees, provided the daughter of Mr. Kitchen dies without issue. By the will of Julia Streeter the Children's Hospital, of Philadelphia, is made the residuary legatee. By the will of Mary V. Rogers the Germantown Hospital receives $1,000. The Children's Seashore House, Atlantic City, N. J., and the Children's Country Week Association receive $500 each. By the will of George Frederick Fox $3,000 is bequeathed to each of the following institutions: Friends' Asylum for the Insane, Frankford; Friends' Home for Children; Old Ladies' Home of Philadelphia, at Wissinoming; Old Man's Home; Presbyterian Home for Aged Couples and Aged Men; Presbyterian Home for Widows and Single Women; Lutheran Orphan Home and Asylum; Children's Aid Society; Hayes Mechanics' Home; Little Sisters of the Poor; Home for Aged and Infirm Colored Persons. These institutions also have a remotely contingent interest in the whole estate. By the will of William Dulles, the Pennsylvania Hospital, the Episcopal Hospital, and the Presbyterian Hospital, Philadelphia, become residuary legatees. By the will of Abraham M. Frechie, the Jewish Hospital, Philadelphia, receives $5,000 and the Jewish Maternity Association $2,000. By the will of Jeanne Decroupet, Saint Joseph's Protectory for Girls, Norristown, Pa., receives $400.

The Health of Philadelphia.—During the week ending October 27th, the following cases of transmissible diseases were reported to the Bureau of Health:

	Cases.	Deaths.
Typhoid fever	100	11
Malarial fever	2	0
Scarlet fever	21	0
Chickenpox	19	0
Diphtheria	90	12
Measles	29	0
Whooping cough	21	7
Tuberculosis of the lungs	92	65
Pneumonia	62	53
Erysipelas	4	1
German measles	1	0
Tetanus	2	0
Cancer	19	22

The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 6; puerperal fever, 1; dysentery, 1; diarrhœa and enteritis, under two years of age, 26. The total deaths for the week were 484, in an estimated population of 1,469,126, corresponding to an annual death rate of 17.13 in a thousand of population. The total infant mortality was 120; under one year of age, 89; from one to two years of age, 31. There were 39 still births, 22 males and 17 females. No unusual meteorological phenomena were reported by the weather bureau. The total precipitation was 0.77 inch.

BOSTON AND NEW ENGLAND.

The Portland (Me.) Medical Club.—At a meeting of this club, held on Thursday evening, November 1st, Dr. A. W. Haskell read a paper on Teratology.

The Alumni Association of the College of Physicians and Surgeons, of Boston.—At a meeting of this association held on Friday evening, October 26th, officers were elected as follows: President, Dr. Proctor K. Browne, of East Milton; vice-president, Dr. E. L. D. Turner; secretary and treasurer, Dr. A. B. Drake; executive committee, Dr. A. H. Thomasson, Dr. M. P. Putnam, and Dr. K. A. Fenelon.

The Bristol South District, Massachusetts Medical Society.—The programme for the semiannual meeting of this society, held at New Bedford on Thursday, November 8th, consisted of a symposium on Diseases of the Thyreoid Gland, arranged as follows: Pathology, Dr. D. P. O'Brien; Diagnosis, Dr. A. W. Buck; Medical Treatment, Dr. G. S. Eddy; Surgical Treatment, Dr. G. de N. Hough; discussion opened by Dr. Swift, Dr. Learned, Dr. Wilbur, and Dr. Truesdale.

BALTIMORE AND THE SOUTH.

The Washington County (Md.) Medical Society.—The following was the programme for a meeting of this society, held at Hagerstown, on Thursday, November 8th: Annual Address, by the retiring president, Dr. L. H. Keller; Paper, Vaccine and Vaccination, Dr. W. F. Elgin, Glenolden, Pa.; discussion opened by Dr. C. D. Baker and Dr. D. C. R. Miller. Subject for general discussion, Diphtheria Antitoxine, opened by Dr. J. W. Humrichouse.

Personal.—On Thursday, November 1st, the former and present members, about one hundred in number, of the medical staff of the Johns Hopkins Hospital, tendered a farewell banquet to Dr. Henry M. Hurd, superintendent of the hospital, who was to sail for Europe on the 5th inst. The feature of the occasion was to be the presentation to the board of trustees of the hospital by Dr. William H. Welch, of a life size portrait of Dr. Hurd, which will be hung in the library at the hospital.

The Mortality of Baltimore.—The report of the Health Department for the week ending October 27th, showed a total of 204 deaths, as compared with 195 the corresponding week of last year, 182 in 1904, and 184 in 1903. The annual death rate in 1,000 of population was: Whole, 17.99; white, 16.81; colored, 24.43. The principal causes of death were:

Typhoid fever	8	Bronchitis	5
Measles	1	Pneumonia	8
Scarlet fever	1	Diarrhœa (under 2 years of age)	5
Whooping cough	4	Bright's disease	15
Diphtheria	3	Congenital debility	14
Consumption	30	Old Age	3
Cancer	7	Suicides	2
Apoplexy	15	Accidents, &c	15
Organic heart diseases	19		

The nativity of the decedents was: United States, white, 115; foreign, 38; colored, 39; unknown, 12. Six deaths occurred at Bayview Asylum, 32 in hospitals, and 15 in other institutions. Twenty-nine coroners' inquests were held. The following number of cases of infectious diseases were reported, as compared with the corresponding week of last year:

	1905.	1906.		1905.	1906.
Diphtheria	17	41	Whooping cough	4	2
Scarlet fever	15	12	Chickenpox	2	1
Typhoid fever	27	27	Consumption	17	17
Measles	1	7			

CHICAGO AND THE WEST.

Statement of Mortality of Chicago for the Week Ending October 27, 1906, compared with the preceding week and with the corresponding week of 1905. Death rates computed on United States Census Bureau's figures of midyear population—2,049,185 for 1906, 1,990,750 for 1905:

	Oct. 27, 1906.	Oct. 20, 1906.	Oct. 28, 1905.
Total deaths, all causes	505	539	470
Annual death rate in 1,000	12.85	13.72	12.30
Sexes—			
Males	275	306	254
Females	230	233	216
Ages—			
Under 1 year of age	110	101	88
Between 1 and 5 years of age	39	42	40
Between 5 and 20 years of age	32	33	38
Between 20 and 60 years of age	214	233	205
Over 60 years of age	110	130	99
Important causes of death—			
Apoplexy	7	9	17
Bright's disease	35	45	36
Bronchitis	13	13	7
Consumption	49	52	61
Cancer	24	28	36
Convulsions	7	6	6
Diphtheria	12	15	16
Heart Diseases	41	59	53
Influenza	2	..	..
Intestinal diseases, acute	43	54	45
Nervous diseases	24	23	11
Pneumonia	69	47	53
Scarlet fever	8	9	1
Suicide	14	9	7
Typhoid fever	8	8	8
Violence (other than suicide)	35	31	25
Whooping cough	..	2	1
All other causes	114	129	87

Somewhat later than usual, pneumonia again assumes the lead of the principal causes of death. The 69 deaths reported during the week, from this disease, are 22 more than during the previous week, and 16 more than during the corresponding week last year. Some increase had been anticipated, as the result of exposure of the many thousands at the recent baseball games—but not the 50 per cent. shown in these figures. There is no such increase—on the contrary, a slight reduction—in the number of pneumonia cases in the hospitals.

GENERAL.

The International Medical Association of Mexico.—The second annual meeting of this association will be held in the City of Mexico on November 14-17, 1906. The programme, which is printed in English and Spanish, comprises thirty-four titles, and the proceedings, with the exception of the papers read by the Mexican members, will be in English.

Pith of Current Literature.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

November 3, 1906.

1. The Attitude of the Clinician in Regard to Exposing Patients to the X Ray, By DAVID L. EDSALL.
2. The Effects of Pericarditis on the Heart, By N. S. DAVIS.
3. Angina Pectoris—True and False, By JAMES M. ANDERS.
4. Obstruction of the Terminal Portion of the Common Bile Duct Due to Cancer of the Ampulla. Similar Obstruction Due to Pancreatic Cancer, By FREDERICK C. HERRICK.
5. The Treatment of Tuberculosis of the Urinary Tract in Women, By EDGAR GARCEAU.
6. Urinary Incontinence. The Treatment of Certain Forms by the Formation of a Vesicovaginal Rectal Fistula, Combined with Closure of the Introitus Vaginæ, By REUBEN PETERSON.
7. Conservative Surgery of the Ovaries, By EDWIN REYNOLDS.
8. The Present Status of Conservatism in the Surgical Treatment of Tubes and Ovaries, By JOHN EGERTON CANNADAY.
9. Relation Between Appendicitis and Gallstones, By JOHN G. SHELDON.
10. Influence of Intraperitoneal Injections of Warm Sterile Normal Saline Solution in Intraperitoneal Hæmorrhage, By MARK JAMPOLIS.
11. Observations on the Functions of the Association Areas (Cerebrum) in Monkeys, By SHEPHERD IVORY FRANZ.
12. Further Observations on the Influence of Alcohol on the Metabolism of Hepatic Glycogen, By WILLIAM SALANT.
13. Importance of Early Recognition and Operative Treatment of Malignant Tumors. Variation of the Extent of the Operative Removal According to the Relative Malignancy of the Tumor, By JOSEPH C. BLOODGOOD.
14. The Therapeutical Use of Typhoid Preparations, By OLIVER T. OSBORNE.
15. Solamis, By WILLIAM F. WAUGH.

1. The Attitude of the Clinician in Regard to Exposing Patients to the X Ray.—Edsall remarks that, in its relation to medical practice, one of the most remarkable things about the x ray is the tardiness with which there was any realization of its power of producing very marked changes in other tissues than those superficially situated. In consideration of the various facts which we have learned in recent years he believes that we should recant our attitude in regard to the case of the x ray even more decidedly than we have done. The careful clinician will therefore assume that the x ray is, first of all, an agent which has as active an effect on the organism as has a powerful dose of medicine; the greatest care should therefore be taken in using x rays. Two groups of disorders seem to deserve more careful consideration in this respect than any others with which we are as yet familiar, nephritis, and patients who are subjects to a considerable degree of toxæmia; added to his group should possibly be the anæmics.

2. The Effects of Pericarditis on the Heart.—Davis says that chronic pericarditis or pericardial adhesions rarely can be detected; fibrinous pericarditis should be in a large majority of cases, and pericarditis with liquid effusion ought to be recognized always. Of all symptoms, the most trustworthy is the unchanging shape of the area of precordial dulness during inspiration and expiration. That this condition must exist seems self evident when a pericarditis and an extra pericarditis fasten the anterior surface of the heart to the wall of the chest; further, it is impossible for the left lung to overlap the heart to an appreciable extent. Pericarditis is not generally a fatal lesion. It is variously estimated that from fifty to seventy-five per cent. of all cases recover. Rheumatic pericarditis, as compared to that caused by other infections, is benign. Hæmorrhagic and purulent pericarditis is almost uniformly fatal; always so unless recognized and successfully treated. A prognosis must be influenced largely by the condition of the muscle of the heart at the time of the pericarditis. Chronic alcoholism, and the cachexiæ of cancer, Bright's disease, and tuberculosis, make slight to possibility of prolonging life.

3. Angina Pectoris—True and False.—Anders reminds us that true angina pectoris is, comparatively speaking, an uncommon condition. The mechanism involved in its pathogenesis is imperfectly understood, and the views found recorded on the subject in medical literature are, for the most part, hypothetical. Two facts, however, are generally accepted: First, structural changes of the cardiovascular system, arteriosclerosis, aortic regurgitation, aortitis, hypertrophy, aortic aneurysm, adherent pericardium, and myocardial degeneration; second, irritation or disturbance of the cardiac sensory nerves. False angina pectoris originates in the majority of the cases, in vasomotor instability and irritability, heart strain, occasioned by suddenly induced vasoconstriction, autointoxications from errors of diet, and it can be divided into three classes: Neurotic, toxic, and reflex. When angina pectoris is well characterized, it can be differentiated in a decisive way from the false variety by the angor animi and the strong sense of imminent dissolution. Many additional symptoms may be associated during the paroxysms, but are not necessarily present, and only serve to corroborate the diagnosis of true angina. Among these are: Respiratory disturbances, including asthma, dyspeptic symptoms, and vasomotor disturbances, such as pallor of the face (rarely lividity), sweats, and coldness of the surface.

5. The Treatment of Tuberculosis of the Urinary Tract in Women.—Garceau states that the prognosis of tuberculosis of the bladder and of the upper urinary passages in women is to-day most encouraging. The question of primary seat of origin of the tuberculous process, kidney, or bladder, is a difficult problem to solve on account of the many factors which enter into it. We can only say that renal involvement appears to be pretty constant, but we are left in the dark as to how often the primary origin is the kidney. The treatment may be treated under three heads: Hygiene and climate, local treatment, and surgery. Early cases are sometimes best treated by a change of climate, but unfortunately incipient renal tuberculosis is rarely diagnosticated. Local treatment does not do any good in the first stage of vesical tuberculosis when the tubercles have not yet appeared in the bladder, but rest should be enjoined, and general sedatives should be administered. In the stage, when the tubercles are breaking down and ulcers appear, corrosive sublimate and silver nitrate should be used, which have a positive curative action on the tubercle and the ulcer. Used in conjunction, they sometimes eradicate the disease from an apparently incurable bladder. Should this treatment fail, it is not well to delay an intrapubic cystotomy which with proper after treatment is very efficacious. If there is an advanced tuberculosis of the kidney, it is best treated by the removal of the organ. Should there be an active focus elsewhere in the body it devolves on the surgeon to decide whether to operate or not. Nephrotomy is only palliative, and unless followed by nephrectomy leaves generally an intractable fistula. When the two operations have been done in succession the results have been brilliant. Resection is unjustifiable, because one can never know if diseased tissue has been left behind. The treatment of a tuberculous ureter is important, it should always be removed.

7, 8. Conservatism in the Treatment of the Tubes and Ovaries.—Reynolds answers the question, which ovaries should be subjected to conservative surgery, by describing the technics of operations and saying

that it is necessary to remember that there are two ovaries and that only one is necessary to perform the duty. If one is extensviely cystic, the other being normal, it is better to remove the cystic ovary completely; if both are cystic, the better of the two should be operated on first by conservative methods.—Cannaday states that the majority of the gynæcologists interrogated favor a restricted conservatism; that the number of pregnancies occurring after tubal operations is very small; that the results after plastic work on the ovaries are better; that age, the presence of pus, tuberculosis, and malignant disease indicate, as a rule, radical work; that prolapsed ovaries, generally speaking, should be elevated in the pelvis by suspension operations on the uterus, by shortening the ovarian ligament or by placing the ovary in front and on top of the broad ligament; that the functions of the tube and ovary should be preserved whenever consistent with health; that the artificial induction of the menopause brings a very serious disturbance into the life of the patient, and that ovarian transplantation, experimentally and clinically, has, in a limited field, been productive of satisfactory results.

9. **Relation Between Appendicitis and Gallstones.**—Sheldon observes that regardless of the absence of proof of existence of a definite relationship between appendicitis and infection of the bile passages, disease of the appendix should be kept in mind in performing every gallstone operation. The appendix should be inspected when possible and should by no means be considered normal on account of the absence of periappendicular changes.

10. **Influence of Intraperitoneal Injections of Warm Sterile Normal Saline Solution in Intraperitoneal Hæmorrhage.**—Jampolis concludes that: 1. The infusion of normal saline into the peritoneal cavity should be practised in every case of hæmorrhage not associated with infection, for two general reasons: (a) Its effect on shock; (b) its beneficial action on the peritonæum and the conditions in the peritoneal cavity. In some cases the procedure would prove palliative; in others, curative. 2. In cases of intraperitoneal hæmorrhage accompanied by shock so severe as an immediate laparotomy would inevitably prove fatal, the immediate infusion of warm normal saline solution would certainly do no harm, but would stimulate the peritonæum, counteract existing shock, and prepare the system for any that might follow a subsequent operation. 3. If hæmorrhage had ceased and laparotomy was not required, it would be of the utmost value. Apart from combating shock, the solution would mingle intimately with the blood, hold the particles in suspension, and hasten absorption without allowing coagula to form to be the foundation of troublesome and dangerous adhesions.

11. **Observations on the Functions of the Association Areas (Cerebrum) in Monkeys.**—Franz draws the following conclusions from his experiments on cats and monkeys, that: 1. In monkeys as well as in cats, the frontal lobes are normally employed in the formation of simple sensory associations. 2. When the frontal lobes are destroyed, recently formed habits are lost. It has been found possible, however, for the animal to form new associations or to relearn old tricks. 3. When the associations are firmly established, destruction of the frontal lobes is not always followed by a loss of memory. There are all degrees of memory for any such particular habit, from perfect to very decided hesitancy and slowing. 4. In this latter event the cerebral path is probably shortened, and the nervous connection of the sensory and motor elements of the association takes place through tracts at the brain stem. The association has, therefore, more of the character of a reflex.

MEDICAL RECORD.

November 3, 1906.

1. The X Ray in the Study of Congenital Malformations. By JOSEPH WILLIAM PRYOR.
2. The Importance of the Treatment of Chronic Otorrhœa, By SEYMOUR OPPENHEIMER.
3. The Suppression of Tuberculosis, By JOHN BENJAMIN NICHOLS.
4. Remarks on Enucleation; Some Uncalled For Disfiguring Operations Resulting from Failure to Recognize Accessory Sinus Disease, By HENRY MANNING FISH.
5. Contractures and Muscular Atrophy, By GUSTAF NORSTROM.
6. When is "Early" in Operating for Appendicitis? By A. M. POND.
7. The Modern Treatment of Intracapsular Fractures, By W. L. HUNT.
8. A Method of Operating on the Lip, By C. F. BUCKLEY.

2. **The Importance of the Treatment of Chronic Otorrhœa.**—Oppenheimer says that some one has said that the individual with a chronic otorrhœa is always standing on the brink of a volcano, and without doubt such a statement graphically represents the status of the patient with this affection, as with but little or no warning, various highly important structures may be consecutively infected and a fatal issue rapidly supervene. The importance of the treatment of this condition is therefore a most vital one. Unfortunately, many cases of neglected otorrhœa destroy considerable areas of highly important structures with but little or no symptoms other than a slight discharge, and at times even this may be absent, so that this feature in itself forms one of the strongest arguments in presenting the necessity for the careful treatment of every case of purulent otorrhœa even in the absence of any of the symptoms indicating serious trouble. And finally, in contradistinction to the gravity of the case when untreated, is its benign character when properly cared for and the removal from the patient of the ever present danger when there is suppuration of the middle ear and its annexa.

3. **The Suppression of Tuberculosis.**—Nichols remarks that none are more earnestly desirous of the suppression of tuberculosis than are the members of the medical profession; none are laboring more effectively to this end. The help is needed of all who can assist in the movement. Nothing, however, is to be gained by hysteria, blind following of fashion, self seeking officialism, or unpractical amateurism, or by any other than sane, rational, and scientific effort.

6. **When is "Early" in Operating for Appendicitis?**—Pond writes that just so long as surgeons persist in practising their art by rule, just so long will their work be unsatisfactory and their teaching unwholesome. When a surgeon tries to measure the danger of a ruptured appendix by hours, or still more, to put on such cases a time limit after which the inflamed organ becomes dangerous, the dynamics of pathology has not been reckoned with. The gravity of all infections is dependent upon (1) the virulency of the infective agent, whether it is simple or mixed, and (2) the degree of physical resistance possessed by the individual. It is most unfortunate, then, to have the teaching of eminent men expressed in hours. The author, therefore, offers an earnest plea that the cardinal symptoms produced by the pathological processes taking place in the structure of an organ be given the precedence over the matter of hours, and the proper importance be put upon these symptoms, irrespective of the time of their occurrence.

7. **The Modern Treatment of Intracapsular Fractures.**—Hunt states that for the last thirty years there has been a controversy in the medical journals whether intracapsular fractures ever united. The same discussion has entered more or less into all the medical textbooks since. He now wishes to call the attention to a method practised by Professor Maxwell, of the Keokuk Medical School. It comprises the old downward extension with adhesive straps with side traction at the groin, carrying a pull upward, outward, and forward. This takes up the weight of the thigh partly, holds it

opposite the point of fracture, and draws the capsule like a tight sleeve over the fragments, holding them in place.

BRITISH MEDICAL JOURNAL.

October 20, 1906.

1. The Management of Cases of Advanced Heart Disease, By R. SAUNDBY.
2. The Rubber Teat and Deformities of the Jaws, By T. F. PEDLEY.
3. Combined Antrum Plug and Artificial Denture, By A. S. HAYMAN.
4. Note on a Filariæ Larva in the Blood of a Blackbird, By W. ST. C. SYMMERS.
5. Memorandum on the Observation of Spirochætæ in Yaws and Granuloma Pudendi, By A. MAC LENNAN.

(Seventy-Fourth Annual Meeting of the British Medical Association.)

Section of Medicine.

6. A Discussion on Blood Pressure in Relation to Disease, By P. M. DAWSON, G. A. GIBSON, JOHN LINDSAY STEVENS, and others.
7. Some Clinical Manifestations, Visceral and General, of Arteriosclerosis, By A. STENGEL.
8. The Treatment of Typhoid Fever, an Inquiry Regarding the Effect of the Administration of Purgatives Upon the Intestinal Lesions of Typhoid, By W. B. THISTLE.
9. The Influence of Early Feeding in the Treatment of Typhoid, By F. J. SMITH.
10. Syringomyelia, Extending from the Sacral Region of the Spinal Cord Through the Medulla Oblongata, Right Side of the Pons, and Right Cerebral Peduncle to the Upper Part of the Right Internal Capsule (Syringobulbia), By W. G. SPILLER.
11. The Bearing of Philosophy on Psychiatry, with Special Reference to the Treatment of Psychasthenia, By J. J. PUTNAM.
12. Experimental Cerebrospinal Meninigitis and Its Serum Treatment, By SIMON FLEXNER.
13. Paracentesis of the Pericardium, By G. DOCK.
14. The Influence of Bodily Posture Upon the Position of the Heart, By R. D. RUDOLF and S. CUMMINGS.
15. Gastric Neurasthenia, By H. A. MACCALLUM.
16. The Preinsane Stage of Acute Mental Disease, By C. MEYERS.

1. **Advanced Heart Disease.**—Saundby gives the following advice regarding the management of cases of advanced valvular disease of the heart. As long as the patient is well enough to take exercise he should do so. He should live on the ground floor of his house, and should climb no steps, but he may still take a regular daily walk. The recuperative power of the heart depends upon the age and general health of the patient. The Schott treatment gives excellent results in cases of weakened myocardium. Heart disease should be treated by rest in a more or less recumbent position (1) when there is a certain amount of dropsy present; (2) if walking brings on severe dyspnœa or pain; and (3) should the state of the circulation be so bad as to cause danger of syncope. The bed should be flat and not sag in the middle. A helpless patient with dropsy should have a water bed, so as to avoid bed sores. Pure milk is, theoretically, the ideal diet, if given properly the stomach is not overloaded, while it is a readily assimilable and unirritating nutriment which contains a minimum of alimentary poison. Even when dropsy is present, a dry diet is of doubtful value. The author has tried the withdrawal of sodium chloride from the dietary when dropsy is present, but is not convinced of its importance. Tea, coffee, and alcohol should be used very sparingly, and tobacco should be absolutely forbidden. Digitalis is the best and most reliable drug, caffeine, and theobromide being also useful. Strychnine in the form of injections is of great value, and its use should not be deferred until too late. Of the vasculodepressor drugs, to unload the weight on the heart, the writer prefers erythrol tetranitrate, in a dose of one half grain. Bleeding is sometimes most useful. The judicious use of elaterium, jalap, and other purgatives is of the greatest service when dropsy is present. The inhalation of oxygen is of little value. Of the hypnotics veronal seems to work as well as any.

2. **Jaw Deformity.**—Pedley believes that many instances of deformity of the jaws, irregularity of the teeth and nasal obstruction are due to the use of the India rubber teat and later of the dummy teat or "comforter." The writer urges that whenever possible the mother should nurse her child. When a child must be fed by hand, it should be taught to drink from a cup. As a substitute for the common rubber nipple of the nursing bottle, he recommends the use of a good sized soft rubber finger stall. But every baby can be taught to drink from a cup at the age of six months.

6. **Blood Pressure and Disease.**—Stevens holds that altered and specially increased blood pressure has little or nothing to do with the alterations in the arterial wall known as atheroma and arteriosclerosis. These structural changes are dependent upon the action of poisons and not upon variations in blood pressure. The pressure varies from hour to hour and day to day, and may do so for a lifetime without affecting the arteries. Focal disease, such as atheroma of the aorta, may be caused without any rise in blood pressure whatever. Arteriosclerosis is caused by poisoned blood, which causes at the same time a contraction of the muscular fibres of the vessel wall, and so raises the pressure, such elevation being thus a result and not a cause of the arterial disease.

7. **Arteriosclerosis.**—Stengel calls attention to the fact that some cases of arteriosclerosis are associated with continued fever and repeated chills. Other cases are accompanied by attacks of agonizing abdominal pain, possibly due to intermittent claudication of the diseased splanchnic arteries. Chronic colitis is very common among aged infirm arteriosclerotics; ulceration of the intestine also occurs. Comparatively little significance attaches to the occasional presence of slight traces of albumin in the urine of arteriosclerotics when the other phenomena, especially polyuria, of contracted kidney are wanting.

8, 9. **Typhoid Fever.**—Thistle holds that in typhoid fever it is possible by the early and brisk use of purgatives to greatly limit the number of bacilli in the intestinal glands, thus limiting the destructive process in them. As soon as a case comes under his care he sweeps the intestines clear with a few grains of calomel followed by one half ounce of magnesium sulphate or other saline. This process is repeated day after day in order to: (1) Prevent additional infection of the intestinal glands; and (2) abstract toxines from the body by way of the bile stream and the intestinal secretions. —Smith believes that we should allow much greater latitude of diet in typhoid fever than is ordinarily laid down in textbooks. Attention must be paid to two things: No hard or indigestible food must be given, such as nuts, grapes, etc.; and food must not be given too freely lest it cause distention.

LANCET.

October 20, 1906.

1. Then and Now in Surgery, By C. A. BALLANCE.
2. On Medical Books, By N. MOORE.
3. Some Observations on Enlarged Veins in Children, By A. G. GIBSON.
4. Strangulation of the Appendix Vermiformis in Hernial Sacs, By H. S. CLOGG.
5. The Detection of Sugar in Urine and Its Significance in Connection with Life Insurance, By A. M. KELLAS and F. J. WETHERED.
6. A New Aspect of the Pathology and Treatment of Leprosy, By R. S. BLACK.
7. A Method of Taking Impressions of the Weight Bearing Surface of the Foot, By W. D. LAWRIE.
8. Oral Sepsis in Operations on the Throat, By W. WINGRAVE.

3. **Enlarged Veins and Tuberculosis.**—Gibson has observed a number of cases of children, complaining of general debility, wasting, and listlessness, in which examination shows nothing abnormal beyond a ramification of small veinules on the chest and elsewhere. The veinules are flush with the surface of the skin; in front they tend to converge towards the upper part of the sternum, but behind they show a stellate arrangement. In very marked cases large veins can be seen as far out as the deltoid region. As a rule, none are seen below the chest. The jugulars can almost always be seen either as blue streaks or distinctly dilated. Veins can frequently be seen also under the chin, at the temples, and sometimes on the forehead. Full jugular veins are very, very rarely seen in healthy children. In the cases here described deep inspiration produces only a slight collapse, if any, of the veins. The author reports fourteen such cases of enlarged veins; seven were boys and seven girls; the ages ranged from four to ten years; in fifty-seven per cent. there was a history of tuberculosis in the family; visible veins on the chest were present in ninety-two per cent., downy hair in forty-two per cent., an Eustace Smith retraction murmur (a systolic murmur over the upper sternum on retraction of the head) in seventy-one per cent., and palpable glands in the neck in sixty-four per cent. Gibson believes these cases to be instances of tuberculous bronchial glands. Such tuberculosis of the glands, especially those of the mediostinum, is extremely frequent in children who have died from diseases other than tuberculosis, and where death has been due to tuberculosis and overwhelming percentage of cases show the glandular mediastinal affection in addition to that of other organs. Many of these cases have hitherto not been diagnosticated until too late. The writer suggests that the presence of the described symptom complex (enlarged veins, etc.) is of value in diagnosis, and should lead to the earlier recognition of such cases. The children improve quickly under a liberal diet and ordinary attention to health, so that the knowledge of the presence of mediastinal tuberculosis is a most valuable weapon for prophylaxis.

4. **Strangulation of the Appendix in Herniæ.**—Clogg states that the appendix as a content of a hernial sac is by no means infrequent, the relative frequency of appendicular femoral and inguinal hernia being about equal. Two accidents may befall such a herniated appendix; it may become inflamed as in an ordinary appendicitis, or it may be strangulated at the hernial ring. It is often extremely difficult to distinguish between the two, and they can only be differentiated in the early stages, since the inflamed appendix rapidly swells, and the strangulated appendix soon becomes infected. The clinical symptoms are practically the same. The writer has collected fifty-three cases of strangulation of the appendix from the literature. In the majority the appendix was the sole content of the sac. Herniation of the appendix is due to its mobility and its situation, not to any extreme length. As a rule only part of the appendix lies in the hernial sac, the apex being usually the most advanced point. In most cases it lies free in the sac, there being no adhesions. Of the fifty-three cases, only three occurred in male subjects. The herniæ are usually of small size, generally early reducible, and have not previously given rise to any inconvenience. Most cases are ushered in with acute local symptoms, followed later by abdominal symptoms. Constipation is the rule. Occasionally a strangulated appendix runs a chronic course. A correct diagnosis is rarely made, the cases being usually taken to be ordinary strangulated herniæ. The writer has operated upon three cases, all recovering.

5. **Glycosuria.**—Kellas and Wethered have studied the various means of detecting the presence of sugar in the urine, the tests investigated being the following: 1. The Fehling copper test. 2. Pavy's modification. 3. The Safranin test. 4. Phenyl hydrozine. 5. Fermentation by yeast. 6. Alkaline picrate test. 7. Methylene blue and other tests. The principal conclusion arrived at by them is that a small quantity of grape sugar—or a body giving identical reactions—is probably an almost constant constituent of normal urine. The balance of evidence indicates that such small quantities can readily be demonstrated to be present by the action of phenylhydrazine or of alkaline safranin solution on urine. Their conclusions as to the significance of glycosuria will be given at the conclusion of their report.

6. **Leprosy.**—Black holds that nasal ulceration occurs very early in leprosy, the patients at first thinking that they are merely suffering from a protracted nasal catarrh. But even in these extremely early stages of the disease, such patients are infective, this accounting for some of the mystifying cases of leprosy where any history of contact is unobtainable. The disease is spread by the discharge from the nose; therefore maculo-anæsthetic cases in whom the infectious nasal ulceration has disappeared could return to their ordinary environment without danger to others. In the nodular cases there is no reason why the festering nasal sore should not be attacked by curetting and other surgical means, and by prolonged antiseptic lavage, so that the nasal cavity may be cleared as far as possible of the leprosy bacilli. The author also holds that the leprotic erythema is derived not from toxines derived from the bacillus lepræ, but from toxines produced by the very large number of streptococci, staphylococci, and other organisms associated with the festering sore spreading through the nasopharyngeal cavity. The same is true of the swelling of the hands and feet. Both conditions would be benefited by the surgical treatment of the nose mentioned before.

LA PRESSE MEDICALE.

October 10, 1906.

1. Monoamniotic Twin Pregnancy, By CYRILLE JEANNIN.
2. Should One Sleep After Dinner? By ALFRED MARTINET.
3. The Therapeutical Applications of the Theory of Opsonins, By R. ROMME.

2. **Should One Sleep After Dinner?**—Martinet says that the answer to this question depends on three factors, the size of the meal, the time of day, and the fatigue of the individual, particularly intellectual fatigue and the general condition, including the digestive capacity of the individual.

October 13, 1906.

1. Specificity of the Antibody, Sensibilatrice, and Alexin, By L. HALLION.
2. Intestinal Origin of Pulmonary Anthracosis, By GEORGES PETIT.

1. **Specificity of the Antibody.**—Hallion says that each antibody is specific; that is, each exercises its own peculiar reaction. Alexin produces hæmolysis and induces profound changes in the red corpuscles after the manner of a proteolytic ferment, but in order that the red corpuscles may undergo this modification, it is necessary that another substance, sensibilatrice, should previously be present.

2. **Intestinal Origin of Pulmonary Anthracosis.**—Petit claims that the intestinal origin of anthracosis of the lung has been demonstrated experimentally and clinically; that the absorption of anthracogenous particles can easily produce pulmonary anthracosis in a tuberculous child in whom the mesenteric barrier has already been broken down; that physiological anthracosis exists in direct proportion to the anthracogenous dust swallowed and the permeability of the glands. These statements form an argument in favor of the importance of the digestive tract in the genesis of infections of the lungs, with especial reference to that of tuberculosis.

BERLINER KLINISCHE WOCHENSCHRIFT.

October 1, 1906.

1. Hydrops Toxicus, By H. QUINCKE.
2. The Topographical Percussion of the Heart in Children, By A. MAYER and R. MILCHNER.
3. Experimental and Critical Investigation of Sahli's Desmoid Reaction, By S. SAITO.
4. The Improvement of Leucæmia by Intercurrent Infections, By C. FUNCK.
5. Contribution to the Treatment of Trachoma with Radium, By A. N. DINGER.
6. The Present State of our Knowledge Regarding Epidemic Cerebrospinal Meningitis (*Concluded*), By M. WESTENHÖFER.

1. Hydrops Toxicus.—Quincke describes a case of pretty severe pernicious anæmia of uncertain origin, in which a general hydrops developed and ran a course of two weeks while the bodily weight increased eighteen pounds, the general condition was undisturbed, and the condition of the blood and of nutrition constantly improved. During the third week there was a general desquamation of the epidermis like that met with after scarlet fever. Hydrops may be produced mechanically, by obstruction to the venous flow, by disturbances of the innervation, or by the influence of poisons on the tissues, hydrops toxicus. The case described falls under that last class. A toxic hydrops may be produced (1) through the local action of the poison (a) upon the vessel walls; (b) upon the tissue itself; (c) upon both. (2) Through action of the poison on the nerves which supply the region in question. These may be (a) the nerves, which supply the vessels and influence not only their size, but also the penetrability of their walls; (b) nerves which affect the tissue only; (c) nerves which affect both the vessels and the tissues. The case described seems to belong to the last named variety.

3. Sahli's Desmoid Reaction.—Saito has instituted a series of experiments which prove that Sahli's reaction is dependent on a great many factors which influence the secretory and motor functions of the stomach, and that intestinal digestion may play a definitive part. He does not rate its diagnostic value very highly, because its result is dependent on too many factors which may often clinically be unobservable.

5. Treatment of Trachoma with Radium.—Dinger reports seven cures out of sixteen patients. The trachoma granules completely disappeared, but in three a conjunctivitis persisted which needed treatment with zinc sulphate. He says that the younger the patients the quicker and more perfect will be the cure, while in older cases and in those complicated with pannus more time is needed, but that the pannus and trachoma granules disappeared gradually, and the patients are rendered able to work. He prefers the treatment with radium to that with caustics, because it is quicker and painless, and he says that the patients prefer it to the mechanical removal of the granules, because the latter is very painful and necessitates entrance into the hospital.

October 8, 1906.

1. To Wilhelm Waldeyer on His Seventieth Birthday, October 6, 1906.
2. Experiments in Regard to Hæmatogenous Tuberculosis of the Lymphatic Glands, By P. v. BAUMGARTEN.
3. Hot Air Treatment in Emphysema, Chronic Bronchitis, and Bronchial Asthma, By E. COHN-KINDBORG.
4. Barberio's Semen Reaction, By J. B. LEVINSON.
5. The Care of the Abdominal Walls After Delivery, By P. BROSE.
6. The Topographical Percussion of the Heart in Children (*Concluded*). By A. MAYER and R. MILCHNER.
7. Ætiology and Epidemiology of Epidemic Cerebrospinal Meninigitis, By K. H. KUTSCHER.

2. Experiments in Regard to Hæmatogenous Tuberculosis of the Lymphatic Glands.—Von Baumgarten has instituted a number of experiments which go to show that the infection of tuberculosis may be communicated to the lymphatic glands by means of the blood, as well as by the lymphatics.

3. Hot Air Treatment in Emphysema, Chronic Bronchitis, and Bronchial Asthma.—Cohn-Kindborg has devised an apparatus by means of which the thorax of the patient is enclosed in a box and subjected to hot air. This treatment is recommended in the classes of diseases named.

5. The Care of the Abdominal Walls After Delivery.—Brose believes that the abdomen should be bandaged immediately after delivery in order to prevent relaxation of the abdominal muscles, and bring the muscles back into their proper position.

6. The Topographical Percussion of the Heart in Children.—Mayer and Milchner present a valuable article on this subject which it would be difficult to condense into a brief space without doing it great injustice. It should be read in the original.

MUENCHENER MEDIZINISCHE WOCHENSCHRIFT.

October 9, 1906.

1. Hebotomy, By SEITZ.
2. The Behavior of Agglutinine in the Passively Immunized Organism, By MANTEUFEL.
3. Natural Disinfection of the Intestine, By MORO.
4. Further Results of Our Method of Demonstration of Proteolytic Ferment Action, By JOCHMANN and MÜLLER.
5. Contribution to the Demonstration of the Spirochæta Pallida in Syphilitic Products, By RITTER.
6. The Technics of Ether Administration, By SUDECK.
7. Concerning the Induratio Penis Plastica, By WÄLSCH.
8. Treatment with Mercury Light, By ASSFALG.
9. Contribution to the Histology of Chondrosarcoma, By MAYER.
10. Hernia Diaphragmatica Spuria, By WECKERLE.
11. A Case of Acute Inflammation of the Membranes of the Brain and Spinal Cord, By PALMER.
12. The Value of Radiography of the Thorax in Pneumonia, Particularly When Centrally Located, By RIEDER.
13. Catgut from Healthy Slaughtered Animals, By KUHN.

1. Hebotomy.—Seitz describes a number of cases in which he has divided the pubic bone in order to enlarge the pelvis during labor.

2. The Behavior of Agglutinine in the Passively Immunized Organism.—Manteufel considers that the removal of agglutinines, as it generally takes place, is caused by the occurrence of precipitation. Under certain conditions, in which according to all appearances there is no formation of a precipitate, no absorption of agglutinines takes place. He considers the untenable theory advanced by Kraus and Pribram that the agglutinines are so closely connected with the precipitable substance of the serum albumin that they can become ineffective through the formation of the union between precipitin and precipitable substances.

3. Natural Disinfection of the Intestine.—Moro seems to think that human milk is the ideal, natural disinfectant of the intestine both in infants and adults.

4. Further Results of Our Method of Demonstration of Proteolytic Ferment Action.—Jochmann and Müller in this, their third paper on this subject, consider the differences in the ferment contained in the leucocytes of warm blooded animals, and the demonstration of an albumin digesting ferment in human colostrum.

7. Induration Penis Plastica.—Wälsch reports three cases in which induration appeared in the penis several years after an attack of gonorrhœa. In one case improvement was obtained after two months of treatment with an ointment of iodine and potassium iodide, with moist warm compresses externally and sodium iodide internally. Another case was cured in about six months by injections of fibrolysin. The third case did not come under treatment.

9. Histology of Chondrosarcoma.—Mayer gives a full description of the clinical history, operation, and microscopical examination of a chondrosarcoma of the

upper end of the humerus. He says that the histological construction of the tumor greatly resembled that of normal enchondral ossification, even showing different stages at different places.

12. **Radiography of the Thorax in Pneumonia.**—Rieder concludes his paper with the statement that as we can obtain the most certain information in regard to the localization, size, and extension of a pneumonic focus through observations with the x rays, these must exercise a great influence over the prognosis and treatment.

13. **Catgut.**—Kuhn describes the preparation of catgut and concludes: 1. Healthy intestines from animals butchered under official control should be exclusively used. Immediately after the animal has been butchered the intestines should be removed with careful and competent precaution against contamination, emptied of their contents, cleansed with clean water, or with an aseptic, antiseptic, or preservative fluid. 2. They should then be again cleansed in alkaline or other fluids which are strongly aseptic and antiseptic for a certain length of time. 3. The elementary fibres of the intestine should then be tested for the presence of germs. 4. The fibres found to be free from germs should be drawn into catgut with aseptic and antiseptic precautions and dried. 5. They should then be subjected to a final treatment, after which they are ready to be put on the market as sterile fibres.

October 16, 1906.

1. The Experimental Production of Atypical Proliferations of Epithelium and the Origin of Malignant Tumors, By FISCHER.
2. Displacement of the Larynx and Trachea in Different Diseases of the Thoracic Organs, By WICHERN and LÖNING.
3. Aneurysm of the Aorta of Syphilitic Origin and Its Early Diagnosis, By SAATHOFF.
4. Gaseous Phlegmon, By ROTHFUCHS.
5. Technics of Thiersch's Skin Transplantation, By WALJASCHKO.
6. The Treatment of Fresh Wounds with Dressings Dried by Heat, By ASBECK.
7. Congenital Hernia in the Linea Alba, By KLAUSSNER.
8. Intestinal Occlusion by Murphy's Button After Esection of the Pylorus, By DÖRFLER.
9. A Case of Fatal Phosphorus Poisoning, By FEDERSCHMIDT.
10. Hebotomy (*Concluded*), By SEITZ.
11. Hermann Cohn, By WOLFFBERG.

1. **The Experimental Production of Atypical Proliferations of Epithelium and the Origin of Malignant Tumors.**—Fischer succeeded in obtaining an atypical growth of epithelium by means of injections into the ears of rabbits, but he was never able to demonstrate a destructive growth, and no carcinoma was produced.

2. **Displacement of the Larynx and Trachea in Different Diseases of the Thoracic Organs.**—Wichern and Löning report a number of cases of tumors of the mediastinum, pleural exudates, pneumothorax, and one of extensive pleuritic adhesions which had drawn the heart out of place, in all of which the larynx and trachea had undergone more or less lateral displacement.

3. **Aneurysm of the Aorta of Syphilitic Origin.**—Saathoff emphasizes the point that it is important to not only diagnosticate an aneurysm of the aorta in its early stage, but to recognize at the same time when it is dependent on syphilitic aortitis, and states the proposition that any insufficiency of the aorta in comparatively young people in whom the presence of arteriosclerosis may be excluded with great probability, not preceded by articular rheumatism or endocarditis, must arouse the suspicion that it is due to a syphilitic aortitis. He reports seven cases of this nature, and concludes that the prophylaxis of aortic aneurysm lies in the treatment of the syphilis of the aorta.

4. **Gaseous Phlegmon.**—Rothfuchs reports two cases of this rare condition. The diagnosis is easy. The affected limb becomes discolored as in gangrene, crepitation is felt on palpation and percussion gives a tympanitic note. The prognosis is pretty bad. Treatment must be radical.

6. **Treatment of Fresh Wounds.**—Asbeck says that since 1901 he has successfully treated about five hundred injuries without disinfection of the neighborhood or touching the wound with the hands by the application of a compress of iodoform gauze covered with mull, cotton, and a bandage, the whole having been sterilized by heat.

7. **Congenital Hernia in the Linea Alba.**—Klaussner reports two cases of this nature in which the cause was a congenital defect in the linea alba.

ZENTRALBLATT FUER GYNAEKOLOGIE.

October 20, 1906.

1. Bleeding During Pregnancy in Consequence of Changes in the Decidua Reflexa, By W. A. MENDELS.
2. The Technics of Cystoscopy, By SCHWARZWÆLLER.
3. Myoma of the Pelvic Connective Tissue, By K. HUGEL.

1. **Hæmorrhage During Pregnancy.**—Mendels records the case of a woman who miscarried in the seventh month of her pregnancy, and who had had for four months previously hæmorrhages from the uterus. The first time it appeared, in the third month, it lasted nearly a month; but at each recurring interval, it lasted for a little while only. None of the usual causes of bleeding during pregnancy accounted for the hæmorrhage. The membranes were ruptured centrally, excluding a placenta prævia, there was no early separation of the placenta nor was this organ diseased. The outside of the chorion, however, was perfectly smooth and microscopic examination showed that at no place was a decidua reflexa demonstrable; only a thin layer of fibrin was found between the decidua vera and the decidua serotina. The practical significance of this condition lies in the serious hæmorrhage which may take place from the intervillous spaces, giving an indication for the induction of labor if the anæmia becomes sufficiently intense.

3. **Myomata of the Pelvic Connective Tissue.**—Hugel concludes his report of such a case by this summary: 1. In all cases of tumors of the abdomen of uncertain origin, the intestines should be distended with gas by way of the rectum, to assist in the diagnosis. 2. Myomata of the pelvic connective tissue are not unusually rare; their presence must be considered in all cases in which small, hard tumors of the pelvis can be felt. 3. The retroperitoneal character of the tumors can often be made out by palpation alone; by the vaginal examination the entire pelvic brim and the surroundings of the large vessels can be palpated. 4. Retroperitoneal myomata which have their origin about Petit's triangle are absolutely immovable. Myomata of the pelvic connective tissue, which originate in the small pelvis, are slightly movable—if they are not prevented from being movable by their surroundings—and may therefore be confused with ovarian tumors. 5. Myomata of the pelvic connective tissue are leiomyomata, while myomata of the abdominal parietal walls may be of mixed character.

ZENTRALBLATT FUER CHIRURGIE.

October 13, 1906.

1. The Surgical Treatment of Acute Appendicitis During the Interval, By PAOLO FIORI.

1. **Acute Appendicitis.**—Fiori says that most surgeons are agreed that the interval operation for appendicitis protects the patient to a great degree from septic infection. Fiori has operated upon ten patients of late between the third and seventeenth day following the acute attack, and lost but one of these, probably from paralytic obstruction of the intestines, as no peritonitis was present. If one attempts to cure his pa-

tients by purely expectant means, there is always the danger of recurrent attacks with all the seriousness of the primary invasion and the possibility of complications. Clinically and statistically, the value of the interval operation is justified. In cases of perforation of the appendix or of abscess formation, the author always tries to remove the appendix first if complications do not render this too serious.

LA RIFORMA MEDICA

October 20, 1906.

1. A Case of Motor Aphasia with Cortical Hæmianæsthesia, By ALBERTO ROVIGHI.
2. A Scorbutic Phenomenon Produced by Eberth's Bacillus, By GIOVANNI AUVERNY.
3. Multilocular Cystadamantinoma of the Inferior Maxilla, By ORESTE CIGNOZZI.

2. Typhoid Infection Producing a Scorbutic Syndrome.—Auverny reminds us that typhoid infection can assume a great variety of atypical forms. In a girl of fifteen he observed the development of a disease which, in many respects, resembled scurvy, but in which the illness began with an attack of irregular remittent fever of considerable altitude. On the ninth day the entire body was covered with hæmorrhagic spots. The patient grew very weak, and complained of pain in the gums, which bled very easily. A severe epistaxis appeared on the twelfth day, and left the patient in a profound state of anæmia. The size of the hæmorrhagic spots varied from that of a pin head to that of a shirt button. The bacteriological examination of the blood taken from the lobe of the ear showed that the patient was suffering from a general typhoid infection, as cultures revealed the presence of Eberth's bacillus. The patient died eighteen days after the appearance of the rash. The autopsy showed ulcerated Peyer's patches, and the typhoid bacillus was cultivated from the blood and the tissues.

3. Cystdamantinomas of the Lower Jaw.—Cignozzi contributes a clinical and pathological study of these peculiar tumors. These growths are characterized by a very slow course, but the cystic form is even slower than the solid form. In the cystic form, due to a pathogenic development in the dental roots, the diagnosis is much more difficult than in the other types, because the dental tumors present so few symptoms at the start. These conditions are frequently mistaken at first for caries or periostitis of the root canals. When the cystic growth has assumed a sufficient volume, however, a characteristic symptom develops—namely, a crackling or parchment like sensation over the thinned out bony wall thereof. While these tumors are, strictly speaking, not malignant, they tend to recur, and in operating one should take care to excise them thoroughly, giving them wide berths.

ROUSSKY VRATCH

September 30, 1906.

1. Some Data on the Cryoscopy of the Urine in Diabetes Mellitus (*To be concluded*), By S. S. ZIMNITSKI.
2. Veronal and Its Therapeutical Action (*Concluded*), By G. G. LIKUDI.
3. On the Microbe of Syphilis, By A. D. VOLOSCHINE.
4. Primary Chronic Fibrinous Bronchitis, By A. Z. BYLINE.

3. The Microbe of Syphilis.—Voloschine examined fifty-five patients with syphilis, who entered the hospital during the past seven months. Whenever possible the syphilitic material was examined fresh in hanging drops. Otherwise, it was examined in smears. Giemsa's stain, or that of Oppenheim and Sachs (gentian violet and carbolic acid), was used in the smears. Of the fifty-five patients, seventeen showed the spirochæta pallida. This organism was found only in three of the ulcerated chancres, and in none of the five nonulcerated chancres. The examination of four chancres which had been excised also proved negative. The spirochæta was found in one case of pustular syphilide and in ten out of nineteen cases with a papular eruption in the mouth. As a germ very similar to the spirochæta has been found in the cavity of the mouth in ulcerative stomatitis, not much importance should be attributed to the finding of these germs in syphilitic lesions in the oral cavity. The blood was examined in a large number of these patients. Usually three hanging drops and four smears were prepared from each patient. In eighteen cases the blood was taken from the veins at the elbow by means of a syringe with a long needle. In all these specimens the examination for spirochæta was negative. The germ was present only in one case out of twelve examples of syphilitic buboes. There is, as yet, no reason to think that the spirochæta pallida is the specific germ of syphilis. Its presence is too inconstant, and it is apt to be confounded with other spirochæta, which are commonly met with in the body in other affections than in syphilis. The cytorrhyctes described by Siegel also cannot be definitely identified, as it is similar to a number of formations which occur normally. It is most often confused with fragmented red cells, which are seen when a smear is spread with a platinum loop that has not perfectly cooled. Furthermore, there are a number of minute bodies which stain with borax methylene blue or with azure blue, and which consist of masses of small round granules. Possibly these formations are connected with the spirochæta pallida. The author saw them in syphilitic connective tissue.

4. Primary Chronic Fibrinous Bronchitis.—According to Byline this type of bronchitis is very rare. He reports a case observed in Obraztsoff's clinic in Kieff. The patient was a man, aged thirty-four years, who had been expectorating large amounts of fibrinous material moulded into the form of bronchial casts. The ætiology of this form of bronchitis has until now remained obscure. A variety of microorganisms have been found in the fibrinous casts—the particular germ found corresponding usually to the disease which the fibrinous bronchitis accompanied. Thus when it followed pneumonia the pneumococcus was found; when it was the sequel of diphtheria, the Loeffler bacillus; when it accompanied tuberculosis, the Koch bacillus, etc. In primary fibrinous bronchitis, a variety of germs have been found, for the most part streptococci, but it is by no means certain that fibrinous bronchitis is the result of a specific microorganism. The fibrinous exudate in the bronchi always contains desquamated epithelia undergoing fatty degeneration. According to Schmidt the formation of fibrin depends upon the union of fibrinogen and fibrin ferment. The fibrinogen is present in the fluid exudate in the air passages, while the fibrin ferment is probably liberated by the disintegration of the epithelial cells. This is the theory of Schnitthelm, therefore, for the formation of fibrinous bronchial casts such as are expectorated in this form of bronchitis. The alveoli become filled with exudate which contains fibrinogen. The epithelium of the alveoli desquamates and liberates fibrin ferment which coagulates the fibrinogen forming fibrin. The process is pushed onward from the alveoli to the smaller bronchi, and thence to the larger tubes. Hence desquamative bronchitis is, in reality, at the basis of fibrinous bronchitis, and if we can find the cause of the former, we have found the ætiology of the latter.

THE ARCHIVES OF PHYSIOLOGICAL THERAPY.

October, 1906.

1. Significance of Pulse and Temperature in the Diagnosis and Treatment of Pulmonary Tuberculosis, By JOHN E. WHITE.
2. Universal Method for Using Direct Electric Currents, By WILLIAM J. HERDMAN.
3. Rhythm as a Factor in the Domain of Therapeutics, By SAMUEL S. WALLIAN.

4. Late Results of Röntgenization, By WILLIAM L. BROSIUS.
5. Physicotherapy and Physiotherapy, By J. A. RIVIERE.

1. Significance of Pulse and Temperature in the Diagnosis and Treatment of Pulmonary Tuberculosis.—White says that, although the members of the profession at large pay but little attention to either pulse or temperature in the treatment of pulmonary tuberculosis, yet observation of these phenomena is of great importance. One of the earliest symptoms of the disease is the rapid pulse rate, and when a pulse rate above 100 is found it should be regarded with suspicion. When the disease is active, or progressive, a most constant symptom is rise of temperature. It is our best guide in treatment and prognosis. By careful observation of the temperature, we learn much as to the virulency of the disease; if it is under 100.4 degrees Fahrenheit, we know that the trouble is only moderately active, and that the open air life and nourishment will do much toward effecting an arrest and establishing a cure. As the temperature rises above 100.4 degrees Fahrenheit, the disease becomes more virulent, with lessened chances of our finally extinguishing the fire that produces the temperature. In every active case temperature presents itself at the same time each day, with almost clock like regularity. A temperature record is valueless unless the observations are taken reguarly and at the same time each day. In comparing a carefully kept temperature record with a physical examination, we find that, of the two, the record is the more valuable. A physical examination tells us practically nothing, it simply locates the trouble, in which lung it is and its approximate extent, *i. e.*, it tells us what has already been destroyed. A physical examination is very unsatisfactory and cannot be compared to a pair of scales and a thermometer, which should be first in importance, for with it we can make a fairly accurate prognosis and outline the proper treatment, neither of which we could do from a physical examination. The pulse record is second only to temperature. The pulse rate may remain high for many months after the temperature has become normal, and if extremely high, may make it necessary to enforce rest even after the temperature has been normal for some time.

4. Late Results of Roentgenization in Epithelioma.—Brosius refers to a report he made in December, 1904, on three cases of epithelioma. The patients were well in fifty to sixty days after beginning röntgenization. His conclusion at that time were that pathological tissue being of lower vitality than physiological, we can so learn our individual subjects, so regulate our vacuum, distance, time, and frequency of exposures, as to cause, in most cases, a destruction of abnormal tissue only, and at the same time so stimulate normal repair as to see pathological tissue melt away without sloughing, and new, almost normal tissue take its place. To this the author now adds that we have learned that primary cell life is very markedly affected by the emanations from a Crooke's tube. The spermatazoa have disappeared from the seminal fluid of many operators who have carelessly exposed themselves to this form of energy. The ovum fails to proliferate after exposure to this peculiar light. We know that malignant growth is the result of the abnormal proliferation of cells, embryonic in character, often foreign to the structures in which they are found, and exhibiting a tendency toward degeneration. Any influence, chemical or mechanical, which will deprive the cell of its power to procreate will inhibit the growth, and the influence which will deprive the cell of its life will result in the disintegration of the growth. This energy we have in the Röntgen rays.

THE AMERICAN JOURNAL OF OBSTETRICS.

October, 1906.

1. A Careful Study of the Parametrium in Twenty-seven Cases of Carcinoma Cervicis Uteri and Its Clinical Significance, By J. A. SAMPSON.
2. Urethral Bacteriology as a Factor in the Ætiology of Cystitis in Women, By F. J. TAUSSIG.
3. The Evolution of Modern Cystoscopic Instruments and Methods, By L. PETERS.
4. Cystocele, By J. R. GOFFE.
5. A Review of the Operative Treatment of Cystocele in the Past One Hundred Years, By C. G. CHILD, JR.
6. The Construction of a New Vagina, By A. BROTHERS.
7. A Fatal Case of Eclampsia After the Delivery of Twins. Remarks on the Ætiology and Pathology of the Disease, By C. G. PARNALL.

2. Urethral Bacteriology in the Ætiology of Cystitis.—Taussig summarizes the relationship of urethral bacteria to the production of catheter cystitis in women as follows: 1. The normal urethra, free of disease, is sterile in only a small proportion of cases. 2. Pathogenic germs are present in about half of the total number of urethræ. 3. Of the pathogenic bacteria found staphylococcus pyogenes albus is the most common. The colon bacillus is frequently found where patients are confined to bed. 4. That these pathogenic bacteria are actually carried into the bladder by catheterization was shown in eight examinations in which the urethral secretion and the urine obtained by catheterization were compared. 5. Irrigation of the urethra with boric acid removes many of the urethral bacteria, but not all of them when their number is great. 6. The double catheters thus far devised to avoid contamination with the urethral bacteria are not as satisfactory as the ordinary glass catheter. 7. When repeated catheterization becomes necessary precautions must be taken to prevent infection. Urotropin should be administered, and before each catheterization a glass catheter should be inserted part way, the urethra irrigated with half a pint of boric acid solution, then introduced into the bladder, the latter evacuated and then irrigated with one or two points additional of boric acid solution.

4. Cystocele.—Goffe criticises the principle upon which most operations for cystocele have been based as faulty, in that it merely removes the redundant tissues of the vagina without reaching the conditions which caused the lesion. The principle which he advocates consists in giving the bladder additional support from above, at the same time not neglecting the support from below. His method consists in making a transverse incision in front of the cervix, and another at right angles to it along the anterior vaginal wall. He then dissects the bladder entirely free from the vaginal wall and separates the vesicouterine attachment. He opens the anterior peritoneal pouch, spreads the redundant bladder over the face of the uterus and contiguous broad ligaments, and with median and lateral sutures attaches the bladder to the uterus and broad ligaments. He then removes the redundant vaginal tissue and fascia, stitches the later snugly over the newly disposed base of the bladder, and over this the resected vagina. He believes that under these new conditions relaxation of the vaginal wall and fascia will not take place. He has performed this operation between thirty and forty times with satisfactory results. He does not state whether this means that there have been no recurrences of prolapsed vagina.

5. Operative Treatment of Cystocele.—Child narrates the development of operative procedure on the prolapsed bladder beginning with the operation of Jobert. The effort among all operators until quite recently seemed to be to form a support for the base of the bladder, which would overcome the tendency of the latter to descend. Recent operators have endeavored to remove this tendency by more or less extensive dissection with attachment of the bladder above as well as supporting it below. Operations have also been suggested in which an opening was made in the inguinal canal, the prolapsed anterior vaginal wall being drawn upward and backward and secured to the

tissues, forming the wall of this canal, also operations in which the peritoneal cavity was opened by median abdominal incision, a flap of peritonæum dissected from the uterus and bladder, the latter elevated by pulling up the flap, and the flap stitched to the sheath of the rectus muscles.

7. **A Fatal Case of Eclampsia.**—Parnall draws the following conclusions: 1. Eclampsia is due to a toxæmia, the origin of which is not known, but which is probably of placental genesis. 2. Characteristic hepatic changes are not present in every case of the disease, and when occurring are probably secondary. 3. In rapidly fatal cases the kidneys as eliminative organs will probably be first affected by the poison and will show the chief changes in the epithelium of the distal portion of the proximal convoluted tubules. 4. Alterations in thyreoid gland function may be directly or indirectly responsible for the development of the toxæmic state resulting in eclampsia.

ANNALS OF SURGERY.

October, 1906.

1. Filariasis, By J. H. Cunningham, Jr.
2. The Radical Cure of Femoral Hernia. By W. H. Coley.
3. Cysts of the Urachus, By W. R. Weiser.
4. On the Value of the Indigo Carmine Test as an Aid in the Diagnosis of Partial and Total Ureteral Occlusion, By E. Beer.
5. Arteriovenous Anastomosis, By J. C. Hubbard.
6. Prostatectomy in Two Stages. A Conservative Operation with Minimum Hazard, By C. H. Chetwood.
7. The Female Prostate. An Anatomicosurgical Study, By C. E. Burnett.
8. Teratomata of the Inguinoscrotal Region. Including a Review of Reported Cases, By D. C. Hilton.
9. A Method of Drainage of the Ankle Joint, By P. R. Bolton.
10. Sarcoma and Myoma of the Stomach, By J. L. Yates.

1. **Filariasis.**—Cunningham says of this endemic parasitic disease that it is of surgical interest because of certain local manifestations produced by the parasites in the lymphatic system which may be benefited by surgical measures. The filaria nocturna is the variety which has for its natural habitat the lymphatic system of man. It is transmitted by the mosquito. The embryos are not harmful, and treatment should be directed toward killing or removing the parent worm. Methylene blue, thymol, benzoic acid, sodium benzoate, boric acid, and quinine have been recommended for its destruction. In hæmatochyluria irrigation of the bladder with 1 to 10,000 of bichloride of mercury, with boric acid and with adrenalin, have been successfully used, but medical treatment is only palliative of the symptoms caused by the disease. If the parent worm is in the thoracic duct, the pelvic or abdominal lymphatics, only rest, with elevation of the hips, restricted diet, and the use of diuretics and cathartics, can be employed. Operations for the removal of lymphatic varices and lymph adenoceles are objected to as (1) incomplete, (2) followed by lymphorrhagia and fistulæ, and (3) liable to result in septic infection. The author replies to these objections that symptoms may be cured even if the filaria is not found in the excised mass. When the worms are really removed the patient is cured.

3. **Cysts of the Urachus.**—Weiser finds the literature of this subject meagre. He quotes Wutz as saying that prior to the latter's article in 1883 no large clinically important cyst of this character had been reported. Those which Wutz found reported, as urachal cysts, did not exceed a bean in size, and had the following characteristics: 1. All were seated in the lower third or fourth of the space between the navel and the vertex of the bladder, and proceeded from the normal persistent portion of the urachal canal. 2. The majority of them had stratified pavement epithelium. 3. All had a more or less pronounced envelope of smooth muscle fibres. 4. They varied in size from very minute to the dimensions of a bean. Wutz and Doran doubt the existence of tumors of this character of any considerable size. The author reports three cases of considerable size, which dipped toward and were adherent to the pelvic viscera. They were extraperitoneal, and had attachment to the bladder so that the diagnosis could not be questioned. The treatment consists of incision and drainage with extirpation, if possible, if the latter is impossible the interior of the sac should be thoroughly cauterized with tincture of iodine.

9. **A Method of Drainage of the Ankle Joint.**—Bolton was led to study the subject of drainage for injuries of the ankle after very unpleasant experience which resulted in more than one instance, in the necessity for amputating the leg. The old plan of drainage consisted in passing tubes through the site of injury and through counter openings in the joint at points at which the synovial sac could be readily tapped. The problem was to so permit access to both synovial sac of the joint that the joint could be thoroughly cleaned and drained. This seemed possible if the astragalus were removed, for in any event the resultant condition would be as good as a stiff and tender ankle. This plan has been tried by the author in a number of instances, and in no case has there been a subsequent cellulitis, neither has it been necessary, in any case, to amputate the leg.

THE JOURNAL OF NERVOUS AND MENTAL DISEASE.

November, 1906.

1. The Cerebral Element in the Reflexes, and Its Relation to the Spinal Element, By G. L. Walton and W. E. Paul.
2. Case of Landry's Paralysis, with Recovery, By Wharton Sinkler.
3. Limited Area of Anæsthesia, Epileptiform Attacks of Hemialgesia, and Early Muscular Atrophy in a Case of Brain Tumor, By Morton Prince.
4. Sexual Infantilism with Optic Atrophy in Cases of Tumor Affecting the Hypophysis Cerebri, By Harvey Cushing.

1. **The Cerebral Element in the Reflexes, and Its Relation to the Spinal Element.**—Walton and Paul discuss the theories of the seat of the so called reflex mechanism. They express their opinion that the deep reflex is a resultant of the activity of cerebral and spinal arcs, the longer arcs tending to produce a deliberate and moderate reflex, the shorter arcs an active and violent reflex. It varies in healthy individuals and in the neuropsychoses according to the predominant influence of the longer or shorter arcs. In disease of organic origin the partial withdrawal of the higher influence causes the spinal type of deep reflex, but the complete withdrawal of the higher influence causes abolition of the deep reflexes, since the spinal arc alone is incapable (in man) of sustaining the burden. Upon reestablishment of the higher influence the reflexes return, the spinal type predominating if the reestablishment is partial, the normal type if it is complete. Initial lessening or loss of deep reflex in the paralyzed parts is the rule in apoplexy. This condition persists for a period varying from half an hour to a number of days, after which these reflexes become normal or assume the spinal (exaggerated) type according as the return of cerebral influence has been complete or partial. In the exceptional cases of apoplexy with initial exaggeration of deep reflexes the withdrawal of cerebral influence has been from the first incomplete. The superficial reflexes, like the deep, have a cerebral control, and disappear on withdrawal of that control. The fact that they do not become exaggerated in disease of the pyramidal tract shows that they have little if any spinal representation. The control of the Babinski reflex more nearly approximates that of the deep than that of the superficial reflexes.

4. **Sexual Infantilism with Optic Atrophy in Cases of Tumor Affecting the Hypophysis Cerebri.**—Cushing reports two such cases, both patients being operated upon. It shows that a disturbance of menstrual function may be one of the earliest symptoms of a certain class of intracranial tumors. Such cases may be divided into two groups: One, those in which amenorrhœa accompanies tumors arising from the hypophysis or affecting the pituitary gland by direct compression; the other, those in which menstrual disturbances is a symptom of tumors situated elsewhere. Similar lesions occur in the male, where instances of hypoplasia of the genital organs associated with hypophyseal tumors have been recorded. If, as in these two patients, the sexual infantilism is associated with amenorrhœa, this symptom, together with optic atrophy and severe headaches, may suffice, in the female to make a diagnosis reasonably certain. In the male sex a corresponding condition may be present. The author's two cases and the cases on record tend to show certain evidences, hard to describe, of nutritional disturbance, with an abundant development of subcutaneous fat. In the first case the diagnosis could be certified by an autopsy, which showed that a slowly growing, congenital, intracranial tumor, mesially placed and so situated as to compress the hypophysis cerebri, had for years given no symptoms (barring an occasional headache) other than a retardation of sexual development accompanied by some obscure nutritional disturbances. The rather acute onset of intracranial symptoms, with rapid formation of bilateral choked disc, was in all probability due to the final production of an internal hydrocephalus consequent upon the projection of the tumor into the third ventricle.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN OBSTETRICS AND GYNÆCOLOGY.

Meeting of May 24, 1906.

Dr. ARNOLD STURMDORF, Chairman.

A General Discussion on the Management of Occipitoposterior Positions was opened by Dr. GEORGE L. BRODHEAD (see page 919 et seq).

Dr. MALCOLM MCLEAN said there was one point in regard to the causation of persistent occipitoposterior positions to which he had frequently called attention in the past, and which he thought could not be too strongly emphasized. In these cases of protracted labor, with inefficient, nagging pains, which exhausted the woman before the head became engaged in the superior strait, he had invariably found, after many years' experience and observation, that the persistent malposition of the head was often due to the umbilical cord, the cord being shortened by being passed around the neck and shoulder on the side toward which the occiput was turned posteriorly. Consequently, in attemptaing to correct the malposition, the shoulder should be borne in mind, and in a certain proportion of cases it would be found much easier to rotate the occiput from the right sacroiliac synchondrosis all the way around to the left anterior plane than to the right.

Dr. JOHN O. POLAK, of Brooklyn, said that, aside from the cause of persistent occipitoposterior positions referred to by Dr. McLean, he was inclined to believe that the chief cause of the malposition was a slight disproportion between the size of the head and that of the pelvis, and he suspected that condition in every case where the head did not engage well in the brim of the pelvis. The persistent occipitoposterior position presupposed imperfect flexion, not only above the brim, but also when the head entered the pelvis, because in order to secure perfect flexion, perfect adjustment of the parts was necessary. Furthermore, the powers must be good and the passages in a normal condition.

Dr. Polak said the treatment of this malposition depended on whether the head was above or below the brim, and whether the membranes were ruptured or intact. Where the membranes were unruptured, it was necessary, in order to get the best flexion, to preserve the membranes as long as possible. The flexion could be best obtained by posture, and the membranes could be best preserved by the use of the colpeurynter. Dilatation was imperative if the operator wished to save the life of the child. In some instances the speaker had resorted to the old fashioned method of packing the vagina. Those cases in which the head did not freely enter the pelvis were best treated by version. Where the parts were fully dilated, and either before rupture of the membranes or soon afterward, version gave a better chance for the child in the hands of men of equal skill than the use of the forceps did. Personally, Dr. Polak had been very unfortunate in these high forceps cases, the infants dying from cerebral injury. When the head had engaged in the pelvis, he believed that the application of the forceps with rotary motion was perhaps better than that of the axis traction forceps. The application of the forceps with the pelvic curve reversed he considered extremely dangerous, except in the hands of the most skilled. In order to convert these cases into anterior positions, it was necessary to turn not only the head, but also the body. For the past four or five years the speaker had given up attempting to rotate in these cases where the head did not engage, and had substituted podalic version.

Dr. S. MARX thought that cases of persistent occipitoposterior positions were exceedingly frequent, and that the less they were handled and the less that was done within certain limitations, the better would be the outcome of the cases. The classification given by Dr. Brodhead was one that he had been using for many years, and he regarded it as the best, namely, those with the head above the brim, with the head engaged, and with the head in the outlet. The most important point in connection with these cases was the diagnosis, which could be made in the majority of cases. Given a case of tardy labor lasting a number of hours, and you had either to deal with a posterior occipital position or a pelvis that was rather small. It was the duty of the obstetrician to satisfy himself as to the position of the head, and that he was not dealing with a pelvis that was either relatively or absolutely contracted.

In regard to his own treatment of these cases, he always first tried the postural position, placing the woman on the side corresponding to the occiput. This measure, in a large number of cases, gave normal rotation and a normal expulsion of the child.

The reader of the paper, Dr. Marx said, showed a decided preference for the use of the forceps above the brim. Personally, the speaker said, in those cases where he failed to get engagement, and where there was a positive contraindication to the performance of version, and where the child was in good condition, then and then only would he countenance a high forceps operation. He looked upon it as one of the most dangerous operations in labor as well as a most fatiguing one. In cases where he could not perform version, and where he could not extract a living child, he preferred craniotomy. Where it was necessary to operate, it was safest to do a natural or artificial rotation by means of the axis traction forceps, but that should be limited to those rare cases where the head showed no tendency to rotate. He had yet to see the first case where he was convinced that the position of the cord was a material factor in preventing the anterior rotation of the occiput. He regarded incomplete flexion as the primary cause of the malposition.

Dr. FRANKLIN A. DORMAN said that from a careful review of his obstetric cases he was convinced that

fully one half were examples of the right occipitoposterior position, while the left was one of the rarest complications of pregnancy that he had ever seen. He had been rather surprised to hear that the occipitoposterior position should be regarded as a common source of dystocia before the head was engaged. If the head was not engaged, there was some other cause, such as a disparity between the size of the head and that of the pelvis, that kept the head in that position. In certain cases the explanation offered by Dr. McLean might be the correct one. Where the head did not engage in the brim, and was in the occipitoposterior position, the speaker had ceased to regard the posterior position as the cause of the nonengagement of the head. His routine method of treatment had been to disregard the posterior position of the head, and attempt the high forceps operation. Very delicate traction should be resorted to, and the operator could learn very quickly whether the head would fit the pelvis or not. If not, he should give up the use of the forceps and try something else, such as perforation.

Dr. Dorman agreed essentially to the methods of treatment outlined by the reader of the paper. There was one manipulation that he had not heard suggested, and which he had found helpful in some cases, namely, the introduction, posteriorly, of the right blade of the solid forceps.

Dr. Halsey said that most of the cases he had seen were not of the severe type, especially those where the head had not engaged. In most of his cases he had followed the procedure described by Dr. Marx, allowing the case to go on as long as possible, and then, when it became necessary resorting to version. The speaker emphasized the importance of an accurate, diagnosis in these cases.

Dr. Brodhead said he could not recall any instance of occipitoposterior position where the cord had anything to do with the failure of rotation. He was opposed to the use of the forceps as a rotator when the head was above the brim, using the forceps for traction, pure and simple, and he believed the head should be brought down to the pelvic floor before any rotating was done. He never applied the forceps in the inverted position. He had never found it necessary, in rotating, to resort to manipulation of the body, but if it could be done, he supposed it would be of advantage in a certain number of cases.

Noninterference, upon which Dr. Marx had laid such stress, was very important, and a primipara should be allowed more time than a multipara. As Dr. Marx had stated, there were many women who lost their lives each year because version or the forceps was resorted to in these cases, instead of perforation. The speaker agreed with Dr. Dorman that the posterior position was not in all cases responsible for the nonengagement of the head. In his experience, the left occipitoposterior position was not so rare, two cases having been seen in the last ten days.

Dr. Brodhead said he had tried version a good many times with a considerable fœtal mortality, and he could not accept the statement that podalic version was the simplest way of dealing with this form of malposition. In using forceps he preferred doing either rotation or traction, but not both together.

Book Notices.

Physiologie und Pathologie des Mineralstoffwechsels, nebst Tabellen über die Mineralstoffzusammensetzung der menschlichen Nahrungs und Genussmittel sowie der Mineralbrunnen und Bäder. Von Dr. Albert Albu, Privatdozent für innere Medizin an der Universität zu Berlin, und Dr. Carl Neuberg, Privatdozent u. chemischer Assistent am Pathologischen Institut der Universität, Berlin. Berlin: Julius Springer, 1906. Pp. 150.

Within recent years studies on metabolism have been numerous and far reaching both from the standpoint of pure chemistry and from that of its applications in practical medicine. It is natural that the earliest studies should have been made in the inorganic substances of the body, yielding as they do more readily to exact technical methods. Thus it has come about that many of the early researches have become somewhat antiquated, particularly with reference to interpretation, rather than as to method, since more precise physicochemical methods are now in vogue.

This has necessitated an entire revising of our knowledge concerning the metabolism of the inorganic constituents of the human body, especially in their relations to disease, and it is the function of the work before us to present these newer findings with the inferences that may be drawn from them. To this is added a series of tables giving modern analyses of the percentage composition of the more widely used foods with reference to their inorganic constituents.

That there are rich stores of useful medical information lying outside of the ordinary fields of fat, carbohydrate and protein metabolism is made evident by this small volume, and it can be heartily commended to the student of medicine who retains a hold on his knowledge of chemistry.

Die Verwundungen durch die modernen Kriegsfeuerwaffen, ihre Prognose und Therapie im Felde. Von Stabsarzt Dr. Hildebrandt, Assistenzarzt der chirurgischen Klinik der Charité. Vol. I. Berlin: August Hirschwald, 1906. Pp. 278.

The basis of this work is the experience gained by the author in two campaigns—that of the Boer war and the international expedition to China. This experience, wide as it is, has been still further enriched by the author's participation in various experiments with firearms and by the opportunities afforded him by the surgical museum of the Kaiser Wilhelm's Akademie and the surgical clinic of the Charité in Berlin. The volume before us is divided into two parts; the first deals with the various kinds of firearms and their effects, more especially as produced by the projectiles of small calibre, now universally adopted by the great military powers; while the second is devoted to a discussion of the wounds produced by modern firearms, great and small alike. In carrying out the difficult and complicated task involved in such a comprehensive exposition, Dr. Hildebrandt has spared neither time nor pains. Beginning with the introduction of gunpowder into Europe, he traces the development of firearms from the first crude firelocks and rickety cannon down through the centuries to the culmination of ballistic science in the small calibre rifle, smokeless powder, and the giant artillery of modern times. This is a fascinating chapter in human ingenuity, and affords an indispensable prelude to the discussion of the injuries caused by projectiles, both great and small.

Passing from these mechanical preliminaries to the second portion of the work, we find the symptomatology and pathology of the wounds produced by the firearms of the present day discussed with the most painstaking particularity. Injuries of bones (crush, fracture, penetration), joints, muscles, internal organs, and the nervous system, all are treated of in a manner at once scientific and practical. The phenomena dependent upon disturbance of the nervous system—pain, shock, etc.—are anaylzed with rare subtlety; while the manifold injuries described are made comprehensible to even the least discerning reader by more than a hundred illustrations—radiographs many of them—of the highest scientific import.

When to this it is added that the book is written in

a style singularly compact and lucid; that there is a total absence of clumsy trespass upon language, of foggy groping for precision, of those interminable relatives, of that welter of qualifying clauses, a ponderous mechanism, but too frequently invoked by medical writers, one feels that commendation is doubly justified. It is to be hoped that an English translation of this excellent work may soon be brought out; a French one, we understand, is already in the making.

A Textbook of Genitourinary Diseases, Including Functional Sexual Disorders in Men. By Dr. LEOPOLD CASPER, Professor in the University of Berlin. Translated and Edited, with Additions, by CHARLES W. BONNEY, B. L., M. D., Assistant Demonstrator of Anatomy, Jefferson Medical College, etc. Philadelphia: P. Blakiston's Son & Co., 1906. (Price, $6.00.)

Casper's name easily stands at the head of his special branch in Germany, and his writings have a world wide authority. Dr. Bonney's translation of his textbook, which places it at the command of the English speaking physician, must be acclaimed with satisfaction.

The work deals with genitourinary diseases only, and does not include the purely venereal disease, syphilis, and it does not speak of genitourinary disease in women. The translation has been augmented by editorial notes in brackets and by a number of new illustrations.

The translating has been most carefully and satisfactorily performed. The English text reads unusually smoothly for a translation from the German. But it is one thing to translate a book, and quite another to make a foreign work available to the American reader by such editing and annotation as would tend to give due prominence to subjects in which our urologists are especially interested and to the urological and surgical writers whose methods are current with us, and this has not been done, in the present translation, so fully as might have been wished.

In the chapter on the treatment of urethritis—that pons asinorum of the urologist—we find half a page devoted to Janet's method, and scarcely a sentence is allotted to the modern silver compounds in the treatment of the acute form, while thalline sulphate, a practically discarded remedy, is recommended as the best nonirritant urethral antiseptic. We find no heading for the treatment of the acute posterior form, but without any explanation to the student a few words are said about it under cystitis colli (page 109).

Casper's original text describes several cystoscopes now scarcely used, such as Guterbock's, Boisseau de Rocher', etc. To these Dr. Bonney adds in brackets brief notes on Belfield's, Bransford Lewis's, and Otis's cystoscopes. Nothing is said of Tilden Brown's instrument, which is widely used in this country in ureteral catheterism, or of Ayre's direct catheterizing instrument, which is an important one for American students to know about. The electroscope of Casper is scarcely used now by any surgeon for urethroscopy, and yet this is the only instrument for this purpose which the book describes. The urethroscopes which everybody is using in this country are not even mentioned.

In the section on the prostate, which has been rewritten by Casper with the collaboration of the translator, a more complete presentation is given, and the work of American surgeons is duly credited. A number of illustrations from Deaver's and from Young's works are included here. It is astonishing, in view of Casper's magnificent work in this line, to find the subject of functional renal diagnosis so briefly passed over (pages 445, *et seq.*). Many of the illustrations have suffered considerably in the process of reproduction, but a number of new ones have been added in this edition, and they are well selected and well drawn.

The defects we have pointed out do not change the fact that the book is one of great merit, like everything Casper writes, and we can only express the hope that the necessary additions will be made in a future edition of the English version.

Miscellany.

New Magnetic Compounds.—According to the *British and Colonial Druggist,* Professor E. Wedekind, of Tübingen, has been investigating the compounds of manganese, which exhibit the phenomenon of magnetism, embodying his results in a paper read at Stuttgart during the annual meeting of German savants just held there. The magnetic property is most pronounced in certain compounds formed at very high temperature, an interesting example being the body magnesium bismuth, which is strongly magnetic, this fact being remarkable in presence of the diamagnetic character of bismuth; a nitride prepared at the temperature of the oxyhydrogen flame from manganese and ammonia gas, a boride, an antimonide, and the chloride, also show the same property in varying degree. A magnetic chromium compound has been discovered—viz., the boride chromium boron.—*American Druggist and Pharmaceutical Record,* October 29, 1906.

The Dissections of Brain.—It may not be generally known that all over the civilized world there is a strong demand for brains that are a little above the average in quality; not intelligence, or intellect, or genius, but, literally, that part of the human organism which is contained within the skull and is known as the brain Scientists who devote themselves to the study of comparative anatomy have for the most part nothing better to dissect than the brains of paupers and lunatics. These, however, leave much to be desired, and it is to the interest of the human family that the brains of cultured and learned people should be placed at the disposal of those patient and laborious men who are engaged in the vastly important work of unraveling the secrets of the working of the mind. But it must not be supposed that a certain number of such brains are not forthcoming. Comparatively speaking, there are few, but, still, more numerous than most people imagine. In the great majority of cases they are bequeathed by their respective owners. On one occasion Sir William Fowler, the famous authority on comparative anatomy, in addressing an audience of cultured men and women, spoke of the difficulties he and his fellow workers had to contend with in having little else than the brains of people of low intellect to dissect, and went so far as to appeal to the audience to help science in this matter in the only possible way. On the conclusion of his address several members of the audience, including a few ladies, promised to bequeath their brains to him, and, it is said, proved as good as their word. More than one man of great eminence has regarded it as something in the nature of a duty to do this in the interest of science. Professor Goldwin Smith, for instance, some time ago formally willed his brain to Cornell University. Some remarkable brains have been sold, not given. An Englishman who calls himself Datas has disposed of his to an American university for $10,000. He is a man of little education, and for many years worked as a coal miner. But he has a marvellous memory, especially for dates, and is now earning a handsome income on the music hall stage. Any member of the audience may ask him the date of some occurrence, and is answered instantly. It is considered that his brain must show some very unusual development, and there was not a little bidding to secure it after death. It stands to reason that the brain of a man of intellect offers a much richer field for observation than the brain of a

pauper or some other human derelict. The brains of great men vary very much; more, in fact, than do those of nonentities. It is found that men of encyclopædic mind have large and heavy brains—Gladstone had to wear a very big hat—with an enormous bed of gray matter and numerous convolutions: on the other hand, men whose genius is concentrated upon one line of thought are of small brain and, consequently, have a small head. Newton, Byron, and Cromwell belonged to this class, and each had a small head. Yet many people imagine that this is a sign of small mental capacity. A visitor who was shown the skull of Cromwell was so disappointed at its size, that the caretaker of the relic endeavored to console him by saying that this was the skull of the great Roundhead when he was a boy. Professor Symes-Thompson told this anecdote in a recent lecture, and he also mentioned that Newton was so small when born that he could be put inside a quart pot.—Charles Stirrup, in the *Scientific American.*

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending November 9, 1906:

Smallpox—United States.

Places.	Date.	Cases.	Deaths.
California—San Francisco	Oct. 13-20	1	
Illinois—Galesburg	Oct. 13-27	15	
Missouri—St. Joseph	Oct. 6-13	2	
New York—New York	Oct. 13-20	2	
Texas—Houston	Oct. 13-20	1	
Wisconsin—Appleton	Oct. 13-27	2	

Smallpox—Foreign.

Brazil—Bahia	Sept. 13-22	1	
Brazil—Pernambuco	Sept. 1-30		11
Brazil—Rio de Janeiro	Sept. 16-30	5	
Chile—Antofagasta	Aug. 29-Sept. 12	18	2
Chile—Coquimbo	Aug. 24	Present.	
Colombia—Cartagena	Sept. 8-15	Present.	
	Sept. 22-29	5	
France—Paris	Oct. 6-13	3	
India—Calcutta	Sept. 8-15		3
India—Madras	Sept. 8-14		1
Russia—St. Petersburg	Sept. 15-29	5	1
Spain—Barcelona	Oct. 1-10	8	
Spain—Cadiz	Sept. 1-30	7	
India—Madras	Sept. 22-28		1
Russia—St. Petersburg	Sept. 15-29	5	1
Spain—Barcelona	Oct. 1-10	8	
Spain—Cadiz	Sept. 1-30	7	

Yellow Fever—Foreign.

Brazil—Rio de Janeiro	Sept. 23-30	1	1
Costa Rica—Limon	Oct. 12	1	*
Cuba—Cruces, vicinity of	Oct. 24		1
Cuba—Habana	Oct. 26-30	5	
Mexico—Merida	Oct. 7-13	2	

Cholera—Insular.

Philippine Islands—Manila	Sept. 2-9	27	24
Philippine Islands—Provinces	Sept. 2-9	189	146

Cholera—Foreign.

China—Shanghai	Sept. 15-22	1	
India—Calcutta	Sept. 8-15		15
India—Madras	Sept. 8-14		131

Plague—Foreign.

Brazil—Pernambuco	Sept. 1-30		14
Brazil—Rio de Janeiro	Sept. 16-30	19	5
Brazil—Sao Paulo	Sept. 16-23		1
Egypt—Alexandria	Sept. 29-Oct. 11	8	4
Egypt—Suez	Sept. 29-Oct. 11	13	10
India—Calcutta	Sept. 8-15		8
Turkey—Adalia	Sept. 20-23	3	
Peru—Lambayeque	Sept. 11		1
Peru—Lima	Sept. 5	1	
Peru—Trujillo	Sept. 5	3	

* Imported from Cartagena on Ss. *Prince Waldemar.*

Public Health and Marine Hospital Service:

List of Changes of Station and Duties of Commissioned and Noncommissioned Officers of the Public Health and Marine Hospital Service, for the seven days ending October 31, 1906:

ANDERSON, J. F., Passed Assistant Surgeon. Leave of absence granted Passed Assistant Surgeon Anderson for one month, from November 5th, amended so as to be effective October 29, 1906.

BLUE, RUPERT, Passed Assistant Surgeon. Directed to report to the Bureau for instructions relative to the inspection of certain stations of the Service in the State of Virginia.

BROOKS, S. D., Surgeon. Detailed as inspector of unserviceable property at San Diego Quarantine Station.

CARMICHAEL, D. A., Surgeon. Granted leave of absence for sixteen days, from November 14, 1906.

COLLINS, C. L., Assistant Surgeon. Directed to proceed to Norfolk, Va., for special temporary duty, upon completion of which to rejoin his station at Cape Charles Quarantine Station.

EAGER, J. M., Assistant Surgeon General. Granted leave of absence for fourteen days, from October 26, 1906.

FROST, W. H., Assistant Surgeon. Relieved from duty on U. S. Revenue Cutter *Chase,* and assigned to duty at the Revenue Cutter Service School of Instruction, Arundel Cove, Md.

GRUBBS, S. B., Passed Assistant Surgeon. Granted leave of absence for one day, October 30, 1906.

MCCORMAC, J. T., Acting Assistant Surgeon. Granted leave of absence on account of sickness for thirty days, from September 17, 1906.

RICHARDSON, S. W., Pharmacist. Granted leave of absence for four days, from October 24, 1906, under provisions of Paragraph 210 of the Regulations.

STIMSON, A. M., Assistant Surgeon. Granted leave of absence for seven days, from October 29, 1906, under Paragraph 191 of the Regulations.

STONER, GEORGE W., Surgeon. Directed to proceed to Charleston, S. C., for special temporary duty, upon completion of which to rejoin his station at Ellis Island, N. Y.

THORNTON, M. J., Acting Assistant Surgeon. Granted leave of absence for fourteen days, from November 7, 1906.

WETMORE, W. O., Acting Assistant Surgeon. Granted leave of absence for six days, from October 24, 1906.

WILLE, C. W., Passed Assistant Surgeon. Directed to proceed to Scranton, Miss., for special temporary duty, upon completion of which to rejoin his station at Gulf Quarantine Station.

WILLIAMS, L. L., Surgeon. Granted leave of absence for seven days, from October 30, 1906, under Paragraph 189 of the Regulations.

Appointment.

George K. Hepler appointed pharmacist of the Third Class, effective from date of oath.

Boards Convened.

A board of medical officers was convened to meet at Washington, D. C., on November 5, 1906, for the physical examination of officers of the Revenue Cutter Service. Detail for the board: Assistant Surgeon General W. J. Pettus, Chairman; Assistant Surgeon General J. W. Kerr, Recorder.

A board of medical officers was convened to meet at San Francisco, Cal., on November 1, 1906, for the purpose of making physical examinations of applicants for cadetships in the Revenue Cutter Service. Detail for the board: Surgeon H. W. Austin, Chairman; Assistant Surgeon F. H. McKeon, Recorder.

A board of medical officers was convened to meet at Seattle, Wash., on November 1, 1906, for the purpose of making physical examinations of applicants for cadetships in the Revenue Cutter Service. Detail for the board: Assistant Surgeon H. G. Ebert, Chairman; Acting Assistant Surgeon F. R. Underwood, Recorder.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, for the week ending November 3, 1906:

COX, WALTER, Captain and Assistant Surgeon. Relieved from duty at Fort Reno, Okla., and ordered to Fort Sill, Okla., for duty.

DAVIDSON, WILSON T., Captain and Assistant Surgeon. Granted leave of absence for two months.

DUNCAN, WILLIAM A., First Lieutenant and Assistant Surgeon. Left Fort Logan, Colo., on leave of absence for one month.

EDGER, BENJAMIN J., JR., Captain and Assistant Surgeon. Assigned to duty at Fort Reno, Okla.

HOFF, JOHN VAN R., Colonel and Assistant Surgeon General. Left Headquarters, Department of the Missouri, Omaha, Neb., *en route* to Manila, P. I., for duty.

LEWIS, WILLIAM F., Captain and Assistant Surgeon. Ordered to Washington, D. C., for examination for promotion.

PALMER, FREDERICK W., First Lieutenant and Assistant Surgeon. Granted an extension of ten days to his leave of absence.

TALBOTT, EDWARD M., First Lieutenant and Assistant Surgeon. Left Fort Leavenworth, Kas., for duty in the field with 3rd Squadron, 10th Cavalry, from Fort Robinson, Neb.

The following named assistant surgeons have been advanced from the grade of first lieutenant to that of captain, from October 30, 1906: Perry L. Boyer, William R. Eastman, James F. Hall, R. F. Metcalfe, Reuben B. Miller, James M. Phalen, Charles A. Ragan, and Edwin W. Rich.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy for the week ending November 3, 1906:

BOGAN, F. M., Passed Assistant Surgeon. Discharged from treatment at the Naval Hospital, Washington, D. C., and granted leave of absence for three months.

BUCHER, W. H., Surgeon. Detached from duty at the Naval Recruiting Station, Providence, R. I., and ordered to duty at the Naval Hospital, Boston.

BYRNES, J. C., Medical Inspector. Commissioned a medical inspector in the Navy, from October 7, 1906.

CURTIS, L. W., Surgeon. Ordered to the *Connecticut.*

DESSEZ, PAUL, Assistant Surgeon. Ordered to duty at the Marine Barracks, Washington, D. C.

ELY, C. F., Assistant Surgeon. Ordered to duty at the Naval Recruiting Station, Buffalo, N. Y.

FARWELL, W. G., Assistant Surgeon. Orders to the *Connecticut* revoked.

FIELD, J. G., Surgeon. Detached from temporary additional duty at the Marine Barracks, Washington, D. C.

FITTS, H. B., Surgeon. Detached from the *Lawton* and ordered to the *Buffalo.*

GROVE, W. B., Surgeon. Detached from duty at the Naval Hospital, Boston; granted leave of absence for twenty days and thence ordered to the *Iowa.*

HART, G. G., Acting Assistant Surgeon. Detached from duty at the Naval Recruiting Station, Buffalo, N. Y., and ordered to duty at the Naval Recruiting Station, Providence, R. I.

IDEN, J. H., Passed Assistant Surgeon. Detached from the *Newark,* when placed out of commission, and thence home to await orders.

LEACH, P., Surgeon. Detached from the *Indiana* and ordered home to await orders.

LUMSDEN, G. P., Surgeon. Detached from the *Minneapolis,* when placed out of commission, and thence home to await orders.

MEARS, J. B., Assistant Surgeon. Detached from the *Minneapolis,* when placed out of commission, and ordered home to await orders.

MOORE, J. M., Surgeon. Detached from the *Newark,* when placed out of commission, and ordered to the *Indiana.*

ODELL, H. E., Passed Assistant Surgeon. Detached from the *Wisconsin,* when placed out of commission, and ordered home to await orders.

PARKER, E. G., Surgeon. Ordered to the Naval Hospital, New York, N. Y.

PAYNE, J. H., JR., Passed Assistant Surgeon. Ordered to duty with the Marine Recruiting Party, Atlanta, Ga.

STRINE, H. F., Passed Assistant Surgeon. Detached from the Naval Hospital, New York, N. Y., and ordered to duty at the Naval Hospital, Newport, R. I.

ZALESKY, W. J., Assistant Surgeon. Detached from the *Newport,* when placed out of commission, and ordered to duty at the Naval Hospital, Portsmouth, N. H.

Births, Marriages, and Deaths.

Born.

SEELIG.—In St. Louis, on Friday, October 19th, to Dr. M. G. Seelig and Mrs. Seelig, a daughter.

THOMPSON.—In Charleston, South Carolina, on Tuesday, September 25th, to Dr. Edgar Thompson, United States Navy, and Mrs. Thompson, a son.

Married.

ANSPACH—MCCORMICK.—In Williamsport, Pennsylvania, on Thursday, November 1st, Dr. Brooke M. Anspach, of Philadelphia, and Miss Martha Brown McCormick.

BIENENSTOCK—EITELBERG.—In New York, on Sunday, October 28th, Dr. Abraham S. Bienenstock and Miss Dora Rebecca Eitelberg.

BRAYTON—MURRAY.—In Syracuse, N. Y., on Thursday, October 25th, Dr. Harry Jay Brayton and Miss Mabel Emily Murray.

HILL—HARRIS.—In Asbury Park, N. J., on Monday, October 29th, Dr. John A. Hill and Mrs. Alice Smith Harris.

RESSEQUIE—HANSON.—In Montclair, N. J., on Wednesday, October 24th, Dr. Frederick J. Ressequie and Miss Helen J. Hanson.

WERNER—LEIDLER.—In Philadelphia, on Wednesday, October 31, Dr. J. L. Werner and Miss Netty H. Leidler.

Died.

BLAKESLEE.—In St. Louis, on Wednesday, October 24th, Dr. O. E. Blakeslee, aged eighty years.

BROWN.—In Philadelphia, on Wednesday, October 31st, Dr. M. A. Brown.

BUCHER.—In Mount Joy, Pennsylvania, October 30th, Dr. Frederick C. Bucher, of Columbia.

COLEGROVE.—In Holland, N. Y., on Friday, October 19th, Dr. Clinton Colgrove, aged eighty years.

DAVIS.—In Fall River, Massachusetts, on Tuesday, October 30th, Dr. Robert F. Davis, aged eighty-three years.

FELSBERG.—In Atlantic City, N. J., on Sunday, October 28th, Dr. Paul Felsberg, aged thirty-seven years.

FOSTER.—In Laconia, New Hampshire, on Tuesday, October 24th, Dr. Timothy S. Foster, aged seventy-eight years.

GRUNDMAN.—In New York, on Tuesday, October 30th, Dr. Joseph Grundman, aged sixty years.

HALL.—In Medford, Massachusetts, on Friday, October 26th, Dr. Walter L. Hall, aged sixty years.

HARNE.—In Santee's Mill, Pennsylvania, on Thursday, November 1st, Dr. Frank H. Harne, aged fifty-four years.

HOPE.—In Montpelier, Virginia, on Friday, October 19th, Dr. John Hope.

HUDDER.—In Atlantic City, N. J., on Sunday, October 28th, Dr. A. L. Hudder.

KENYON.—In Taberg, N. Y., on Friday, October 26th, Dr. Orsman S. Kenyon, aged seventy years.

MCANDREW.—In Ypsilanti, Michigan, on Monday, October 29th, Dr. Helen McAndrew, aged eighty years.

NELSON.—In Bellefontaine, Missouri, on Thursday, October 25th, Dr. Hugh Nelson, aged seventy-nine years.

ROSENTHAL.—In Fort Wayne, Indiana, on Monday, October 29th, Dr. Isaac N. Rosenthal.

SHERIDAN.—In Montreal, Canada, on Tuesday, October 23rd, Dr. John Sheridan, aged sixty-one years.

STEVENSON.—In New York, on Saturday, October 27th, Dr. Thomas Stevenson, aged forty-one years.

THOMPSON.—In Opelousas, Louisiana, on Monday October 29th, Dr. William M. Thompson, aged fifty-six years.

VETTER.—In Belleville, Illinois, on Thursday, October 25th, Dr. Gustave Vetter, aged fifty-three years.

WALKER.—In Indianapolis, Indiana, on Sunday, October 28th, Dr. Isaac C. Walker, aged seventy-nine years.

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Original Communications.

AIDS TO ACCURACY AND EFFICIENCY IN RADIOTHERAPY.

BY HENRY G. PIFFARD, M. D., LL. D.,
New York,
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In the treatment of disease with drugs the balance and measures of capacity enable us to administer our medicaments with absolute certainty as to dosage. In radiotherapy, however, the case is different, as up to the present moment there are no means known to me whereby we can directly measure the energy that we expend on the tissues. The rays delivered by a tube in action are complex in character; and when those which are similar in character, the x rays proper, strike the skin with varying velocities, and consequently penetrate the tissues to varying depths; they then exert their biological influence probably in direct ratio to the measure of their absorption. During their passage through the tissues, however, they are parting with a portion of their initial energy, which is of course not lost, but simply converted into energy of another form. No man living can at the present moment furnish a comprehensive and complete account or explanation of the transmutations of energy that have taken place during the passage of the rays through a given thickness of tissue. Two broad facts, however, have been ascertained with reasonable certainty. First, the rays that have passed through a tissue possess less energy than those which impinged on it. Second, during their passage they give rise to a class of rays differing greatly in their physical properties from the original radiation. These have been especially studied by Sagnac, and have been called after his name; but are more commonly spoken of as the *secondary* rays.

We know, further, that a given tube will, under varying conditions of vacuum or varying degrees of energization, deliver rays that vary in their ability to penetrate different thicknesses of a given impediment; and the clever device of Benoist enables us to ascertain the maximum penetration of the rays which issue from the tube. It is of course understood that the radiochromometer is not a measure of the average penetration of the rays, but simply indicates the existence of certain rays which are capable of going through a certain thickness of aluminum, making their presence manifest by fluorescence or their reducing action on photographic plates.

Practically the radiochrometer simply indicates that the tube we are testing furnishes some rays which are capable of penetrating a given distance, but it does not give us any clue to the ratio or proportion of the rays of varying penetrating power. In routine clinical work, however, we can get practically the same information by means of the parallel spark gap. We still lack, however, some device whereby we can estimate the relative proportion of *soft* (easily absorbed) rays to the *hard* (very penetrating) ones that together make up the mass of the radiation. We know it is true, that with a given initial energy (output of the coil) a tube in which the vacuum is low as measured with the spark gap, will yield a larger quantity of rays than one in which the opposite condition prevails, and that the total radiation will consist of a larger proportion of absorbable rays than in the second case. We also know that a tube fluorescing yellow will yield a larger proportion of soft rays than one fluorescing green. These are but rough means of estimating the quality of the radiation, but they are the ones chiefly relied on, I believe, by the majority of experienced operators in this country.[1] If for any reason one desires to make an accurate record of the quality of the ray the Benoist may be employed fluoroscopically or photographically. Personally, when inspection of the fluorescence of the tube leaves me in doubt, a hasty examination of a bone, such as the lower end of the humerus mounted on a shielded handle, will in an instant furnish the required information.

The object of determining the quality of the radiation is to enable us to localize the sphere of action; that is, to select such a radiation as shall expend the greater part of its energy within the depths that we desire to affect.

Having settled the question as to the character of the ray, the next point is to determine the quality of the selected radiation to be employed to effect a given result. It must be sufficient to accomplish the purpose, due regard being had to the necessity of keeping within the bounds of safety to the patient.

To accomplish this we must have some means of measuring the quantity of radiation delivered by the tube in a given unit of time. A number of devices for accomplishing this have been

[1] I exclude from consideration a very large number of "radiotherapeutists" who neglect, or are ignorant of, all guides, and who simply adjust the tube on the patient, push the button, and then let chance or fortune do the rest.

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brought forward. One of the earliest of these, and the one to which reference is most frequently made, is *Holtzknecht's chromoradiometer*. This consists in exposing a certain secret chemical compound or mixture to the rays, and then comparing the color changes that ensue with an arbitrary color scale. Personally, I have never placed much confidence in it, and have never used it; and I understand that, owing to its unreliability, it has been withdrawn from sale. To the same class belong the pastilles of Sabouraud and Noiré. These are prepared with platinocyanide of barium and change from yellow to brown under the influence of the rays. At the present time they are the chief reliance in Paris and appear to have given general satisfaction. My own experience with them last summer, however, does not compare favorably with the French reports. This also appears to be the case in London. As regards this point, the editor of the *Archives of the Röntgen Ray* in a recent number (April, 1906), writes as follows:

In this climate Sabouraud's discs are far from satisfactory. Indeed, a word of warning may be given on this subject to those who rely entirely on this means of measurement. Sabouraud's indications are only reliable under Sabouraud's conditions—i. e., with the French focus tube and the French conditions of temperature, dryness of air, etc. We may expect to hear of serious accidents if these factors are not taken into account. It must be remembered that the change of color in the platinocyanide test is due to dehydration, and is therefore dependent on temperature and atmospheric conditions of humidity and ionization. Moreover, the intensity of the reaction of the blonder English skin probably differs greatly from that of the more pigmented Latin races, and observations made in Paris may require to be modified in London.

In New York, from June to the middle of September, the hygrometer (wet and dry bulb) frequently registers from 80° to 95° for days and sometimes weeks together, and this doubtless accounts in a measure for my own nonsuccess with the Sabouraud device. Solutions of iodoform in chloroform have also been recommended. I have not succeeded in using them to advantage. Another radiotherapeutist subjects a small piece of photographic (developing) paper, protected from light, to the rays for a short time and then develops the paper. The various bromide and Velox papers are adapted to this purpose.

In connection with these various procedures we must bear in mind two facts: First, the personal equation enters very largely into the success of the method, and the inventor of it can usually obtain better results than those who with a less thorough study of the matter seek to carry it out in perhaps a less perfect manner. Second, there is no positive evidence that the chemical and actinic effects are commensurate with the biological reactions.

The methods thus far mentioned originated on the other side of the big pond, but turning to our own country, we find ourselves on a little firmer ground. I refer to the *Franklin electroscope* (*New York Medical Journal*, April 22, 1905) by the aid of which the ionizing effects of the rays can be measured with mathematical accuracy. This appliance seems to have met with some favor in England. Thus far, however, no unit of measurement has been established, and there is no known positive ratio between the ionizing and biological effects.

Lastly, the milliampèremeter, introduced by Gaiffe, of Paris, claims our attention. The advantages of the instrument used in connection with the Gaiffe x ray installation are fully set forth in Belot's *Radiotherapy in Skin Disease*. The meter must be of the magnetic (not hot wire) type, and gives valuable indications only when used with a unidirectional current, and in connection with a definite spark gap. The meter simply indicates the amount of the current passing through the tube, from which is deduced the amount of x radiation given off.

As the current from the static machine is unidirectional the meter may be used to advantage, care being taken to keep the vacuum of the tube constant by means of suitable regulators. If this is not done, the rising vacuum introduces added resistance on the circuit, and sparks may pass between the prime conductors. When this occurs, the efficiency of rays is diminished. Increasing the gap tends to increase the efficiency of the machine, but at the same time alters the character of the radiation.

When a tube is actuated by a coil, however, we have an oscillating current to deal with, which adds certain complications to the procedure, and the readings of the meter cannot be relied on for accurate information, unless certain special appliances are employed to overcome the difficulty.

When we close the circuit of a coil, a current flashes from one pole to the other. This is the *make* current. Instantly the interrupter breaks the circuit, and a current, usually stronger, flashes back. this is the *break* current. This alternation or oscillation of the current occurs with every interruption of the circuit, and there may be hundreds or thousands per minute. In x ray work, it is the break or *direct* current that we desire to utilize, and the make or *inverse* current that we desire to get rid of. These two currents will vary in their relations to each other, according to the construction of the coil, and the character of the interrupter. When an x ray tube is in circuit this, too, may modify the respective intensities of the two currents. With most tubes an inverse current can be readily detected, usually much weaker than the direct. With some other tubes, hardly any inverse can be noticed. I have met with one tube, however, in which the inverse current was markedly stronger than the direct. The inverse current is objectionable on three grounds: (1) It interferes with the efficiency of the tube; (2) it modifies the reading of the milliampèremeter; (3) it is a source of grave danger to the operator.[2]

These difficulties, however, are far from being insurmountable. The motto of the old cookbook: First catch your hare, may be paraphrased into: First detect the inversion or estimate its degree. This is readily effected by means of an oscilloscope. This simple little device consists of a vacuum tube nine or ten inches long and an

[2] I have elsewhere (*New York Medical Journal*, January 6, 1906) considered this third point.

inch or more in diameter. Sealed into the ends are electrodes extending nearly to the middle, being separated from each other by a gap of about a tenth of an inch. When the tube is connected to the terminals of the coil, and the current passes, a bright glow will surround the electrode nearest the negative side of the coil, while the positive terminal will be free from it. In a unidirectional current the glow persists on one of the terminals, but as the coil current is alternating we find in practice that for an inch or more both terminals will glow, due to the fact that they each in turn become negative, and the alternations are of such frequency that the eye cannot separate them. The extent of the flow may be approximately equal on each side, or one may be much shorter than the other. The fact of the double glow indicates the existence of the inverse current.[3]

The appearance of the oscilloscope under these conditions is shown in Fig. 1.

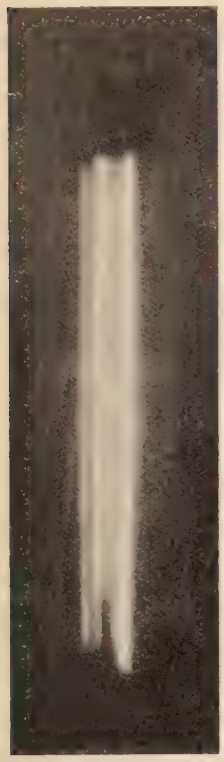

Fig. 1.—Photograph of the terminals of an oscilloscope, showing glow on both sides of the gap.

Fig. 2.—Photograph of the terminals of an oscilloscope in series with a valve, showing the glow on only one side of the gap.

For my first oscilloscope, I am indebted to the courtesy of Mr. Clarence A. Wright, editor of the *Archives of the Röntgen Ray*. An *oscillograph* is advertised by a London firm at two pounds five shillings. The total cost of one recently imported amounted to $20.51. It differs only from the American *oscilloscope* in the glass tube being a little longer and of larger diameter, and having a porcelain diaphragm, with a minute hole in the centre, between the terminals. For our present purposes, it possesses no advantage whatoever over the oscilloscope made in this country and sold for $2.00.

[3] A somewhat more elaborate tube has been described under the names of ondoscope and oscillograph by Ruhmer (*Elektrotechnische Zeitschrift*, February 9, 1905); Reginald Morton (*Medical Electrology and Radiology*, December, 1905); and Leduc (*Archives d'electricité médicale*, February 25, 1906.)

The second appliance of the utmost importance is the Villard valve. The action of the valve is based on the fact that the positive current flows readily in a vacuum from an electrode of small surface to one having a surface very much larger, but will not flow readily or at all from a large surface to a small one. In this way the inverse is choked off or quenched.[4] If the valve should for any reason prove inefficient the oscilloscope detects the fact; and all valves should from time to time be tested with it. The valve then inserted in series with an x ray tube rectifies the current, and renders it unidirectional, and the milliampèremeter will give a true reading, and indicate the amount of energy expended in generating the rays. In using the valve it is fully as important to maintain a uniform vacuum as it is with the focus tube. The original Villard is furnished with a platinum osmoregulator which may require attention several times during a single exposure. I much prefer, therefore, the modified form devised by Dr. Harry F. Waite, here shown (Fig. 3) in which the regulation is automatic.

The vacuum should be between a Geissler and Crookes, but nearer the former. The appearance

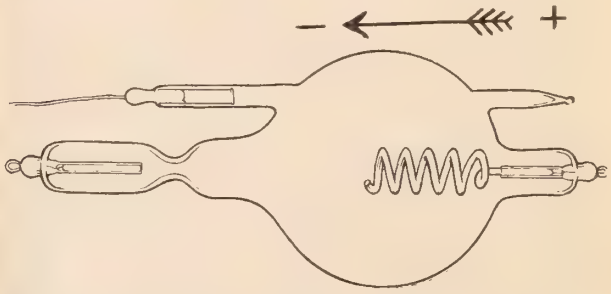

Fig. 3.—Waite's modified Villard valve. The current should flow in the direction indicated by the arrow.

of a green fluorescence in the tube indicates that the vacuum is much too high.

A thoroughly efficient outfit, then, will comprise not only a coil and tube, but also a valve and a milliampèremeter, together with an oscilloscope to act as a detector of an inverse current.

No two tubes, even from the same maker, can be depended on to perform in an absolutely similar manner; it is therefore wise for the operator to acquaint himself in advance with the peculiarities of any tube that he proposes to use in radiotherapy. In the first place, the tube should have an anode independent of the target; secondly, it should have a suitable device for regulating the vacuum.

In order to learn the "points" of a new tube and ascertain the means of obtaining its best efficiency, I usually proceed as follows: Attach the tube to the coil with the cathode cord in position and an oscilloscope in series. Then attach the positive cord to the target terminal and note the behavior of the oscilloscope with the tube in action under various ampèrages. Next transfer the positive cord to the independent anode and again note the conditions of the oscilloscope.

[4] As the Villard valve is fully described in the standard textbooks, it is unnecessary here to indicate its special construction.

Third connect the anode and target together and proceed as before. We are now in a position to know, as a yachtman would say the craft's "best point of sailing." The valve is now introduced into the circuit to correct whatever inversion may be present, and the milliampèremeter will indicate the efficiency of the installation under the influence of different ampèrages through the primary.[6]

I cannot leave the subject of radiotherapy without calling attention to what I conceive to be some of the abuses which have grown up in connection with it. When a gentleman tells me that he uses the x ray as his regular and routine treatment for all cases of acne, and another says the same concerning eczema, the most charitable construction is to consider them radiomaniacs and to regret the poverty of their therapeutical resources. If they are dishonestly employing x rays when other more suitable means are at command, there is but one name that can be applied to them, namely, radiografters. The limit of radiomania has, I think, been reached by a recent writer from whom I quote the following: "It (x ray) may be considered a specific in all forms of acne, lupus, eczema, psoriasis, pruritus, tinea and sycosis, mycosis fungoides, senile keratoses, venereal condylomata, and hyperidrosis." I can add, however, without regret that the writer of this sentence is one who is not specially known in dermatological circles.

Postscript.—Since the foregoing paper was read at Boston, I have received the June number of the *Archives of the Röntgen Ray*, which contains a symposium on x ray measurements, by Bordier (Lyons), Lewis Jones (London), Kienböck (Vienna), Hall-Edwards (Birmingham), and Reus (Chemoga). In these communications some of the points that I have touched on lightly are discussed in full detail. Another new method of quantitative measurement (photographic) is described by Durand in the *Archives de l'électricité médicale*, May 25, 1906.

256 WEST FIFTY-SEVENTH STREET.

[6] Every tube is a law unto itself. Six tubes were tested in the manner I have described with the following results:

1. American tube (Wehnelt, 10 ampères):
   Positive cord connected to anode, no inverse.
   Positive cord connected to target, strong inverse.

The anode and target were then connected together, and connection made first to anode and afterward to target. In both instances this was decided inverse.

2. American tube (Wehnelt, 10 ampères):
   No inverse by any connection, but current stronger when connection was made to anode.
3. German tube (Wehnelt, 10 ampères):
   Connection to anode, no inverse.
   Connection to target, strong inverse.

If anode and target were first connected together, the inverse was stronger than the direct.

4. German tube (Wehnelt, 10 ampères):
   Connection to anode, slight inverse.
   Connection to target, strong inverse.

Anode and target joined, direct and inverse about equal.

5. English tube (Caldwell, 5 ampères):
   No inverse by either connection.
6. American tube (Caldwell, 5 ampères):
   No inverse by either connection.

These tests will enable us to learn the "points" of the tube, but its character and disposition can be ascertained only by practical use; and I would strongly advise the beginner to become a good radiographer before he attempts to become a radiotherapeutist.

THE TUBERCULOSIS PROBLEM IN PRISONS AND REFORMATORIES.*

By S. A. KNOPF, M. D.,
New York,
Associate Director of the Clinic for Pulmonary Diseases of the Health Department; Visiting Physician to the Riverside Sanatorium of the City of New York, etc.

To have been invited, although not a prison physician, to address the National Prison Congress composed of men who have devoted their lives to the amelioration of that class of our fellow beings who are the most unfortuates of the unfortunates, is indeed an honor which I appreciate highly. I do not know that I shall be able to offer anything new as to the prevention of tuberculosis and the management of tuberculous patients in prisons. All I can hope is that I may be able to draw your attention to some points appertaining to the subject which may be elaborated during the discussion by the physicians and other members of this congress, and thus I am convinced we shall learn from each other and help the cause which has brought us here.

In a lecture which I delivered recently before the Laennec Society of the Johns Hopkins Hospital of Baltimore on the subject Tuberculosis as a Social Disease, I found that I could cover the ground most advantageously by dividing the theme in the manner we often do to discuss a disease of any kind, namely: Ætiology, diagnosis prevention, treatment, prognosis. With your kind permission I will follow the same order in my discourse to-day.

Why is it that the mortality from tuberculosis is on the average three times higher in prisons[1] than among the population outside of penal institutions? To hold the prison hygiene, or rather the lack of hygiene entirely responsible for the unusual prevalence and mortality from tuberculosis would be as unscientific as it would be unjust to the prison authorities and physicians, What then is the true ætiology? The majority of criminals are not born criminals but prepared to be such by early environments. The majority of tuberculous prisoners have not become predisposed to tuberculosis in prison, neither have the majority contracted tuberculosis during prison life. Those of you who have studied the lives of your wards preceding the first imprisonment will bear me out when I say, that the majority of those predisposed to tuberculosis or those in whom the invasion of the tubercle bacilli has already taken place, come from the overcrowded tenement districts of our large cities. Most of these young criminals have been raised so to speak in an atmosphere of darkness with bad personal and general hygiene, underfeeding and unsanitary housing, not infrequenly combined with intemperance and other evil demoralizing influences. When I picture in my mind what I have seen during my visits to many of the New York tenement houses, when I think of the dark halls, the unclean, overcrowded rooms, often the indiscriminate mingling of the sexes and the numerous undiscovered, untrained, and untreated consumptives, I simply wonder that there are not

* Address delivered by invitation before the physicians of the National Prison Association at its annual congress, held in Albany, N. Y., September 19, 1906.

[1] Staus, *La Tuberculose et son bacille*, Paris, 1895.

more tuberculous prisoners. Add to the immoral influences, already enumerated, the thin walls, the school sink,[2] the presence of the social evil in many of the crowded tenements, which latter, owing to an unwise legislation was not confined to certain districts, but is now domiciled almost everywhere, I again wonder that there are not more criminals, that there is not more vice rampant. Human nature does not seem after all to be so willing to degenerate. So much for the general ætiology, which will account for the first implantation of a criminal tendency so often combined, if not with the invasion of the tuberculosis germ at least with a strong predisposition to the disease.

It is not within the province of my address to make sociological suggestions to avoid the creation of the young criminal. What I have said, however, may help us in the discovery of the remedial agents. Not a small number of our tuberculous prisoners come from reformatories through which the young criminal has passed without being reformed. It would seem to me that early tuberculosis should be taken care of, in these institutions perhaps more than in any other, and the utmost precautions to prevent the well from contracting the disease from the tuberculous, should be inaugurated. To find no bacilli at one or several examinations of the sputum of a coughing pupil of a reform school is no evidence that the pupil is free from tuberculosis. I hope I may be pardoned for repeating before an audience of physicians, something that is so well known but frequently overlooked: namely, that when the bacilli are found in the sputum there has been already a disintegration of pulmonary tissue, and the case is really no longer an incipient one. We should never forget that while the presence of the bacillus in the sputum, that is to say in the pulmonary or laryngeal secretion, is an indisputable proof of tuberculous disease, the absence of the bacillus does not by any means exclude the existence of such disease. Only by the most careful physical examination, i. e., inspection, palpitation, percussion, and auscultation, taking into consideration the personal and family history, environments and possible sources of infection, and past and present symptoms, is it possible to diagnosticate an incipient tuberculosis. There is, however, one bacteriological test which might be employed in addition and which I think is not sufficiently known and practised. I refer to the examination of the mucus of the laryngeal, retropharyngeal, and nasal secretions obtained with the aid of a swab made of steril absorbent cotton. Sometimes bacilli are found in these regions long before they appear in the ejected sputum[3] and often before there is any cough or expectoration. Let me, however, warn you here to bear in mind, that in healthy individuals, nurses or others who associate much with consumptives or handle the linen which has been soiled by those individuals, bacilli may be found particularly in their nasal secretions, and nevertheless these individuals may be in perfect health.

If the reformatories would weed out the tuberculous inmates, or at least separate them from the well, and properly treat them, the penitentiary would ipso facto receive fewer tuberculous prisoners. To the unbiased observer the detention prison must be held equally responsible for the numerous tuberculous prisoners which now crowd our penal institutions and are a constant menace to their fellow prisoners and also the community at large, for when they are set at liberty without being cured, or at least prophylactically trained, they are apt to infect others with whom they live or associate.

It had been suggested to eliminate or rather isolate the tuberculous from the nontuberculous in prisons and similar institutions, and in order to do this with certainty it has been recommended that all prisoners before admission be subjected to the tuberculin test. Owing to the nature of this paper I cannot enter as deeply into the discussion of early diagnostic means as I should wish to. But you have a right to expect an expression of opinion from me on this point. I am not in favor of tuberculin as a means of diagnosticating tuberculosis. I know it is not infallible. I know it has caused reaction in actinomycosis, syphilis, and anæmia, and reacted in cases where there was no tuberculosis present. Cases where the tuberculin test caused generalization in persons with only suspected tuberculous lesions are by no means as rare as our tuberculin enthusiasts would wish us to believe. I do not stand alone in this opinion. Such men as Professors E. G. Janeway of New York city, and Frank Billings of Chicago have expressed to me personally the same opinion based on actual experience and advise against the use of tuberculine for this reason. I know of a professor of clinical medicine who became ill. Suspecting tuberculosis, he went to California, and submitted himself there to an examination by an expert diagnostician. The latter thought to have detected some very suspicious signs, but did not wish to commit himself to an absolute diagnosis. Knowing that the distinguished patient had used tuberculin in his practice, he suggested this test. The professor agreed and a certain date was set apart for the tuberculin injection. When the time arrived the professor's courage failed. He refused to take the injection, saying tuberculin was all right for other people but not for him. I do not glory in this distinguished colleague's comments. The golden rule should guide us as well as the rest of the world. You, by reason of your authority, and the character of your patients would perhaps be more tempted than any other class of physicians to experiment with tuberculin, and yet although your clientèle is composed of men no longer free, and I am inclined to believe that if you would wish to, you could in many instances inject tuberculin with or without the consent of the prisoner; I doubt the propriety of its use in any instance. It would seem to me that because

[2] The school sink, as constructed, is simply a masonry privy vault, with a drain connected with the public sewer. The contents of the vault are retained by a plug at one end until such a time as the janitor, or other attendant, lifts it out and allows the contents to sluggishly drain away. The school sinks are seldom flushed and are a serious potent source of contagion and a means of spreading disease. Located in the yards, they are of easy access from the street, and are often abused and rendered most foul by disorderly persons. *First Annual Report of the Tenement House Department of the City of New York*, 1903.

[3] Blume's method of examining laryngeal secretions consists in collecting some of the laryngeal mucus on a pledget of cotton on a laryngeal probe and making a smear with this on a slide, which is then stained in the usual way. (*Berliner klinische Wochenscrift*, July 16, 1906.)

of the relative helplessness of the prisoner in your charge, you should think twice before injecting tuberculin, and only if you are convinced in your own mind that no harm can be done and then only with the full consent of the patient, and may I add only if under similar circumstances you would wish to have tuberculin injected into yourself or a member of your own family, should you resort to this diagnostic means. If you are confronted with a case of suspected tuberculosis and an immediate decision is imperative and all your diagnostic skill, bacteriology and x ray, are of no avail, give the patient for a few days twice or three times daily five grains of potassium iodide. and you may thus elucidate previously obscure symptoms.

Lastly, remember that all doubtful cases, when treated by improved hygiene and improved nutrition are bound to do well and better than when left alone, and in treating the individual with suspected tuberculosis as if he had it, we may save a good many lives.

After the ætiology and diagnosis we come to prophylaxis as the next most important subject for us to discourse. The prevention of tuberculosis in prisons and reformatories must begin in the detention prison. As far as I could learn from my visits to detention prisons in this State and others, prisoners who are simply held for trial or are awaiting to be removed to the penitentiary, are never examined by any physician unless they are quite ill and in actual need of medical attention, or obviously afflicted with consumption. It must be evident that in this way a latent tuberculosis has a chance to develop, for even in the better city prisons the usual overcrowding will render the atmosphere vitiated, particularly in winter. If we add to this the lack of exercise and the depressing psychical influence of confinement, nostalgia, and worry, we cannot wonder that prisoners arriving after sentence to a penal institution are often found to be tuberculosis, some even with very active lesions, while they may have entered the prison of detention seemingly in good health. Again, some may have been a little below par, underfed or weakened by exposure, and as a result have contracted tuberculosis from consumptive fellow prisoners while in jail.

I say this with no disregard for the heroic attempts of most of the wardens and physicians to render modern detention prisons as sanitary as possible. Our principal prison in New York, known as the Tombs, is situated in Centre street, between Leonard and Franklin streets. When I visited this institution a few weeks ago, I was pleasantly surprised not to be able to detect the characteristic prison odor, and still even here the strongly predisposed, or the one already slightly afflicted with tuberculosis, has a good chance to develop the disease to its full extent. It is impossible with 400 prisoners comprising the ever changing prison population of the Tombs that one single physician could examine all prisoners carefully enough to detect the presence of an incipient tuberculosis. Prisoners awaiting trial stay in the Tombs sometimes six months and longer. They are not occupied with anything. They are allowed to exercise in the open air only once a week and for about an hour and a half. You know as well as I do that many detention prisons are not as hygienically built as this one, and that there exists additional depressing factors in many of them well calculated to further tuberculous diseases.

What can be done to strike at the root of this deficiency in dealing with the tuberculosis problem in prisons? There should be attached to every detention prison a competent staff of expert diagnosticians to examine every prisoner for tuberculosis, syphilis, or other infectious diseases. The seeming increase of expense which would thus arise to the community will in the end result in a financial and sanitary benefit to the community at large. I can also see no reason why the prisoner who has means should not be taxed to defray the expense for a measure through which he himself derives the greatest benefit. If he is himself unknowingly afflicted with tuberculosis the early recognition must mean to him the saving of his life. If the disease is recognized in one of his fellow prisoners he is protected from contracting it.

If prisoners would only have to remain in detention prisons three or four weeks, the inforced idleness with one hour and a half open air exercise weekly might not be very injurious; but, when their time of staying in the detention prison is longer than that, a physical, mental and moral deterioration is almost inevitable. No prisoner should be detained for trial longer than four weeks, unless it be in the interest of justice. It is at the very beginning of incarceration and enforced idleness when these factors produce the most depressing effects, and if there is any predisposition to tuberculosis it is sure to develop then. Whenever practicable even detention prisoners should be occupied with something useful and health sustaining. I do not mean by that forced labor.

Lastly, there should be some arrangement in the detention prisons to give the prisoner sufficient amount of exercise in the open prison court to assure his physical well being; not weekly, but daily.

It would thus seem that the first step toward the prevention of tuberculosis in penal institutions should be a most careful examination of all individuals, and the weeding out and isolating of all tuberculous prisoners detained in jails. The tuberculous patient should remain isolated in the detention prison as well as in the penal institution, and he should be given the benefit of hygienic and dietetic treatment from the first moment he becomes a ward of the State or city.

When the time for his transfer comes, the history card of his disease and the recommendation of the physician should be transmitted with the other papers of the prisoner to the penal institution. After his arrival at the prison in which he is to stay for some length of time the physician will decide whether he is able to work or not, and what kind of work might be most conducive to his recovery. There is no gainsay that the ideal occupation for the tuberculous prisoner is agricultural or garden work. But before dwelling

on the occupation best suited to the tuberculous prisoner or the one predisposed to tuberculosis. let me recapitulate here something I have said in a previous communication on prison hygiene as far as it appertains to the prevention of tuberculosis.

FIG. 1.—Enameled iron spittoon suspended at convenient height for use in workshops.

Not only should there be a careful examination of every prisoner for tuberculosis when he enters the prison or detention or the penal institution, but his chest should be reexamined periodically, at least once every three months. With this periodical examination a very incipient case, which might have escaped detection during the "entrance" examination is sure to be discovered before the disease has progressed to any considerable extent.

Expectorating, except in proper receptacles placed for that purpose in cells, workshops, chapels, schools, and on the grounds, should be punished by severe disciplinary measures. That there may never be an excuse for violating this rule, I would go further. I would not only provide a sufficient number of fixed, elevated, suspended, simple or self-flushing cuspidors, such as, or similar to, the ones illustrated here (Figs. 1, 2 and 3), but I would see that each prisoner has some sort of a pocket flask, or receptacle, made of metal, glass, or pasteboard, similar to those used in sanatoria for consumptives, of which I also give illustrations (Figs. 4, 5, 6, 7).

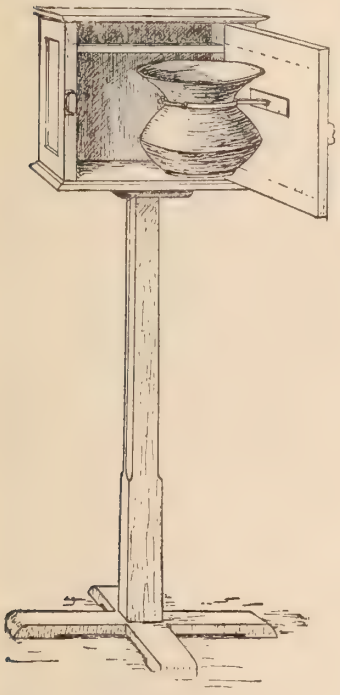

FIG. 2.—Elevated spittoon with stand of wood.

FIG. 3.—Self-cleansing elevated spittoon with supply pipe.

A prison is perhaps the only place in the world where spitting regulations can be rigorously enforced, and it is but fair that, if we say to an individual "don't spit here and don't spit there," we should give him a chance to spit somewhere when he has an excess of saliva, a cold, etc. I am firmly convinced that with such a measure not only would tuberculosis diminish in prisons, but epidemics of pneumonia and grippe would be less to be feared and more easily controlled. I should even like to recommend as a regulation that every prisoner must hold his hand before his mouth when coughing, whether this coughing spell is followed by expectoration or not. Thus dropinfection, that is to say, the expulsion of bacilli with droplets of saliva, will be avoided, and since the coccus of pneumonia is so very prevalent even in the mouths of healthy individuals. this precaution may perhaps also tend to the diminution of pneumonia. As an additional measure to prevent drop infection it might be well never to put prisoners too close together at the work tables. Whenever practicable, there

FIG. 4.—Oval pocket flask of blue glass with screw cap top and bottom.

FIG. 5.—Cheap metal flask with bayonet closure.

should be a distance of three feet between them. It has been demonstrated that at that distance the droplets expelled during cough fall to the ground. It goes without saying that the personal and bed linen of the tuberculous prisoner as well as his clothing should be regularly subject to disinfection. The handkerchief of this class of prisoners should consist of squares of cheap muslin, which should be burned after use.

To judge from the appearance of the various kinds of blankets, comforters, and quilts which were lying on the cots in the prisoners' cells in some of the penitentiaries I have visited, it seemed to me that these coverings might become the means of spreading infection, not only in tuberculosis, but in a good many other communicable and contagious diseases. The blankets and comforters are, as a rule, the private property of the prison inmate. He brings these articles with him. or they are given to him by visiting friends, or by fellow prisoners who have been discharged. In most prisons these coverings as well as the clothing which the prisoner wears on entering the penal institution are carefully disinfected. The precaution does not, however, suffice to prevent the bed covering from becoming thoroughly infected afterwards, particularly with the germs

of tuberculosis. Pulmonary tuberculosis is so insidious in the early stages, that the prisoner may have infected his bed clothing long before his disease has been discovered by the prison physician unless, of course, frequent and thorough physical examinations of all prisoners are in vogue. To guard against infection which may arise from blankets, comforters, etc., having been soiled by tuberculous sputum or other infectious material, I would suggest that after thoroughly disinfecting these articles when they are brought to the prison, they be incased in a covering of light-colored washable material (not necessarily white), as one uses a pillow case. By basting the blanket in its "blanket case" it can be manipulated with as much ease as if covered. With comforters and quilts the same method should be pursued. There should be two sets of cases so that the blankets need not remain uncovered while one case is being washed; thus the blankets need never come in direct contact with the prisoner's body. I am convinced that with such a system and with the injunction that this washing must be done regularly, a factor of transmitting tuberculosis and other infections from prisoner to prisoner will be done away with.

FIG. 6.—Oval shaped nickel plated pocket flask; can be manipulated with one hand.

FIG. 7.—Pasteboard purse.

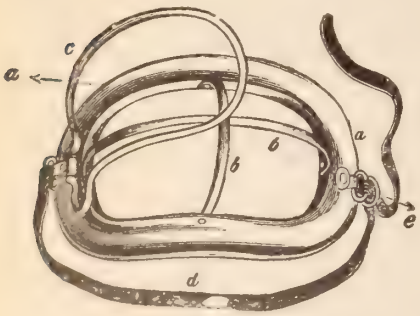

FIG. 8.—Fränkel's mouth mask.

Even the prisoner who is only suspected of having tuberculosis should have a separate cell, and, as far as possible, the placing of two prisoners in one cell should be avoided. The bucket system for receiving the dejecta of prisoners during the night and during the day when confined to their cells, is most deplorable. It is unsanitary in general, and as far as it permits the emanation of odors and gases, it is deleterious to the health of the inmate. The individual cell watercloset, with a perfect trap and cover, such as are used for example in our New York Tombs and other new prisons, is certainly to be recommended in place of the bucket system.

The more advanced cases of tuberculosis, particularly those with constant fever and in whom there is disintegration and corresponding abundant expectoration of bacilli, should be treated in special wards, and in summer, perhaps, in special tents of the prison hospital.

In view of the probable indifference to hygienic regulations of the inmates of the hospital, I would insist for the purpose of preventing drop infection that all patients in the more advanced stages must wear a mouth mask. Patients in a number of European hospitals for consumptives are told to make use of such masks in order to protect themselves as well as the other patients. I take pleasure in showing you here such a mask. It is known as Professor Fränkel's mouth mask. (Fig. 8.) I really think it a valuable means to prevent drop infection which, with the advanced cases among consumptives, is quite a serious factor in the propagation of the disease. By impregnating the gauze which is held in place by the metallic frame of the mask, with some medicinal substances, the tuberculous prisoner could be made to believe that the instrument was worn for his own personal benefit, instead of for the benefit and protection of others, or as they might think, as a means of marking them as individuals suffering from a contagious disease. Thus, even the humane arguments against the use of such a mask would have no foundation. Where these masks have been used, bacilli have been found almost constantly on the gauze. Fränkel's and Moszkowski's experiments have demonstratd the great value of these protective masks, which can be easily disinfected. The gauze should, of course, be changed as often as necessary, but at least twice or three times a dav and immediately be burned after removal.

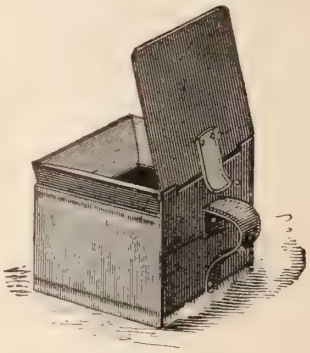

FIG. 9.—Metallic frame for cup.

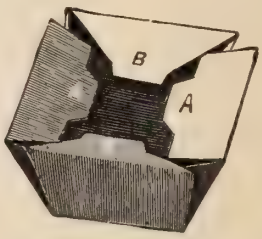

FIG. 10.—Pasteboard cup.

For use at the bedside of consumptive prisoners, Seabury & Johnson's well known square pasteboard cup with metallic frame (Figs. 9 and 10) or Kny-Scheerer's round pasteboard small cuspidor with cover (Fig. 11) or their simple metal spit cup (Fig. 12) are most suitable. When filled with sputum, these pasteboard receptacles and contents are destroyed by fire.

The custom of whitewashing a room in which ordinary and healthy individuals stay but a short time might be considered a hygienic procedure. When, however, this process has been adopted

for the sake of doing away with the danger of tuberculosis, I doubt its efficacy. In case a cell has been previously occupied by a tuberculous prisoner, he has surely infected its walls, if not directly, by expectorating on them, he has done so by drop infection. Whitewashing is well nigh useless since dried whitewash is apt to scale off, especially when there are several coats, and it will almost constantly produce a certain amount of dust in a small room like a cell. This becomes irritating to a sensitive lung, and it is not unlikely that it may be an aggravating factor with prisoners who enter the penal institution only slightly tuberculous, or predisposed. The new occupant, if at all debilitated physically or mentally de-

FIG. 11.—Kny-Scheerer round pasteboard sputum cup for bedside.

FIG. 12.—Metal spit cup for bedside.

pressed, is strongly exposed to contracting tuberculosis in such an environment. The scales of the new coat of whitewash, gradually disintegrate into fine dust, unite with the underlying tuberculous dust, and make an infection by inhalation *par excellence*.

The method of inhaling tuberculous germs from infected walls has been demonstrated again and again, not only inside of prisons, but in the tenement houses of the poor, and even in the apartments of the rich.[4] Dr. Ransom, in his admirable report on Tuberculosis in Penal Institutions,[5] expressed himself as follows in regard to the delusion that whitewash is a cleaning and disinfecting agent: "Observation and experiment show that whitewash really promotes the spread of tuberculous disease. The fine scales and floating particles that emanate from the dry whitewash, when disturbed, not only irritate the bronchial mucous membranes, but they are also carriers of infection to the point irritated." To remedy the danger arising from whitewashing small cells, I would suggest that the whitewash be replaced by oil paint which can be washed off with strong disinfecting fluids. The cells should of course never be smaller than five hundred to six hundred cubic feet, well ventilated, well lighted by natural light in daytime, and by electric light at night (gas illumination absorbing too much oxygen). In the Ohio State prison which I had the privilege of visiting some time ago, prisoners with sufficient means to pay for having their walls painted instead of whitewashed can avail themselves of this hygienic safeguard. The injustice of such a rule is evident. I am glad to report that upon my suggestion the painting of all the cells in the Columbus prison has, I believe, been done since.

As to the general sanitation of prisons as far as it relates to tuberculosis, I only wish to say that a prison with all its annexes should be constructed so that there is plenty of light and ventilation, and on a soil that is dry and porous.

To avoid the acquisition of a predisposition or a developing of an incipient case I would suggest the following: All prisoners should be given a chance to exercise several times during the day in the open air, even if it is only for a short time, and during that time they must not only be permitted, but should be enjoined, to take deep inhalations, or better yet, regular respiratory exercises. The exercise in the open air should, however, not be limited to week days. According to the prison regulations now in vogue in most penal institutions, prisoners are confined to their cells not only from the hour of five in the afternoon to six in the morning, but also during almost the entire twenty-four hours of Sundays and holidays, and when a holiday follows a Sunday, or vice versa, the prisoners are necessarily locked up in their cells for two successive days. That such close, long confinement in a small, ill ventilated cell must be harmful is self-evident.

In well conducted prisons the inmates are required to bathe regularly, and their skin is usually in good condition. To the prisoner predisposed to tuberculosis or one whose case is so incipient that constant medical supervision is not necessary, permission for daily cold douches should be given. To these classes of prisoners, predisposed or incipient, it seems to me also that it would pay the State to give food containing a little more of the nitrogenous substance and the carbohydrates than the regular prison fare now represents.

One predisposing factor to tuberculosis in prisons, which seems to have been overlooked in most of the reports on the subject, is overworking the prisoners. While it is true that in the majority of prisons the hours of work are rarely more than those of the average free laborers, we must not forget that the free men, laboring eight to ten hours a day, has a relatively better quality of food, the exhilarating influence of freedom of action, and naturally superior hygiene. I do not wish to make this statement in the spirit of criticism, but simply to point out the general likelihood of a predisposed individual developing tuberculosis more rapidly under such conditions than when in normal environments.

I do not wish to speak of any particular prison here, but I have visited a number of them, where the workshops were very badly ventilated, overcrowded with workers, often overheated, and where there should have been dust collectors they were wanting. For example, tobacco workers under the best conditions are prone to tuberculosis. How much more must they be in danger in a prison workshop, constantly dust laden, where there is hardly elbow room, and the air is greatly vitiated? Since it is a very common practice for cigarmakers to paste the final leaf with saliva, it must be evident that no prisoner, even slightly afflicted with tuberculosis, should be permitted

[4] Flick, *The Contagiousness of Phthisis*, Philadelphia, 1888. Biggs, *The Action of the Health Department in Relation to Tuberculosis*, 1897. Knopf, *Twentieth Century Practice of Medicine*, xx, p. 211.

[5] *International Prison Commission*, House Document 142. Fifty-eighth Congress.

to make cigars, leaving aside the fact that such conditions are sure to aggravate his disease.

I cannot leave the subject of prophylaxis of tuberculosis without referring to one phase which appertains rather to the welfare of the community at large. I refer to the pardoning of prisoners far advanced in tuberculosis. Whether this practice of restoring the pardoned prisoner to their often poor families is always a wise one I venture to question seriously. It is often sad enough that prisoners who have contracted tuberculosis in prison, or whose tuberculosis has been aggravated through prison life, are discharged upon the community at the expiration of their sentence without any regard to where they will go or what they will do. They will invariably constitute a source of infection, unless they have been prophylactically trained and are willing to continue to be careful. Prisoners virtually dying from tuberculosis should not be pardoned and sent home, unless the authorities are sure that the unfortunate sufferer will not become a burden to his family nor a source of infection.

I have already referred to the treatment of advanced cases, and it remains only for me to say one word on the value of agricultural colonies as a means to employ, treat, and cure tuberculous prisoners in the earlier stages of the disease. You are all familiar with the admirable work done at the Texas tuberculosis agricultural colony known as the Wynne State Farm, under the scientific and humane management of Dr. Fowler. The statistics of four years working of this farm are as follows:

Total number	discharged	34
" "	pardoned	30
" "	transferred	37
" "	died	46
" "	on hand	33
" "	treated	180

At the conclusion of Dr. Fowler's interesting report he comments on the statistics as follows: "I will say that the thirty-seven men transferred are virtually cured, and at least one half of those pardoned and discharged were in good physical condition, and the majority on hand are improving. The labor of the one hundred and eighty men was practically of no value anywhere else in the prison, as most of them had reached an advanced stage of tuberculosis before their reception at the Wynne Farm. The farm is more than self-sustaining, if the expense of guarding the prisoners is deducted. The men all occupy the same building, as they have to be guarded day and night."

From the report it is evident that tuberculosis has been on the decrease in that prison, and there is no doubt in my mind that the tuberculous prisoner, cured through the healthful and invigorating agricultural pursuit, will after the expiration of his sentence be returned to society many times a better member of it than he was before. This thought brings me to the last and concluding topic in the treatment of our subject, namely, prognosis. What is the outlook for a most satisfactory and humane solution of the tuberculosis problem in prisons and reformatories? If you will recall what I have said regarding the ætiology you will agree with me, when I say that the prognosis of the problem under consideration will depend largely upon what the governments of State and individual communities, and also what the philanthropists will do toward the betterment of the social conditions of that class of our fellow citizens from which the largest number of prisoners are recruited. The housings condition of the poor in the cities, towns, and villages must be improved. Child labor, the curse of the nation, must be abolished. The underfed school children must be fed. There must be more schools and more playgrounds, more school farms, more school gardens, and more healthful places of amusement for young and old people, so as to lessen the temptation to indulge in drink and vice. All rational temperance movements should receive the encouragement of the government and of well meaning citizens.[6] Starvation wages, sweatshop work, and labor in unnecessarily unsanitary environments, endangering the health, life, and morals of workingmen, should be forbidden by law.

In a recent London publication, I believe, it was stated that the number of prisoners in England who were raised and committed crimes in the cities, was three times as great in proportion as the crimes committed in agricultural districts and by individuals raised and born in those regions. Dr. Dugdale's studies regarding the ætiology of crimes in this country might not confirm these statistics as far as the United States is concerned. You will recall that his work showed what a great amount of crime was developed in a purely rural community from American born families, isolated from the temptations of the city.

I have it on the authority of Mr. S. J. Barrows, the president of the International Prison Commission, that there exist in the United States no criminal statistics which are of any value in this respect. Even the statistics of the different States do not discriminate between city or country. They do not even tell what States are represented. Mr. Barrows informs me of the good news that a bill has passed through Congress by which the permanent Census Bureau is authorized to collect judicial statistics throughout the United States, and schedules have already been prepared dealing with high crimes. Personally, I do not think that, when we will have these accurate statistics, that they will differ much from those quoted for England.

Since I presented the foregoing paper to the Prison Congress, Dr. Frank L. Christian, the senior physician of the New York State Reformatory, has been good enough to furnish me with some valuable statistics concerning that institution which show conclusively that I was right in my assumption regarding the great preponderance of crimes committed in cities and by individuals raised in city environments. Here are some of the interesting statements and figures sent to me by Dr. Christian: "Out of over 15,000 prisoners received at this institution, eighty-two per cent. have been sent from Greater New York. Of these, two hundred and fifty-two died. This number included death from

[6] Knopf, Medicine and Law in Relation to the Alcohol, Venereal Disease, and Tuberculosis Problem. *Medical Record*, June 2, 1906.

all causes. Forty-six per cent. of these deaths have been caused by tuberculosis. Eighteen per cent. were discovered to be tuberculous at the time of their admission."

Concerning their personal habits, it is interesting to know that 54.7 per cent. were addicted to the use of alcohol, 77 per cent. to smoking tobacco, and 18 per cent. to chewing tobacco. About 1 per cent. were opium, cocaine, or morphine fiends. As to their character and association, the following figures were given: 54.17 per cent. were noted as bad, 48.81 per cent. as not good, 2.01 per cent. as doubtful, 2.01 per cent. as good. There were 14.03 per cent. without any education, 36.09 per cent. simply able to read and write, 45.31 per cent. having ordinary common school education or more, 4.57 per cent. high school or more education. The nominal religious faith or training was as follows: Protestant, 41.55 per cent.; Roman Catholic, 46.55 per cent.; Hebrew, 10.03 per cent.; none, 1.87 per cent. Finally, as to the nature of offenses, the following is certainly interesting and would seem to indicate that social conditions must be held responsible in many instances as the primary cause of a criminal career; 90.19 per cent. committed offenses against property, 9.00 per cent. against the person, 0.81 per cent. against the peace.

Where lies the solution of our problem? It lies in directing the tide of emigration from village or city to our agricultural regions, in making farming more attractive and profitable to the rising generation. To the young men and women particularly let us hold out inducements of healthy life in the country as compared with that in our overcrowded tenement districts. The young man who could not resist the temptation to do wrong, who has committed his first crime, should if it is at all possible be given an opportunity during his first imprisonment to learn to love agricultural pursuits. A very happy beginning in this respect has been made in Iowa. The legislature of that State a few years ago made provision for the appointment of a State agent whose duties are to look after the placing of the homeless pupils of the Eldora Reformatory in homes upon farms and in good family surroundings. It is hoped that by taking these boys away from the old environments they knew before being sent to the reformatory and sending them to healthful work on farms, a physical and moral regeneration will result. There is enough undeveloped land throughout this great country where the regenerated member of society may, in agricultural pursuit, be given an opportunity to become again a most useful and honorable citizen. There seems to be a justification in Mr. James J. Hill's recent warning to the nation that more men should devote themselves to the cultivation of the land in the interest of national economics and the bread security of the future. But also from a purely moral point of view, a relative increase of the farming industry should be welcomed by us all.

You, as prison physicians, come, I believe, in closer contact with your wards than prison wardens or even prison chaplains. While I do by no means underestimate the value of the cooperation of these gentlemen, I think you are the ones who can accomplish most in this respect. Advise the city born, physically badly developed youth to become a farmer in order to become strong, and by congent reasoning convince him that it will be best for his physical and social welfare to leave the city for healthful agricultural farming pursuit. I am convinced that you will save many a life from becoming an early physical and moral wreck.

Consider the prison a hospital for the morally diseased whose unkindled souls are clothed in bodies often imperfect by reason of the sins of their fathers, often greatly debilitated by disease or privation, and then consider yourselves designated to be the directors in the treatment of these bodily and moral ills. When you, then, consider furthermore, that it may have been your influence that has awakened in some fellow being, who had once erred, all that is best and noblest in man, and made of him again a useful member of society, well may you feel that your calling of prison physician is a holy and sacred one.

16 West Ninety-fifth Street.

THE TECHNICS OF LUMBAR PUNCTURE IN CHILDREN: WITH PARTICULAR REFERENCE TO THE PRESSURE OF THE CEREBROSPINAL FLUID.*

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The publication in 1891 of Quincke's masterly work on lumbar puncture marks the beginning of an era in which this operation, both as a frequent diagnostic aid and an occasional therapeutical expedient, has steadily extended in field of usefulness. Originally suggested to Quincke by the fact that an older operation—that of tapping the ventricles for the relief of excessive intracranial pressure in hydrocephalus—sometimes resulted in injury to the brain, lumbar puncture is now performed not only to relieve excessive pressure in the cerebrospinal canal, but also to facilitate diagnosis in meningeal malconditions, to withdraw from the canal deleterious inflammatory products, to irrigate and antisepticize locally, and to inject drugs for purposes of anæsthetization or antitoxinization.

In this country the appearance during the past few years of cerebrospinal meningitis in widespread epidemic form has given increased incentive to and added opportunity for the study of this subject. As a result of experience with a considerable number of cases in the service of Dr. Koplik and myself at Mount Sinai Hospital, in which lumber puncture has been performed, we have concluded that the best technics is that which follows with but little variation the original directions laid down by Quincke in his classical articles on the subject. Since there are right and wrong ways of performing even so simple an operation as lumbar puncture, I may be pardoned for giving an elementary and detailed description of its technics.

Anatomical Considerations and Landmarks.—Be-

* Read before the Harlem Medical Association, June 5, 1906.

tween the arachnoid membrane and pia mater of the brain and the spinal cord is the subarachnoid space, which at the lower part of the spinal canal is a spacious *cul-de-sac* surrounding the nerves forming the cauda equina. This space communicates with the general ventricular cavity of the brain by means of the foramen of Magendie at the inferior boundry of the fourth ventricle, and contains the serous secretion whose character and quantity undergo certain changes in pathological conditions. Up to the first year of life the spinal cord extends at least as far as the lower level of the third lumbar vertebra; but owing to the relatively rapid growth in infancy of the vertebræ, it gradually recedes from below and in adults does not reach below the first lumbar vertebra. In children, therefore, to avoid injury to the cord the puncture should be made in one of the lower lumbar spaces.

For orientation the landmarks are the highest positions of the iliac crests, a line connecting which usually crosses the fourth lumbar interspace. The anatomical factors contributing to the ease with which puncture is performed in the lumbar region are the following: (1) The spinous processes of the lumbar vertebræ are short and thick; (2) the spines in this part of the vertebral column are far apart; (3) the long axis of the lumbar spines has but a slight angular elevation, rendering the general direction of the interspinous spaces almost horizontal. On the other hand, the supraspinous and intraspinous ligaments in the lumbar region are broad, thick, and tough, and in adults are not readily penetrated by the puncture needle.

Preparation and Position of the Patient and Operator.—As a rule the horizontal position of the patient is to be preferred. However, in the event of a seeming dry tap, provided there has been no error in technics, it may be desirable to increase the hydrostatic pressure of the cerebrospinal fluid by sitting the patient up. It has been claimed that in the sitting posture there occurs in pathological conditions sedimentation of the cerebrospinal fluid, facilitating successful microscopical examination; this advantage seems to us largely a theoretical one, and is offset by the disadvantages of insufficient spinal flexion and the danger in cases of greatly increased tension of untoward symptoms resulting from too rapid withdrawal of fluid. The child is placed on its left side close to the edge of the bed or operating table. It is the duty of one assistant, facing the flexor surface of the patient's body, to effect forced flexion of the spine by approximating the patient's neck and knees; to accomplish this the assistant grasps with his right hand the nape of the child's neck and with his left hand the child's legs. There are three advantages in this position: It prevents struggling of the patient; brings into prominence the lumbar spines; and increases the elastic pressure of the spinal fluid. It is the duty of a second assistant, while the operator is sterilizing his hands, to asepticize in the usual surgical way the skin at the site and vicinity of puncture. At the edge of the table and on the floor are spread wet bichloride towels, and sterile towels about the field of operation. As a rule no anæsthetic is required. In a case of tetanus, however, treated about one year ago by subarachnoid injections of tetanus antitoxine, I employed chloroform anæsthesia because of the patient's extreme hyperæsthesia and violent convulsions.

Instruments: The Quincke Needle and Manometer.—(See Fig. 1.) Needles constructed according to the directions of Quincke have for several years been accessible to New York physicians, and the older methods of employing a syringe needle or canula and trocar with or without a handle are fast passing into disuse. The latest model of a lumbar puncture set, which I recently imported from Kiel, where Beckmann makes

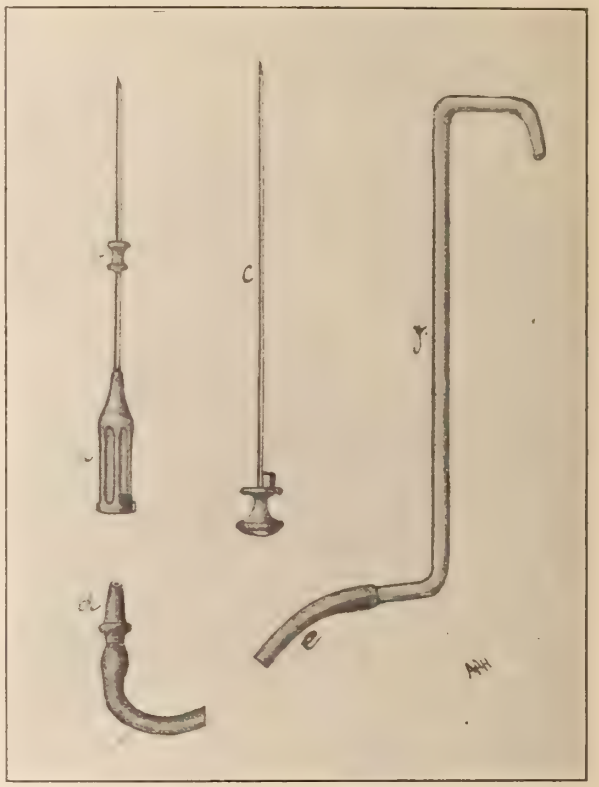

FIG. 1 (after Quincke).—*a*, cannula; *b*, guard; *c*, stilette; *d*, conus; *e*, rubber tubing; *f*, manometer tube. (Half the natural size.)

them, according to Quincke's directions, consists of: (1) Three needles of different lengths and diameters with corresponding stilettes; (2) a glass manometer tube; (3) rubber tubing and coni for connecting the needles with the manometer; (4) a glass graduate for collecting and measuring the cerebrospinal fluid; (5) A glass funnel to be connected with the needle by rubber tubing for irrigating the canal; (6) A lancet for slitting the dura. In practice I have occasion to employ only (1), (2), (3), and (4), always connecting the needle and manometer (so as to secure uniform pressure measurements) with a piece of catheter tubing, No. 5 F., forty centimetres long. If the puncture is for diagnostic purposes, sterile test tubes should be used for collecting and measuring the fluid. In measuring the pressure a piece of steel tape graduated in centimetres and inches is useful.

The needles are from four to ten centimetres long and from 0.8 to 1.6 millimetres in diameter.

The distal extremity of the needle is bevelled at an acute angle to a sharp point, forming a conic section with the end of the stilette when the latter is in situ flush with the end of the needle. The manometer tube is fourteen centimetres long and 2.5 millimetres in diameter.

Recently I have had constructed a flange like, movable guard for the needle (see b, Fig. 1) to be set before puncture at a distance from the point of the needle corresponding to the probable depth of insertion. The object of this appliance is to prevent too deep an insertion of the needle which sometimes results in hæmorrhage caused by puncture of the venous plexus in the anterior wall; the guard also serves to steady the needle after it has been inserted.

Method of Procedure.—The operator sits next to the bed and, after sterilization by boiling of the needle, manometer, tubing with the conus at-

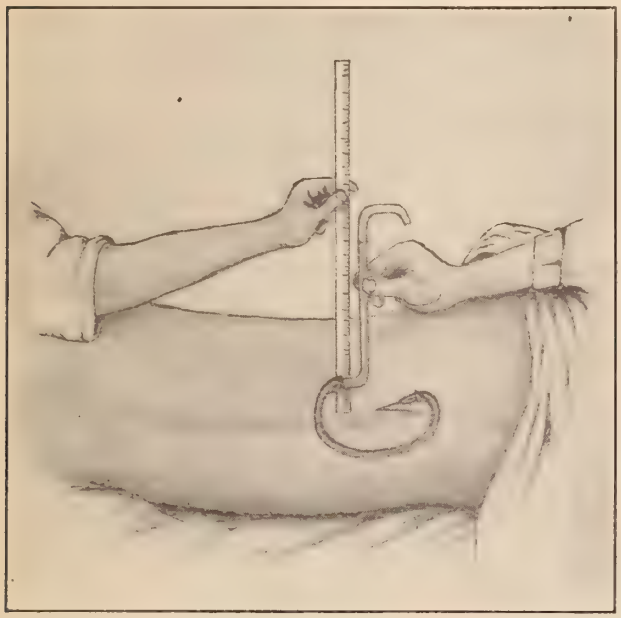

Fig. 2 (after Quincke).—Measuring the pressure.

tached, and measuring tape, with sterile hands he locates the desired space in which with his finger nail he makes an indentation half way between the two spines—in the median line in children, five to ten millimetres to the right in adults. Firmly grasping the needle and enclosed stilette in the right hand, fixing the guard at a distance from the point of the needle about equal to the distance it is assumed the needle will enter, and with the left hand making firm counterpressure over the next higher spine, the needle is inserted with its point on the nail mark in a direction almost horizontal, upward to an angle of about 10°. Where in adults the lateral insertion is used, the direction is inward and upward. The stilette is now withdrawn and the conus is inserted into the hilt of the needle, thus connecting the latter with the manometer by means of the tubing. The horizontal arm of the manometer tube is held about three centimetres below the level of the needle till the cerebrospinal fluid appears in the manometer, after which the horizontal arm of the instrument is raised to the level of the needle and the height of the column of fluid in the manometer is read off on the tape, its zeromark being at the level of the site of puncture (see Fig. 2). The tube is again lowered, and the desired amount of fluid allowed to escape into sterile tubes. From time to time the pressure should be measured by raising the tube to see whether the normal (from three to five centimetres) has been reached. Quincke warns us of the danger of allowing the pressure to reach a degree much below normal, especially when in certain pathological conditions it is exceedingly high at the outset, and the decrease is very rapid; in first punctures and in cases of doubtful diagnosis special precautions should be taken in this regard. Pfaundler states that when the pressure has reached from two to two and a half centimetres, it is not as a rule safe to withdraw any more cerebrospinal fluid.

If the flow is very slow because of low pressure, it may be artificially increased as follows by influencing one or more of its three components: 1. The *hydrostatic* pressure, which is represented by the weight of the column of cerebrospinal fluid, can be increased by sitting the patient up. 2. The *elastic* pressure, or that exerted by the walls of the subarachnoid space and ventricles, can be increased by effecting more forcible spinal flexion. 3. The *vascular* pressure, or that carried over the heart through the bloodvessels, can be increased by making the patient cough, cry, or breathe deeply, or by compressing the patient's abdomen. It is mainly the vascular element that gives rise to the clinical manifestations of excessive pressure.

In performing lumbar puncture the manometer should be used as a routine, for the reason that the pressure constitutes the best guide in deciding how much fluid is to be withdrawn. To some extent, however, the quantity to be taken off will depend upon the purpose of the puncture, the character of the fluid, and the condition of the patient.

The total quantity of cerebrospinal fluid in the normal adult is said to be from fifteen to sixty c.c.; in adults in whom the quantity of cerebrospinal fluid is presumably normal it is uncommon to obtain more than fifteen c.c. on lumbar puncture. In serous and tuberculous meningitis, hydrocephalus, tumors of the brain, and uræmia, the fluid is clear; in pachymeningitis or brain trauma, it may be bloody; in meningitis due to the meningococcus, pneumococcus, or streptococcus, it is cloudy or purulent; in all of these conditions it is increased in quantity and pressure. My own experience with high pressure and increase in the quantity of cerebrospinal fluid is limited to cases of serous, cerebrospinal, tuberculous and streptococcus meningitis, and hydrocephalus. In forty lumbar punctures in which the patients varied in age from three months to twelve years the highest pressure directly after insertion of the needle was fifty-four centimetres, the lowest four centimetres, and the average 26.2 centimetres. In these same cases the average of the various quantities which were of necessity withdrawn to render the pressure normal was thirty-two c.c., the maximum sixty c.c., and the

minimum five c.c. In cases of hydrocephalus enormous quantities can be taken off without any ill effects; in one case I withdrew more than one hundred and fifty c.c. on three separate occasions. In a small proportion of cases even with most painstaking technics, bright bloody fluid is obtained, probably owing to puncture of the venous plexus in the anterior wall of the canal; this accident is never harmful to the patient. Dark decomposed blood indicates a trauma or pachymeningitis.

If fluid does not appear immediately upon withdrawal of the stilette one should not conclude that there is a "dry tap" before waiting a reasonable period and trying the artificial means of increasing pressure, as described before. If these attempts are unsuccessful the puncture should be repeated in another space; but it is seldom justifiable to go further than this. The causes of dry taps are faulty technics, propulsion of the dura before the point of the needle, occlusion of the needle with tissue, fibrin, or pus, abnormally small amount of secretion, or closure of the foramen of Magendie or aqueduct of Sylvius, owing to the pressure of a tumor or to inflammatory conditions.

The usual depth to which the needle has to be inserted in order to obtain fluid is two to four centimetres in children and four to seven centimetres in adults. The depth of the insertion is easily measured by means of the guard already described. Of course this distance varies with the age and build of the patient; in the series of cases mentioned the depth of insertion was least (two centimetres) in the youngest patient (three months), and greatest (4.6 centimetres) in the oldest patient (twelve years). Some of the measurements whch I now take as a routine in every case of lumbar puncture are arranged in a table of ten cases taken from our series. (See Table I.)

In the description of the technics special stress has been laid on the value and importance of the routine use of the manometer tube. It is probable that many of the reported fatalities occurred as a result of too free or too rapid evacuation of the fluid; this can be avoided if the pressure is carefully observed and never allowed to fall much below normal. Most important is this precaution in cases of doubtful diagnosis, especially if the presence of a brain tumor is suspected. It is suggested that in performing lumbar puncture certain observations be regularly made, as shown in Table II. In view of the increasing value and extending applicability of the operation of lumbar puncture, I wish in conclusion to emphasize the importance and urge the adoption of a systematic and uniform method of procedure which experience has shown to be simple, safe, and satisfactory.

TABLE II.

Name of patient, B. K. Sex, female. Age, six months.
Diagnosis, cerebrospinal meningitis.
Number of puncture, third. Day of illness, forty-ninth.
Interval in days since last puncture, ten.
Position of the patient, left lateral. Sat up? No.
Pressure of fluid at outset, 18 cm.
Pressure of fluid before withdrawal of needle, 3.4 cm.
Quantity of fluid withdrawn, 26 c.c.
Time of flow, 3½ minutes.
Interspace, fourth lumbar. Direction of needle, slightly upward.
Depth of insertion of needle, 2.2 cm.
Character of fluid, turbid.
Pathological report:
Albumin, 0.1 per cent.
Reduction of Fehling's sol., negative.
Spreads, meningococcus.
Cultures, not made.
Inoculations, not made.
Cytology, polymorphonuclears, 92 per cent.; lymphocytes, 8 per cent.

TABLE I.

No. of Case.	Age of Patient.	Diagnosis.	Pressure. Immediately After Insertion.	Pressure. Just Before Withdrawal of Needle.	Depth to Which Needle was Inserted	Quantity of Fluid Withdrawn.	Number of Puncture.	Interval Since Last Puncture.	Day of Illness.
38	3 months	Streptococcus meningitis	39 cm.	4 cm.	2 cm.	40 c.c.	1st	—	—
19	8 months	Cerebrospinal meningitis	18 "	2 "	2.1 "	5 "	2d	3 days	Sixth
8	10 months	Tuberculous meningitis	14 "	3 "	1.75 "	25 "	1st	—	Nineteenth
32	18 months	Cerebrospinal meningitis	18 "	3 "	2.8 "	30 "	3d	1 day	Not known
25	17 months	Cerebrospinal meningitis.	4 "	0 "	3.2 "	5 "	1st	—	"
26	2 years	Cerebrospinal meningitis	25 "	3 "	3 "	30 "	1st	—	"
6	7 years	Cerebrospinal meningitis	51 "	0 "	3.5 "	60 "	4th	4 days	Twelfth
24	3 years	Tuberculosis meningitis	26 "	4 "	2.8 "	20 "	1st	—	Not known
16	5 years	Cerebrospinal meningitis	22 "	3 "	3.5 "	40 "	2d	8 days	Thirty-second
1	7½ years	Cerebrospinal meningitis	13 "	2.2 "	4 "	25 "	5th	9 days	Thirty-eighth
	Average in these ten cases		23 cm.	2.4 cm.	2.9 cm.	28 c.c.			

Average age 2½ years.

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FRACTURE OF THE ANTERIOR SUPERIOR SPINE OF THE ILIUM BY MUSCULAR ACTION.

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(*Radiographs by Dr. W. W. Plummer.*)

Case I.—L. B., aged nineteen, very muscular, was making a spurt in a 125 yards race, when he heard a snap and felt a sudden sharp pain in his right hip and a sensation of something giving way, so that he put his hand to his hip to give support. He felt pain on drawing his leg back, relieved by bringing it forward, but kept running and won the race.

On examination forty-eight hours later the patient walked with a slight limp. The anterior superior spine of the ilium on the right side was blunted and vague in outline; while that on the left was sharp and prominent. The blunted part presented a clearly defined area of tenderness to pressure. Beneath the skin, about one inch below, was a hard angular mass, movable without crepitus. A perpendicular from the most prominent part of the spine to the bed was farther from the top of the trochanter than on the sound side. Active flexion of the thigh against gravity was difficult and painful. Passive flexion was less than on the sound side, being limited by the interposition of the hard object.

Fig. 1.—Fracture of right anterior superior spine of ilium, showing fragment.

Fig. 2.—Skeletal pelvis, right side, showing superior and inferior spines of ilium.

Five days later there was more swelling about the right anterior superior iliac spine, which involved the angular mass below, making its outline less distinct. A radiograph taken at that time showed a triangular shadow corresponding to the position of the mass.

Two weeks later the patient walked without perceptible limp. On examination there was still more vagueness in the outline of the injured spine. Palpation showed distinct thickening of the bone. Extending downward from it was an elongated mass of firm consistence and indistinct outlines, the provisional callus. The hard body felt before could be indistinctly made out in the lower part of the mass.

Six weeks after the accident the patient could use his leg as well as ever. On examination the left anterior superior iliac spine was still blunted and thickened. Below was a slight prominence formed by a rounded mass of bony hardness, immovably joined to the bone above by a less prominent bony part. Flexion of the thigh upon the pelvis was limited by the interposition of this mass.

The accompanying radiograph taken at this time shows a bony projection extending downward from the spine, evidently consisting of the fragment, the torn off epiphysis, and callus, probably formed through the agncy of bridge of periosteum which united the fragment to the ilium.

There was no treatment, no application of bandages or other appliances to keep the fragment in place. The patient kept about his ordinary occupation. The limp present at first disappeared in two weeks.

A review of the literature has disclosed reports of only four other cases of the same kind. Hamilton, in his treatise on fractures, reports the case of an old man who suffered the tearing off of an extensive part of the anterior portion of the ilium by muscular action. Several cases of tearing off

of the anterior inferior iliac spine by action of the rectus muscle have been reported. Albertin (1887) is apparently the only one who has called attention to the true character of this accident. He showed that it was probably a separation of the epiphysis by the contraction of the sartorius muscle.

The fact that in all the cases following, the age was seventeen years, makes it probable that in them all there was separation of the epiphyses.

The prognosis in this injury would appear to be good, since in all these cases there was union with good function with any or no treatment.

CASE II.—August S., seventeen years of age, medical

FIG. 3.—Normal left pelvis, showing anterior superior spine and epiphyseal line.

student, engaged in a foot race where a certain distance had to be run, then to turn and run back. In the exertion of turning he felt something snap in his right hip, walked a few steps and fell.

On examination distinct motion and crepitus could be felt by pressure over the process, also by placing the thumb over the origin of the sartorius and rotating the thigh. The patient was placed in bed with the thigh flexed and the shoulder raised, a bandage being applied to aid in steadying the fracture. This position and adduction of the leg was maintained by bands attached to the posts of the bed. In two weeks the patient made a good recovery without displacement.[1]

CASE III.—J. C., aged seventeen, while running a foot race of one hundred yards, was suddenly put to a stop by feeling something give way in his hip, with a sensation of bones grating together. He found that he could not take another step and was carried home, where I saw him within one hour after the accident.

On examination I found distinct crepitus, with motion of fragments on pressure upon the anterior superior spinous process, which elicited considerable evidence of pain.

The leg was placed in a flexed position, resting on a fracture apparatus, but without bandage or other appliances to keep the parts in apposition, and the point of injury kept bathed in evaporating lotion for several days. At the end of two weeks he began to walk, cautiously, by the aid of crutches, and in three weeks dispensed with them altogether; though using a cane in going up and down stairs and over rough ground. The diagnosis was confirmed by Dr. E. T. Bradner and Dr. E. W. Smith, who saw the case with me.[2]

CASE IV.—A very muscular boy, nineteen years of age, on a rather steep path, at a moment when he was about to place the right leg before the other, accompanied it with the left with the intention of strongly checking himself; he felt a severe pain in the left hip, in the region of the anterior superior spine. Standing and walking was impossible.

Palpation along the iliac crest showed near its forepart a furrow, three quarter inch broad, beyond which a small movable fragment, the torn off spine, could be plainly felt. This was held in good position by a gypsum dressing, applied four days after the injury. Full recovery resulted. A radiograph, taken later, showed a displacement of the fragment, somewhat inward and downward.[3]

CASE V.—A boy, seventeen years of age, well formed, on October 3rd entered the service of M. Gangolphe, surgeon to the Hôtel Dieu. Nothing in the history of the patient indicated any lesion of the skeleton. He was not rhachitic or strumous. The skeleton and muscular apparatus appeared normal and well developed. Two days before the patient was running with moderate speed when an unevenness of the ground caused him to lose his balance. This is how the patient explained his fall: His left leg, twisted inside, would have come to be placed behind the right. Feeling that he was about to fall, he straightened up suddenly and threw himself backward. He then fell obliquely backward, upon his left side, but his body did not touch the earth, as he held himself from the ground with his left hand. He immediately arose, feeling a sharp pain in the outer part of the left groin. After his fall he was unable to do anything whatever without limping and much complaint. He remained at rest.

Examination of the painful region gave the following results: The skin presented no marked change, no erosion, no echymosis. On palpation one noted that pressure on the anterior superior iliac spine was distinctly painful. More severe pressure showed a movable bony fragment, consisting of the triangular projection of the spine. This fragment could be grasped and moved upon a deeper bony plane with distinct crepitus. The mobility was increased by flexion of the thigh upon the abdomen, adduction and rotation out diminished by complete extension. Flexion of the thigh was limited considerably and caused a sharp pain to be felt at the upper insertion of the sartorius muscle.

The diagnosis was made of tearing off of the anterior superior spine of the ilium by the contraction of the sartorius muscle. The fact that flexion of the thigh increased the mobility of the fragment showed that, although the epiphysis was separated along the plain of its uniting cartilage, still it was attached more or less by its periosteal covering. The anatomy of the region favored the interpretation, the patient being a young subject. The study of the development of the iliac bone shows that there is an extensive epiphysis forming the anterior superior spine which unites from the twentieth to the twenty-fifth year, but is separated

[1] Dr. Joy and Dr. McWhinnie, *New York Medical Journal*, xii, p. 184; *Canada Medical Journal*, vii, p. 97.

[2] Nickerson, *Boston Medical and Surgical Journal*, cxxii, No. 10, 1890.

[3] J. C. Reverdin, *Centralblatt für Chirurgie*, 1900, p. 352.

from the rest of the bone previous to this time by a cartilaginous intersection.

The treatment was simple. Rest in bed without apparatus resulting in slight displacement. Eighteen days afterwards an extensive callus was observed at the point of fracture, and the patient began to walk without pain.[4]

437 Franklin Street.

TUBERCULOSIS AMONG THE INDIANS OF ARIZONA AND NEW MEXICO.

By Isaac W. Brewer, M. D.,
Fort Huachuca, Arizona.

The study of the climate of Arizona and New Mexico and its relation to tuberculosis naturally leads to the consideration of the disease among the Indians whose ancestors have lived in the region since prehistoric times. Very few of the Indians of the southwest have ever been away from that portion of the country, and they may be considered as having always lived under the influences of that climate.

According to the report of the Commissioner of Indian Affairs for the year 1905, there were in the two territories 56,883 Indians. Of these 26,534 were Navajos, 10,870 Pueblos and allied tribes (house Indians), 6,543 Apaches, 4,823 Papagos, 3,900 Pimas, and the remaining 4,203 scattered among several other tribes.

The Pueblos and similar tribes live in houses made of stone or adobe, many of them being terraced community buildings. The other Indians who live in tepees of various kinds, are very filthy and pay no attention to sanitation, their camps are very foul, and the surroundings badly polluted. Their only sanitary virtue of which I am aware, is prompt evacuation of the tepee as soon as a death occurs.

The house Indians, while not to be considered as models from a sanitary point of view, are much cleaner. Their houses, although clean, are badly ventilated, and the streets and surrounding grounds badly polluted.

From the following table it will be seen that there was an increase of 780 in the Indian population during the five years ending with 1904. This, however, does not show the entire increase as the data for the Navajo tribe is incomplete. During the period from 1890 to 1904 that tribe increased in population 587. It has more than doubled in population since being placed on its present reservation, shortly after the civil war.

Tribe and reservation.	Total. Births.	Total. Deaths.	Change.
Colorado River Reservation:			
Mojave on reservation	79	93	−14
White Mountain Reservation:			
Apache	387	243	+144
Hopi Reservation:			
Hopi and Navajo	729	619	+110
Pima Agency:			
Maricopa, Pima, and Papago	1,737	1,121	+616
San Carlos Reservation:			
Apache	201	251	−50
Walapai Reservation:			
Havasupai	65	99	−34
Walapai	59	124	−65
Albuquerque Agency (Pueblo):			
Acoma, Laguna, Isleta, San Dea, San Felipe, and Santa Ana	980	839	+41
Zuñi	165	184	−19
Santa Fé Agency (Pueblo):			
Cochiti, Jemez, Nambe, Picuris, Santa Clara, San Domingo, San Ildefonso, San Juan, Sia, Taos, Tesque	723	649	+74
Jicarilla Reservation:			
Apache	165	184	−19
Mescalero Reservation:			
Apache	104	108	−4

[4] Albertin, *La Province médicale*, 1887, p. 741.

Statistics as to the prevalence of tuberculosis among the Indians are hard to obtain. In the reports of the Commissioner of Indian Affairs there are occasionally figures showing the number of deaths, but more often the statements are in general terms that cannot be reduced to figures. In October last I wrote to the physicians on duty at the several agencies and schools and endeavored to obtain more exact data. Their replies were prompt and showed an interest in the subject, but excepting in a very few cases they had been at their posts for but a short time and were unable to furnish much information.

In general the replies indicated that the disease was very prevalent among the Indians of the region under consideration, some bands of Apaches appearing to be badly infected, while the Navajos and Pueblos seem to be infected to a lesser degree. The Apache Indians are filthy in their habits, living amongst the rubbish and offal of their camps. Those sick with tuberculosis expectorate anywhere and everywhere. The Navajos are a nomadic people, cultivating a little corn in the river bottoms and possessing large flocks of sheep. They are consequently better fed than the other tepee Indians. The Pueblos are more civilized, and being farmers and possessing good lands are better fed and clothed than any other Indians of the Southwest. As far as my information goes none of the tribes are free from the disease.

The following remarks taken from reports sent me by the several agency physicians or from the annual reports of the Commissioner of Indian Affairs will show the condition of the several tribes.

Colorado River Agency. (Mojave Indians.) Tuberculosis, according to the report of the superintendent for the year 1905, causes ninety-five per cent. of the deaths.

White River Agency. (Apache Indians.) Dr. A. M. Wigglesworth reported in 1904 that tuberculosis in the form of "consumption" of the lungs caused a death a month. In some cases whole families have been gradually exterminated by it.

Hopi Reservation. (Hopi and Navajo Indians.) Dr. Jacob Breid reports for the year ending June 30, 1905, that seven children were excused from the school on account of tuberculosis, the capacity of the school being 175. In a letter dated October, 1905, he adds that it is quite prevalent among the older Moqui Indians (Hopi). He also says that the Navajos who live more in the open are also afflicted but not to the same extent as the Moquis. Dr. C. W. Parshell, of the same reservation, reporting on the conditions at Oraibi for the year 1905 states that tuberculosis is the greatest cause of death among the school children.

Navajo Reservation. (Navajo Indians.) Dr. A. M. Wigglesworth at Fort Defiance reporting for the year 1905 states that tuberculosis is not very prevalent, but is increasing, and always fatal when the lungs or meninges are involved.

Fort McDowell Reservation (mostly Apaches). Wm. H. Gill reports for the year 1905 that the deaths exceed the births four to one. That "con-

sumption" in its various forms has gained strong hold on the Indians.

Pima Agency. (Maricopas, Pimas, and Papagos.) Dr. A. E. Marden reports that about two thirds of the deaths among the Pimas are due to tuberculosis.

Walapai Reservation. (Havasupai and Walapai Indians.) Dr. A. L. Tilton reported in October, 1905, that since January 1st there had been seven deaths, six being from tuberculosis. He estimated that tuberculosis caused seventy-five per cent. of the deaths among the Indians.

Mescalero Reservation, N. M. (Apache.) Mr. J. A. Carroll reports for 1905 "That an excessive mortality is rapidly settling the Indian question at Mescalero. The causes of this deplorable state of affairs are varied. . . . The Indian's susceptibility to tuberculosis is well known, and this dread disease alone is directly responsible for by far the largest proportion of deaths as well as the cause of many physical wrecks still living." Dr. Irving McNeil reports that during the two years preceding October, 1905, there were twenty-eight deaths from tuberculosis out of forty-six deaths from all causes in a population of four hundred and fifty.

Santa Fé Agency. (Pueblo Indians.) Mr. C. J. Crandall reports in October, 1905, that tuberculosis is rare among the Pueblo Indians, that they suffer from it less than any other Indians. Mr. J. K. Allen reporting upon the Pueblo Indians from Albuquerque in 1904, says that there were four cases of tuberculosis in the school which averaged three hundred and eight pupils.

Zuni Reservation. (Pueblo Indians.) Dr. E. J. Davis reported in 1905 that the number of cases of tuberculosis was very small, but that the mortality was one hundred per cent.

That a sojourn in Arizona or New Mexico is a favorable factor in the cure of tuberculosis, especially if the patient come under the influence of the southwestern climate before the disease is far advanced is acknowledged by most persons who have given thought to the climatic treatment of the disease. Yet in the midst of this most favorable climate we find a people largely living in the open air, badly infected with the disease.

A partial answer to the "why" that naturally comes to the lips is given in the annual report of the Commissioner of Indian Affairs for the year 1904, from which the following is taken. (The deductions are based upon replies to letters sent to the physicians on duty at the several agencies.)

"1. That tuberculosis is more widespread among the Indians than among an equal number of whites." . . . 2, That the great prevalence of tuberculosis among the Indians is due to the following causes: Failure to disinfect sputum; poor sanitation and lack of cleanliness; improper and poorly prepared food; intermarriage of Indians of the same tribe; intermarriage of Indians and whites; taking pupils predisposed to tuberculosis from camp life and confining them in schools; overcrowding in dormitories; lack of proper medical attention after infection; the use of alcohol."

The Commissioner of Indian Affairs is well aware of the condition of the Indians in regard to tuberculosis, and in his last two annual reports has spoken strongly upon the subject. In his report for 1905 he recommends a sanatorium for the children of school age who are suffering from the disease. Congress should certainly provide several such institutions, which could be done at no great expense, and in addition should be more liberal with the allowance for medical supplies.

Compared with other physicians in the public service, those in the Indian service are under paid. It can hardly be expected that men will devote their lives to work among the Indians at isolated places for from $80 to $100 per month. These men should have better pay, and there should be more of them. The Navajo reservation in Arizona and New Mexico comprises about 14,849 square miles and has a population of 12,390. For this large territory and population one physician is provided and as far as can be learned from the reports of the Indian Bureau no nurses or attendants.

Indians, like most primitive peoples, are suspicious and cling with tenacity to their customs, and it seems that they have no use for the white doctor. We have it on the authority of the late Major Washington Matthews, of the medical department of the army, who was at the time of his death an authority on the Navajos, that after they had learned to trust him they were glad to avail themselves of his services, and that often he was called at the instigation of the "medicine men" of the tribe. In conversation upon the subject of tuberculosis, a white man who has resided on an Indian reservation for many years said that the reason the Indians did not call on the doctor more often was that before they got used to him he was either transferred or resigned.

Dr. J. R. Walker, of the Pine Ridge agency, has been paying particular attention to the subject of tuberculosis, and feels that he is making headway in preventing its spread. No doubt others are doing good work along the same lines, but they need to be encouraged and supported by the medical profession and the general public.

The study of the conditions amongst the Indians of the southwest has a direct bearing on the climatic treatment of the disease. It demonstrates that climate is not a specific, and that the climate of Arizona and New Mexico, although undoubtedly of benefit to persons in the early stages of tuberculosis, is of little value when the patient is underfed and surrounded by filth and lives in poorly ventilated houses.

It is not uncommon to find persons suffering from tuberculosis, who have been sent to this region and told to "rough it," living in sanitary surroundings every bit as bad as those of the Indians. Only a few months ago a man was found living under a tree on the Fort Huachuca Reservation, whose only shelter was a few blankets and a strip of canvas. His diet consisted of canned goods, and the ground around him was badly polluted with excreta and sputum. Physicians should be careful in sending patients to the southwest to "rough it." Few have the physique to stand such a life. The safest plan is to recommend them to some physician who will supervise their food and exercise, two of the most important points in the treatment of the consumptive.

It is a crime to send working people sick with tuberculosis to this region, telling them that work is easily obtained. It is true that there is plenty of hard work to be had in either territory, but not every employer wants to have a sick man on his pay roll, and it is best for those who are able to work to write to the managers of some of the large mines or other business enterprises stating plainly their condition and asking for work.

The government employs a limited number in the land offices or in the custom houses and on the Indian reservations. Employment can frequently be found in the large mines at Bisbee, Douglas, Morenci, Clifton, Globe, or Prescott, or in the large saw mills at Flagstaff or Williams.

In closing this paper I wish to thank the several physicians of the Indian Service who furnished me the data for this paper.

THE MEMBRANE AND COMPLICATIONS OF DIPHTHERIA. A REPORT OF SIX HUNDRED CASES.

By Walter S. Cornell, M. D.,
Philadelphia,
Demonstrator of Osteology, University of Pennsylvania; Physician to the Dispensary for Nervous Diseases, Presbyterian Hospital; Assistant Medical Inspector, Philadelphia Bureau of Health.

Our knowledge of diphtheria from a clinical standpoint has of late years become much more definite, owing to the introduction of the bacteriological test in the diagnosis. If any one thought has thereby been brought prominently before the medical profession it is the realization of the wide variation in the symptoms presented in different cases. The classic description in the textbooks represents but one of any number of degrees of severity actually occurring; and gives a very inadequate idea of the pathological conditions occasionally found. Our elementary knowledge of faucial, nasal, and laryngeal diphtheria is now supplemented by post mortem reports, showing occasional membrane formation in the middle ear, œsophagus and stomach, as well as invasion of the viscera through the circulation.

The results of bacteriological investigations have forced the recognition of mild cases varying from a scarcely perceptible film necrosis of the epithelium to a catarrhal angina with no visible lesion. Finally the frequent presence of Klebs-Loeffler bacilli in throats of healthy children exposed to infection, is a demonstration of the existence and doubtless transmission of specific germ life, with no disease resulting.

With the view of obtaining, so far as possible, an insight into the clinical aspect of diphtheria as it is recognized in our modern city practice, Dr. A. A. Cairns, chief medical inspector of the Philadelphia Bureau of Health, collected and kindly placed at the writer's disposal the records of over six hundred cases occurring in Philadelphia in the spring of 1905. The information was obtained by a circular of inquiry addressed to those physicians reporting cases of diphtheria to the health bureau about that time; and from the material thus collected, a record was made of the location of the diphtheritic membrane, the complications, and the severity of the disease as it was encountered. With but few autopsies, no attempt was made to study the involvement of the viscera.

LOCATION AND DISTRIBUTION OF THE MEMBRANE.

Six hundred and sixteen histories were examined, in ten of which the information was indefinite. Analyzing the record of 606 cases in which the affected part was distinctly stated, it is seen that the *tonsil* (one or both) was the seat of the diphtheritic membrane in 456 instances, figures agreeing with our common knowledge, that it is the part affected in the majority of instances. In 252 cases the membrane was limited to it, and in 204 cases it was included in a more extensive morbid process. The *larynx* seems to be next frequently affected, as sixty-three pure laryngeal (including tracheal) and forty-three mixed cases were reported. This totals one hundred and six, or seventeen per cent. The *pharynx* was involved more frequently than the larynx; although pure pharyngeal cases numbered only twenty-eight. The pharynx was involved in common with adjacent structures in 109 instances; but in view of the fact that in such cases this occurs usually by secondary extension, these figures are rather misleading unless this fact is borne in mind. *Nasal diphtheria* was found eleven times alone, and thirty-three times combined. *The whole throat and larynx* were involved in five cases. The extreme extent of invasion was seen in four cases where the nose was invaded as well.

A summary of the conditions found in the six hundred and six cases under consideration is given below.

Tonsils	266
Pharynx	28
Nose	11
Palate	1
Uvula	2
Larynx	63
No membrane	13
Tonsils and pharynx	44
Tonsils, pharynx, and arches (syn. fauces)	22
Fauces and nose	1
Fauces and larynx	5
Fauces, nose, and larynx	4
Tonsils, pharynx, and nose	7
Tonsils, pharynx, and palate	2
Tonsils, pharynx, and uvula	6
Tonsils, pharynx, and larynx	4
Tonsils and arches	34
Tonsils, arches, and nose	1
Tonsils, arches, and uvula	1
Tonsils and nose	10
Tonsils, nose, and uvula	2
Tonsils, nose, and larynx	1
Tonsils and palate	15
Tonsils, palate, and uvula	3
Tonsils and uvula	30
Tonsils, uvula, and larynx	1
Tonsils and larynx	21
Pharynx and nose	8
Pharynx and palate	1
Pharynx and larynx	5
Arches and palate	1
Arches and uvula	1
Nose and larynx	2

A review of the literature shows several interesting articles on this subject. Lennox Browne analyzed one thousand cases, occurring in practice in London; and therefore based on similar clinical conditions to those just reviewed. A comparative table is here given. The figures refer to the number of cases, and are classified according to the location of the membrane in each.

	Lennox Browne's cases.			Author's cases.		
Above the larynx:						
Fauces	672	67.2 %	84.1 %	458	75.6 %	82.6 %
Fauces and nose	165	16.5 %		29	4.8 %	
Nose	2	0.2 %		11	4.8 %	
Mouth	1	0.1 %		0		
Palate	1	0.1 %		2	0.4 %	
Involving the larynx:						
Larynx	4	0.4 %	15.9 %	63	10.4 %	17.5 %
Larynx and fauces	109	10.9 %		32	5.3 %	
Larynx, fauces, and nose	46	4.6 %		11	1.8 %	
Total	1,000			600		

The large percentage figures are here remarkably approximate. The principal difference is in the figures bearing on the frequency of nasal diphtheria. The stated percentage of pure laryngeal cases depends largely on whether the epiglottis is regarded as a part of the fauces or the larynx. It seems to the writer that Lennox Browne's figures for laryngeal cases (4-1000) is low.

A study of the parts affected is given also by Holt in his textbook, based upon the records of the New York Infant Asylum. It serves to show the points of selection in young children. The figures refer to the part affected, and not to the number of cases of diphtheria; and have no relation to the others in the same column. I have endeavored to make a similar analysis of the six hundred and six cases considered (a few cases are omitted), and so form a basis for comparison.

Regions affected.	Number of times. New York Asylum.			Number of times. Author's figures.		
Tonsils	27	25 %	66 %	252	41.6 %	75.2 %
Tonsils and elsewhere	45	41 %		204	33.6 %	
Pharynx	18*	16 %	81 %	28	4.6 %	22.6 %
Pharynx and elsewhere	71	65 %		109	18.0 %	
Nose	0	0 %	18 %	11	1.8 %	7.2 %
Nose and elsewhere	20	18 %		33	5.4 %	
Larynx	6	6 %	46 %	63	10.4 %	17.5 %
Larynx and elsewhere	44	40 %		43	7.1 %	
Number of cases of diphtheria	109			606		

* Or less.

Whence it may be learned that diphtheria in young children is more apt to attack the larnyx and nasal cavities; and that a marked tendency is exhibited by the speudomembrane to spread from the part first affected and involve the adjacent pharynx secondarily. This tendency to extension is also demonstrated by noting that the figures of the New York asylum show a greater frequency of diphtheria of the tonsils (pharynx, nose, and larynx in conjunction with other involvement, than when these parts are affected of themselves only.

Councilman, Mallory, and Pierce have made a very valuable study of the bacteriology and pathology of 220 fatal cases of diphtheria with autopsy, including a description of the location of the membrane in 127 cases in which it still existed at the time of the post mortem examination. Their demonstration of the frequent occurrence of diphtheria of the larynx and trachea, and the extensive invasion of the system in these grave cases, is probably our most accurate work on the subject. The purpose of this paper, however, has but little relation to such a specialized group of cases.

Severity.—The severity of the average case of diphtheria can hardly be estimated from a textbook description, nor from the experience of any one man; since the former is too inelastic to give a true conception; and the other is liable to erroneous conclusions, because of contact with an uniform class of cases according to the social level of his practice. The writer has thought it worth while to classify his six hundred cases as free from these objections, in order to show the wide variability in their severity. The terms "mild," "moderate," etc., were suggested by the health bureau in its circular of information in order to facilitate classification.

Summary—Mild cases	133
Moderate cases	258
Severe cases	184
Septic cases	40
Gangrenous cases	1
Total	616

It is the recognized large number of mild cases that is here emphasized. Many others, still milder and not recognized, constitute the principal factor in the propagation of the disease.

The Complications and Sequelæ of Diphtheria.—The complications of diphtheria are both local and systemic. The sequelæ are practically identical with them. Locally, laryngeal obstruction is most to be dreaded, and, systemically, death occurs most frequently from general acute toxæmia or from paralysis of the heart. Nephritis occurs in practically all fatal toxæmic cases, and bronchopneumonia in about one half, the pneumococcus usually being the causative agent (Councilman, Mallory, and Wright). Adenitis, anæmia, and prostration are so constantly met with, that they can be regarded as complications only when particularly pronounced.

The most frequently encountered complications may be thus set down: Local: Adenitis, laryngeal obstruction, hæmorrhage. Not local: Toxic prostration and stupor, toxic anæmia, nephritis, heart paralysis, pneumonia., multiple neuritis, otitis, thrombosis and embolism, endocarditis.

In 579 cases definitely reported in this series, 432, or seventy-five per cent., presented no complications worthy of note. Sixty-six developed a marked adenitis or cervical cellulitis, twenty-four a peripheral neuritis, twenty-one nephritis, nineteen myocarditis (including such terms as heart failure, paralysis of the heart, etc.), and ten pneumonia. Several cases of anæmia were reported, but as it is a common symptom, and no blood examinations appear to have been made, we have disregarded them for fear of error. The full record is as follows: None, 432; adenitis and cellulitis, 66; neuritis, 24; nephritis, 21; myocarditis, 19; pneumonia, 10; scarlet fever, 4; nasal hæmorrhage, 3.

The bibliography on diphtheria is so immense that its review is a difficult task. The writer has consulted Nothnagel's *Encyclopædia,* Sajous's *Annual,* Osler's and Tyson's *Practice,* and Welch and Schamberg *On Contagious Diseases;* and has used the records for comparison here given because of their general acceptance as standards by these authors. For further reference see Nothnagel's *Index für Bibliographie,* giving two hundred and thirty-six references to the whole subject.

1728 CHESTNUT STREET.

THE EARLY COURSE AND DIAGNOSIS OF SCARLET FEVER.

BY WILLIAM L. SOMERSET, M. D.,
New York.

Scarlet fever has been recognized as a disease, separable from all other diseases, for about three hundred and fifty years. For some time previous to that, it was confused with either measles or smallpox, as the case might be. In still earlier times, both it and measles were written of as varieties of smallpox. That scarlet fever should have been the last of these three to be recognized as a distinct disease is as one would expect, for it gives, at its onset, no single pathognomonic sign. Of course, the other exanthemata do not always give one, but they frequently do. The umbilicated vesicle of smallpox; the crystal clear vesicle of varicella, if found, are sure guides. In measles, too,

the crescentic grouping, the crescents scalloped on their concave borders, with the largest scallops toward the middle of the crescent, is not produced by any other condition. The eruption of scarlet fever, however, is not unique. It is produced in conditions having nothing in common ætiologically. The same is true of the throat, pulse, and temperature. But take the symptom complex presented by all these along with the order in which these symptoms appear, and scarlet fever is usually susceptible to a positive diagnosis at a single inspection, if seen on the second, third, or fourth day of the disease, and if, at least, some history of the onset is provided. But many cases, even when seen at the most favorable time, require subsequent inspections, for it may be necessary to know the persistence of the symptoms: And there are patients, in whom, through lack either of virulence or of susceptibility, a positive diagnosis is impossible—a working hypothesis of probability being the best that can be given.

It is customary to subdivide cases of scarlet fever into groups, as mild, severe, anginose, septic, malignant. These terms are, of course, necessary for description, but they apply more accurately to individual cases than to groups of cases, and they call attention to differences rather than to resemblances. These differences may very well be so marked as early to overshadow all else, yet they will be found to begin in resemblances of symptoms and of sequences present in all cases susceptible to diagnosis.

The period of incubation is rarely longer than four days. Here, as in the other exanthemata, the first symptoms are due to the action of the contagium, or its toxines, on mucous membranes. These poisons have selective affinities. In measles, the respiratory tract and the eyes furnish the earliest manifestations. In scarlet fever, the first demonstrable lesion is on the mucous membrane of the throat. The stomach usually gives the initial symptom. It may be only nausea, with slight headache and malaise, or, vomiting, unexpected and without retching, or, in small children, convulsions. This stomach disturbance is a sympathetic rather than a direct effect of the poison, for it is not progressive, as the direct effects are, but passes off quickly. It may be absent altogether. To be of any diagnostic value, it must be initial. Following this immediately, or, after a few hours, is the sore throat. This is always present, and gets progressively worse for two, or three, days. The throat abnormality may be very slight, may scarcely attract the patient's attention. It is rarely so mild as this, yet, in the mildest cases, a change in color of the mucous membrane can be seen, and this change will persist and extend up to the appearance of the skin eruption. The throat lesion begins as a tonsillitis, rapidly becoming a pharyngitis. Follicular deposits may be visible in a few hours. The mucous membrane is bright red. There may be much swelling. The inflammation progresses to the fauces and palate with a more distinct margin than is usual in other conditions. The pin point vesicles of the eruption can frequently be made out on the palatal membrane.

Previous to desquamation and complications, a positive diagnosis of scarlatina cannot be made irrespective of the throat condition. This condition alone, however, cannot be a sufficient basis for such a diagnosis. This is said with full cognizance of the inflamed throats—sometimes intensely painful—which frequently afflict attendants on scarlet fever patients. These produce no complications other than those possible to nonscarlatinal throats. They are, of course, followed by no desquamation. Just as the initial throat lesion and temperature constitute a *sine qua non;* so the subsequent skin eruption is a necessity before a positive diagnosis is possible. This confirmatory lesion appears not sooner than twenty-four, nor later than forty-eight hours, after the onset of the tonsillitis.

The character of the eruption is the same on mucous membranes and on skin. It is an inflammation going on to exudation, the exudate appearing in the form of closely set, pin point vesicles, each with peripheral erythema. It may require a magnifying glass to make this dual condition plain. The exudation into any one lesion may never be more than microscopic in amount, or it may increase, and the practically invisible vesicles become tiny pustules plainly visible to the naked eye. Such is the usual course with parts of the eruption, at least, in well marked cases. The innumerable initial erythemata quickly coalesce, making the redness diffuse.

The eruption shows on trunk and limbs, progressing downward. The cheeks may be markedly flushed. As this flush does not affect lips, chin, and forehead, there is, in such cases, a fairly characteristic facies. This condition may be entirely absent. The eyelids may be swollen. The vesiculation, or dermatitis, does not appear on the face, nor behind the ears—save on the rarest occasions—nor does desquamation commonly occur there. The coalescence, to which I referred, may be delayed, or absent, on the back of hands and extensor surface of the forearms, the eruption resembling that of measles. This condition is not found on the trunk. The color of a scarlet fever eruption is best described by the name of the disease. It is the bright, live color of an active inflammation. It differs in hue in different cases as normal skins differ in different individuals. It is well to remember that people with red hair may present at all times a scarlatinal like skin on neck and upper chest, especially in front; and that crying and struggling, on the part of children, often produces a scarlatinal appearance, lasting many minutes after the commotion has ended. It is well to examine the skin before the throat.[1]

The tongue may be unaffected in scarlet fever; it may indicate a febrile condition only; it may unmistakably indicate scarlet fever. In such a case, the tongue is moist, white coated down the middle, clean and bright red at tip and edges, with enlarged, bright red papillæ scattered over all. This strawberry tongue, if present at all, is a day or two later than the eruption in making its appearance. The redness and enlarged papillæ persist for several days.

The onset of scarlet fever is, furthermore, invariably characterized by the presence of fever. It

[1] It is reasonable to assume that the skin relieves the mucous membranes. Heat favors the exanthem. A hot bath, during a possible period of invasion of one of the exanthemata, is a real therapeutical measure, as well as, frequently, an aid to diagnosis. By the same reasoning catharsis is not indicated.

reaches its maximum, in favorable cases, on the third or fourth day. It declines to normal in about the same length of time. There are morning remissions. The fever follows this course, whether its maximum is 100°F., or 105°F. A sore throat, with a temperature of 104 to 105°F., during the first twenty-four hours, or a scarlatiniform condition of skin, coming on with a falling temperature, is almost certainly not due to scarlet fever. The temperature continues to rise as the eruption comes out. Again, the throat, skin, and temperature stand related to each other in what may be called scarlatinal proportion. Given a temperature of 104 to 105°F., due to scarlet fever, the condition of skin and throat will surely account for it. On the other hand, given an intense erythema, or dermatitis, with a temperature 99 to 100°F., and scarlet fever may be excluded. This brings us around to the statement already made, that the mild cases are the difficult ones: Cases in which neither throat, nor skin, nor temperature, shows any marked variation from normal. Even in these cases, the variation, slight though it be, will persist for several days. A scarlet fever that gets to the surface at all is not a matter of hours, but will persist in its effects on throat, and skin, and temperature for two, or three, or more days.

The lateral and postcervical axillary and inguinal glands are slightly enlarged at the onset of scarlet fever. Such enlargement is common, however, and due to a variety of causes. The tonsils often, in fact, usually present follicular deposits. These may unite into masses of considerable size. They are always confined to the tonsils and are due, of course, to exuded serum and desquamated epithelium. Albumin may be found equally early in the urine, due to the same products. The throat is the best guide as to the probability of subsequent complications. Concerning the pulse, it need only be said that it is rapid—ten to twenty beats more per minute than is found with the same temperature disturbance at the onset of the other exanthemata. This rapidity persists with the temperature.

Among conditions simulating scarlet fever, German measles deserves consideration. The skin condition here is more a matter of congestion, there being little or no exudate, and little or no subsequent desquamation. The congestion is usually intense enough to produce a pseudopapulation, or "goose flesh" effect. The eruption is less likely, also, to be confluent and of uniform intensity. What confluence there is, furthermore, comes later than in scarlet fever, the initial appearance being more like that of measles.

The eruption reaches its maximum and disappears in half the time consumed by an equally intense scarlet fever condition. The face is freely invaded. Throat, temperature, and clinical condition do not match the eruption in scarlatinal proportion. Take away the rash and there is little or nothing left. The patients do not feel sick.

An idopathic erythema scarlatiniforme gives an intense scarlatinal condition of the skin, often with a marked rise in temperature. The throat is affected either not at all, or but slightly. The rash fades quickly. The temperature may drop to normal within twenty-four hours from the onset. Desquamation begins within the first twenty-four hours, and is as free on the face as elsewhere. Patients with this condition are subject to recurrences a day to two apart, or separated by weeks or months. This disease, without authentic history of previous attacks, may very well necessitate isolation for a day or two.

The very numerous erythemata due to poisoning by intestinal contents are accompanied by conditions foreign to scarlet fever. If due to drugs, the history of such drug taking will be at hand, and the advent of the rash will not be synchronous with other modifications of the previously existing clinical condition. Furthermore, drug erythemata are, sooner or later, multiform. This multiformity is characteristic also of rashes due to the injection of diphtheria antitoxine. It is worthy of remark in this connection that the "breaking out" of either scarlet fever or of measles on the skin of a patient within a day or two of the giving of the antitoxine will be most marked about the site of the injection. If the ætiological factor is some article of diet or ptomaine poisoning, the condition, aside from the rash, will not be such as to suggest scarlet fever; the vomiting will be repeated with intense nausea and exhaustion; the temperature and illness will be most marked before the eruption appears. The progress of the patient, whether favorable or otherwise, will be different, for scarlet fever does not give us a patient at the point of death on the day of onset, nor on the day following; neither does it give us a patient critically ill to-day and practically recovered and hungry to-morrow.

Boracic acid, either as lotion or ointment, applied extensively as on a burn, may cause a widespread scarlatinal eruption. In dogday weather, prickly heat, in small children, may lead to a diagnosis of scarlet fever. Its free and invariable invasion of forehead and scalp serves to exclude it. Sepsis, rheumatism, and urethral disturbances may all be accompanied by scarlatinal erythemata. Remembering this possibility, the course of the temperature, followed for a few hours, the pains in joints or muscles or other local conditions, will serve to differentiate such cases.

The initial eruption of malignant variola is scarlatinal. The face, however, is intensely flushed and swollen. The eyes are bloodshot. The throat mucous membrane is pale. The patient is evidently in a dying condition within the first twenty-four hours. Now, it is stated that malignant scarlet fever may be fatal in eight to twelve hours. Such statements are easily carried along without verification. Malignant variola was formerly much more common than at present, and, up to the time of death, which is usually on the first day of the eruption, may present a condition of skin indistinguishable from that of scarlet fever. It may be that surgical or puerperal cases have furnished instances, but I doubt if a physician can be found who has seen a case of scarlet fever fatal in one, two, or even three days. The poison, even in its most virulent form, requires the better part of a week to produce a fatal result. Many cases of scarlet fever, after the initial four or five days, present a period of entire quiescence. Throat, tongue, skin, and

temperature are, in all respects, normal. During this time there is nothing, unless history, on which to base an opinion. This inactivity may persist for fully three weeks from date of onset of disease, and then be followed by free desquamation and by complications, if there is exposure to cold and wet or the diet is injudicious. During this time, furthermore, these cases are, without doubt, possible sources of contagion.

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SOME REMARKS ON THE DIAGNOSIS OF TYPHOID FEVER.*

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It is my impression that the diagnosis of typhoid fever is still beset with difficulties. Why, may I ask, is it that with all our advances in the scientific methods, there are cases of typhoid fever frequently met with in which a precise diagnosis cannot be made. This is due to various reasons. According to some, typhoid fever at the present time has become more atypical. This assertion is very hard to prove. Take, however, a case of typical typhoid fever, no disease is easier to diagnosticate. We diagnosticated it promptly twenty years ago. It seems to me the difficulty arises partly from the fact that we are called upon to diagnosticate this disease at a very early stage, often at its very inception. The public has awakened to the fact that diseases do not "develop" nowadays in the sense in which that term was employed formerly. A disease is either present or it is not present; an ever wise and watchful public has become suspicious of the so called low fevers, the spurious malarial fevers, the typhoid malarial fevers, and they wish to be informed precisely and from day to day what the doctor is dealing with, and they will not be put off with a name.

Secondly, the influenza epidemics which come along with such regularity every fall, winter, and spring, have involved the diagnosis of typhoid fever to a considerable extent.

Furthermore, the scientific tests which are brought to bear on this disease, helpful as they may prove to be in a large number of cases, inasmuch as they impress the scientific stamp on the diagnosis of the case, are very often confusing and misleading both to the doctor and the public, especially when it comes to the question of an early diagnosis or the diagnosis of some of the atypical cases. This will be discussed more fully later on.

And lastly, since the trend of medical practice is becoming more surgical every day, the responsibility of the practitioner has grown a hundredfold. He can hardly undertake a case without being constantly haunted by the idea that at one stage or another of his careful and painstaking observation, he may miss the opportune moment when the surgeon is to be called in. A seemingly well defined surgical indication may at any moment make an exploratory laparotomy obligatory; and this may in turn disclose an appendicular abscess, an empyema of the gallbladder, or a plain case of typhoid fever.

After these introductory remarks, allow me to discuss some of the points which bear directly on the diagnosis of typhoid fever.

The first point is the proper use of the clinical thermometer, which, it seems to me, is not universally understood or its indication properly carried out. An accurate grading of the temperature of the body can only be obtained in one way, and that is by careful and repeated measurements in the rectum. This fact, although universally accepted, is, in a great many instances, not followed out in practice for æsthetic or other outward reasons. Temperatures are being taken under the arm or in the mouth. The results are inaccurate and misleading. It is superfluous to mention here, too, that it is necessary to record the temperatures at regular intervals, the late afternoon temperature generally indicating the highest rise of the day. Gerhardt,[1] Liebermeister,[2] and others have recorded typhoid fever cases without fever. This is not to be taken literally, however, as a careful rectal measurement in such cases will invariably show a rise of one or two degrees above the normal. I have seen such cases in family groups—of typhoid fever and sporadically. They are mostly of the mild and abortive type and seem to yield quickly to treatment by careful rest in bed and diet, although they are sometimes subject to relapse even under these favorable conditions. From what I have seen of this class of cases I have reason to think that they are generally overlooked, and that a more careful use of the clinical thermometer will enable us to diagnosticate this kind of case or this phase of typhoid fever at an early stage. If it is true, as statistics show, that there are thousands of cases of typhoid fever every year which die from perforation of the bowel, that fact may, at least in part, be explained in this way: That these mild cases are primarily neglected; superficial observation, indiscriminate feeding tend to aggravate the extent of the anatomical lesions of a disease which, if carefully observed and treated, tends to self limitation. If not recognized, hæmorrhage from or perforation of the bowel, peritonitis, and sepsis are the result. By exercising great care, the practitioner, to whom alone these cases are referred, can, in a preventive way, achieve brilliant results.

The Clinical Ensemble.—It is not my intention to go into a minute description of the well known clinical ensemble, because it is so characteristic that from it a complete chain of evidence can be adduced, which leads to a very prompt diagnosis. But on the other hand, it may happen that the characteristic headache is not present; there may be gastric disturbances or there may not be. There may be constipation or diarrhœa. The pulse may be slow or fast; it may not be dicrotic. The spleen may not be palpable or the area of its dulness may not be enlarged. The fluctuations of the temperature may not amount to more than a degree. The practitioner sees these

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[1] *Charité Annalen*, xvi, p. 208, 1889.

[2] *Volkmann's Sammlung*, lxi, p. 477, 1873.

atypical cases all the time and in all stages. Typhoid fever patients walk the streets, they do their work until they cannot keep up any longer. If these patients have been examined at all, their cases have not been diagnosticated properly; they have been allowed to continue their daily vocations, strengthened in the belief that they are suffering from indigestion, grippe, or malaria. Finally, when properly examined they present the complete clinical ensemble, including the diazo reaction and the positive Widal test. In other words, they are placed under thorough and exhaustive clinical observation, only in the second, third, or fourth week of the disease, or during a relapse.

Leube[3] says: "If a simple intestinal catarrh be accompanied by fever and also by an enlargement of the spleen (the latter is very rare, I have only seen one such case), then the question comes up whether we are dealing with a case of typhoid fever or not. If the dyspeptic signs stand out preeminently, that circumstance in itself speaks against the diagnosis of typhoid fever. The differential diagnosis between a case of gastritis accompanied by fever and a case of typhoid fever, cannot present any difficulties in the further course of observation." According to my experience, the very opposite of this is true, and I have found that in a large number of cases the only symptoms which typhoid fever presents in its inception and throughout its whole course are the gastric symptoms, or gastric symptoms coupled with intestinal symptoms.

And this brings me to the second elementary matter of physical examination touched upon before: The enlarged and palpable spleen. For my part I cannot conceive of any gastrointestinal affection of an acute or subacute character without a corresponding enlargement of the spleen. The enlargement is constant, and only varies in degree. It is, however, impossible to demonstrate this, clinically, in every case. The delimitation of the splenic dulness is so variable and subject to such incidental changes which the observer is easily led to erroneous conclusions. Close observation on this point has taught me the following: It is surprising how often a true enlargement of the spleen, nearly invariably in children and young subjects, can be demonstrated by the touch in the course of most fevers by examining the patient in the recumbent back posture, the patient being instructed to relax his abdominal muscles and to breathe deeply and slowly, holding the mouth wide open. The results of this examination can be substantiated and controlled by going through the same manœuvres in the right side position. To come back to Leube's assertion: The difficulty which Leube claims to have had in one case in his whole experience we encounter in the majority of the cases, especially in the beginning of an attack, when the contributory symptoms are lacking. Therefore, we make a thorough evacuation of the bowels, one of the first steps in the diagnosis of these cases. A definite decursus of the temperature and the appearance of one or the other of the contributory symptoms may allow of a probable diagnosis in the positive as well as in the negative sense in the course of a few days.

To sum up this point: Typhoid fever in its inception often presents no other symptoms than those of an ordinary gastrointestinal infection. As a careful physical examination will commonly elicit splenic enlargement in the ordinary intestinal infection, as well as in typhoid fever, it is therefore often impossible to make a positive diagnosis unless one allows himself to be influenced by the degree of splenic enlargement, which in typhoid fever is generally more pronounced than in an ordinary intestinal infection. An unexpected relapse, the development of the contributory signs, may, in the further course of the disease, enable us to make a positive diagnosis. A certain general impression of the case, whatever that may mean, may lead us to think of more than an ordinary intestinal disturbance. I have dwelt upon this point particularly, because all our scientific progress in the subsidiary signs have not brought us one step nearer to an early diagnosis, I mean in the first week or the first ten days. It is the practitioner who sees these cases at this critical stage, and thus the responsibility rests heavily on him.

A few more words about the cases of intestinal infection mentioned before: They are very frequently met with. From the short course which they run, and from the absence of specific typhoid symptoms, they can with some care be differentiated from the typhoid group, although they resemble that disease to a marked degree. The majority of the patients are constipated, some have diarrhœa. The spleen is enlarged and often palpable. The urine shows the Rosenbach reaction for aromatic bodies. After a thorough purge the fever disappears in a few days, the size of the spleen diminishes very markedly from day to day, with or without the administration of quinine. These cases are very common and are probably nothing more than ordinary intestinal infections with a rapid absorption of toxic material into the blood. I have never been able to find the plasmodium of malaria in these cases. What is striking is the considerable splenic engorgement which appears and disappears so rapidly under proper treatment. It is barely possible that the marked enlargement of the spleen is due to an old or subchronic malarial infection. In some cases a slight elevation of temperature continues for weeks.

Before leaving this matter of splenic enlargement, I will mention that I cannot agree with Leichtenstern,[4] who asserts that the spleen is rarely enlarged in influenza fever. Those cases of influenza which are accompanied by intestinal symptoms frequently resemble typhoid fever to such a degree that a positive diagnosis cannot readily be made. Furthermore, certain catarrhal affections of the respiratory tract, especially at the time of influenza epidemics, or subsequent to an attack of tonsillitis or bronchitis, may be accompanied by a temperature of a remittent character more or less regular in its course, which, for lack of other tangible physical signs closely resemble typhoid fever. A blood count reveals a degree

[3] *Lehrbuch*, II, p. 539.

[4] *Nothnagel's Handbuch*, IV, p. 145.

of leucocytosis, however, which is incompatible with the blood count of the ordinary typhoid fever without complications. The absence of a suitable name for these cases makes it all the more difficult to differentiate them in practice.

And now as to the differential diagnosis of typhoid fever and malarial fever, and as to the combination of both infections. Osler[5] pointed out, to the profession the importance of recognizing typhoid fever as such, and the danger of mistaking typhoid fever for malarial fever. Osler says that the diagnosis of the malarial fevers is easy enough to make from the clinical features and from the examination of the blood. A combination of typhoid fever and malarial fever Osler deems very rare indeed. The authority of Osler is unquestioned, and he deserves great credit to have formulated these important points to the profession at large. Typhoid is typhoid and malaria is malaria. Woodward's typhoid-malarial fever as a disease *sui generis* cannot be recognized any longer. The points bearing on this subject which I wish to bring out are these: I have reason to believe that some of Osler's[6] cases, if carefully scrutinized, can be proved with a fair amount of certainty to have been cases of typhoid fever and malaria combined. Secondly, as to the variety of the combined infection there is positive evidence to the contrary by other observers, for instance, Vincent,[7] with his seventeen cases and others. From Ewing's[8] careful study of this subject in our Cuban campaign, it seems to follow that typhoid fever is to a large extent incompatible with active malarial fever, and during the course of the former, the latter is usually suppressed; aside from this, however, malarial paroxysms often reappear during convalescence.

Now nothing is easier than the clinical diagnosis of malarial fever in its typical forms. In the atypical irregular cases, however, which resemble typhoid fever, the plasmodium is the deciding factor. That is true. But when quinine is given, as is usually the case in practice, the plasmodium very quickly disappears from the peripheral blood. This is especially the case in the æstivoautumnal fevers. Accordingly in a given case my experience has been that it is very hard, sometimes impossible in practice to prove malaria by the blood, although clinically there is very little doubt as to the diagnosis of the case.

As to the point of combined infection there is no doubt but that it occurs. Osler pointed out other causes besides malaria to explain the chills during the course of typhoid fever. Comprehensive studies of autoptic material from badly infected malarial districts to throw light on this question are still lacking. As it is, the plasmodium has been demonstrated in the blood of subjects during the course of typhoid fever. After all, malaria is a chronic systemic affection with a tendency to become less virulent, and to produce a certain immunization of the system. I have seen cases of malaria concurrent with typhoid fever, and also chills and rigors of a malarial nature during the convalescence of typhoid fever. A very careful search in the peripheral blood may not reveal the presence of the plasmodium. The large hard spleen, however, the suppression of chills by means of quinine abundantly proves the malarial nature of the attacks.

Since the discovery of the Eberth bacillus investigators have directed their attention towards the exploitation of this organism as a diagnostic aid at the bedside. At first attempts were made to obtain pure cultures of the typhoid bacillus for diagnostic purposes from the stools, then from the urine, and latterly from the blood of the rose spot, from the blood of the spleen, and recently from the median cephalic vein of the arm. The attempt to cultivate the typhoid bacillus in pure culture from the stools has practically been given up as a routine examination for diagnostic purposes, as the technical difficulties are very great indeed. The impression which I have gained from the investigation of doubtful cases by the various methods, is, that just in such cases in which the demonstration of the typhoid germ would be most welcome as a diagnostic factor, the Eberth bacillus is probably not plentiful enough in the excretions to be differentiated with any degree of certainty. The investigation of the blood from the rose spot has not met with any noteworthy success. In fact, the rose spot is not present in the doubtful case. It is a relatively late sign anyway. The puncture of the spleen for diagnostic purposes has virtually been abandoned. As a routine method of investigation it surely could never find a place in this country, as there seems to be a consensus of opinion that the method is a dangerous one.

The diagnosis by the blood gained by renal puncture is the only one left to be considered. Linhartz[9] reports that he was successful in making pure cultures of the Eberth bacillus in ninety per cent. of his cases. The question may fairly be put, will this method of diagnosis by renal puncture ever become a standard diagnostic method in private practice? I am inclined to think not. In a critical case, where all other methods fail, it will be used as a last resort only.

The diazo reaction. I have followed up this sign since its publication by Ehrlich, and have found it a very reliable one in spite of the opposition met with by some authors. Although it is of no avail in making the differential diagnosis between typhoid fever and a small group of severe infections, I think it is of great value, because it is so easy to make; furthermore, a positive diazo reaction is not obtained in the ordinary intestinal infections, nor in influenza or malarial fever.

The agglutination test. It is claimed that by this test the diagnosis of typhoid fever can be made in seventy-five to ninety per cent. of the cases; in fact, a given case seems hardly conclusively diagnosticated, unless a positive agglutination test is shown. In hospital practice it seems very satisfactory, indeed, to have case after case already recognized as typhoid fever show the positive Widal test, in the weaker or

[5] Among others see *Medical News*, 1897, p. 290.
[6] *Johns Hopkins' Hospital Report*, v, p. 445, 1895.
[7] Quoted in *Johns Hopkins' Hospital Report*, 1899, No. 8.
[8] *New York Medical Journal*, February 4, 1899.

[9] Die septischen Erkrankungen. *Nothnagel's Handbuch*, 1903.

stronger dilution. In private practice my experience has been that the positive Widal test has served me as a means of proving the diagnosis of typhoid fever after it was otherwise established, rather than as an absolute sign. Thus I have seen a number of ambulatory cases which at once appealed to me as typhoid infections in which the application of this test verified the probable diagnosis. These were evidently comparatively advanced cases, some of them in the relapsing stage. On the other hand, the positive Widal test was a disturbing factor in a small number of cases in which it appeared as a residue of an old infection, and had to be eliminated in the diagnosis of the present illness. The positive Widal test could, furthermore, not be obtained in a large number of cases, especially during the first weeks of the disease; in these cases a positive reaction would have been most welcome.

How can these discrepancies be explained? Do the epidemics vary in this regard? It is of sufficient importance that the practitioner should be informed of such observations, as it will enable him to avoid misunderstandings and to stand out for his diagnosis in spite of a negative agglutination test. Then, too, the element of accuracy in making the test comes into play. The gross of the profession is compelled to rely upon the expert work of central stations. Now, we are all ready to indorse the valuable work which these laboratories accomplished. Still, the profession cannot be made responsible for the accuracy of fine laboratory tests. It lies in the nature of things—that at certain times these tests are not made with the same accuracy as at other times. A young expert succeeds an old expert; the testimony of experts differ. I do not wish to be misunderstood, as if it were my intention to criticise the expert testimony of our board of health, or of other public or private experts. But when it comes to a fine examination which is to be thrown into the scale as the decisive factor in a given case, I want to be absolutely certain about the expert; in fact, I would like the testimony of several experts, so that if their testimony differs, I may know just exactly where I stand. My practical experience has shown me that experts do differ, that one, for instance, finds a leucocytosis which is at variance with that of another observer; that one finds the agglutination test positive at a certain dilution, where another finds it negative. A positive finding of pigment in the blood of fever cases as tending to prove paludial infection, which is so commonly made, should be looked upon with great suspicion. Extracellular pigment in the peripheral blood occurs only when the blood is overloaded with paludial matter in unrecognized or neglected cases of malaria. I have only seen it in two instances in a very large number of cases of malaria. I have also known of important cases in which nucleated red blood cells of an anæmic blood were taken for erithrocytes infected with the plasmodium. I think that expert testimony should be used with caution, and should be verified, like any other scientific observation.

Furthermore, this matter of agglutination is not as simple as it at first appeared. Recent studies seem to show that the infective agents of the typhoid group show the agglutination test with the blood from a variety of fevers. And although the Widal test marks a great stride in the accessory diagnostics of typhoid fever, it fails in a large number of cases which are put under observation from the beginning. It nearly always fails in the first week, is often absent in the second week, it appears and disappears in the course of the fever, and is sometimes positive only at a very late stage in severe cases.

Furthermore, I wish to emphasize one point in particular, and that is, that there are cases of typhoid fever, clinically, which do not show the agglutination test. These cases were called paratyphoid A, B, etc. The bacteriologists tell us that paratyphoid fever is rare, you can count the epidemics of paratyphoid on your fingers. Yes, but how about the paracolon infections? Is there not a large group of the latter, which are clinically typhoid fever, but which cannot be proved to be cases of typhoid fever by the various agglutination tests hitherto employed? If this be so, one is led to infer that typhoid fever, an undoubted clinical entity is caused by a variety of pathogenic factors. This fact may serve to explain cases, which can be observed right along, which, clinically to my mind, can stand for nothing else but typhoid fever, bacteriologically, or from the standpoint of the agglutination tests are absolutely negative.

One word as to the morphological blood picture. The most striking feature of the blood of typhoid fever is the leucopenia. This is so characteristic that in the differential diagnosis of this disease with influenza, pneumonia, tuberculosis, and sepsis, absence of the leucocytes points strongly towards typhoid fever. Only malarial blood shares this characteristic with typhoid blood. It is very important to know, however, that at the very onset of the disease,[10] especially when it begins in a mild, insidious way, leucocytosis of a moderate degree is the rule. In the further course of the fever the concomitant catarrh of the respiratory or intestinal tract may produce a very marked leucocytosis as high as 15,000. This is especially the case in young subjects.

Another very striking characteristic of the typhoid blood is the regularity with which the eosinophile cell disappears in the course of the fever. Its reappearance is supposed to mark the advent of a definite convalescence. But the same holds good here, as is true of the leucopenia. In the beginning of these fevers, especially in those with slow onset, the eosinophile cell need not totally disappear, nor does its reappearance absolutely preclude the occurrence of the relapse.

In conclusion: Typhoid fever *anatomically* is characterized by a specific inflammation of certain lymphatic structures of the intestinal tract. This is principally marked in the Peyer's patch of the ileum. This characteristic of the ileotyphoid has served to stamp it as a pathological unit, and has separated it from typhus and other

[10] Kast und Gritig, *Deutsches Archiv für klinische Medizin*, lxxx, p. 105.

seemingly identical fevers. *Bacteriologically* typhoid fever is a well marked group of infections characterized by a bacteræmia or toxæmia, due in a majority of the cases to the Eberth bacillus, and in a minority of the cases to a number of microorganisms, which stand between the Eberth bacillus and the coli group. These latter microorganisms have up to this date only been determined in part. *Clinically*, typhoid fever is a well defined endemic and epidemic disease with a tendency to self limitation and immunization. The disease is characterized by certain cardinal symptoms, the typhoid tongue, the headache, the tremor, the typhoid state, the slow dicrotic pulse, the enlarged, often palpable spleen, the rose spot, the characteristic temperature curve, the diazo reaction, the leucopenia, the Gruber-Widal test.

With a thorough knowledge of the anatomical changes and the clinical manifestations, it is one of the most thankful tasks of the careful, critical, and experienced practitioner to recognize this disease in its inception in the presence or absence of one or all of the symptoms enumerated in the foregoing.

79 East Seventy-ninth Street.

Correspondence.

LETTER FROM MONTREAL.

Canadian Reciprocity with Great Britain.—The Struggle against Tuberculosis.—The Montreal Medico-Chirurgical Society.—The Late Dr. James Stewart.

Montreal, *November 10, 1906.*

Reciprocity between Quebec and Great Britain was a subject taken up at the recent semiannual meeting of the College of Physicians and Surgeons of that Province. The question was thoroughly discussed, and the two following resolutions, with a proviso attached to the latter, were adopted: "That the College of Physicians and Surgeons of the Province of Quebec beg the legislature of the Province of Quebec at its coming meeting to send a request to his Majesty's Privy Council demanding the application of the Medical Act of 1886 and the amendments of 1905 to the Province of Quebec;" "that upon a favorable answer from the Privy Council, the College of Physicians and Surgeons of the Province of Quebec enter upon the necessary negotiations with the General Medical Council of Great Britain, in order to assure the establishment of reciprocity between Great Britain and the Province of Quebec, provided that those who, having obtained the British license and are demanding the license of the college of the Province of Quebec shall prior to their British registration have fulfilled all the requirements of our (Quebec) Medical Act in regard to the obtaining of our license." The purpose of this proviso is to prevent irregulars, some of whom now hold forth in the Province of Quebec, from going to Great Britain and coming back with British registration and so demanding and even forcing their registration in the Province of Quebec.

So far as Montreal and the Province of Quebec are concerned, that part of Canada is doing a good work in stamping out tuberculosis. The local legislature has set apart 400 acres in Trembling Mountain Park for the purposes of a Provincial sanatorium, but so far no other steps have been taken to bring this most desirable consummation about. Ten years after this tract of land had been set apart for this purpose by the legislature, another of 137 acres was granted for a similar purpose on Lake Edward, 1,200 feet above sea level. Toward the latter $22,000 has been subscribed, conditionally on $40,000 being obtainable for construction purposes. The legislature has enacted that all cases of tuberculosis are to be reported to the municipal health authorities. Disinfection after the death of a tuberculous patient is compulsory. Factory legislation has been enacted and is in force, and tracts and sanitary bulletins are distributed gratis. The Montreal League for the Prevention of Tuberculosis has a dispensary open six days of the week. Last year 193 patients attended, and when they are too ill to attend they are visited at their homes, where if necessary they are supplied with food and clothing. At Brehmer Rest, Ste. Agathe des Monts, there is an institution where patients pay $4 a week, and it is an institution especially designed for the care of patients convalescent from pneumonia, pleurisy, typhoid fever, anæmia, debility, etc.—in other words, a preventive institution. There is also a sanatorium at this place for incipient cases, with accommodation for twenty-one patients, at $14 weekly. The Montreal League for the Prevention of Tuberculosis has a camp for the poor of Montreal. The District of St. Francis League, organized in 1903, is doing good work in education in and about Sherbrooke.

In his presidential address, Dr. Frank R. England gave a review of the work done during his tenure of office last year as president of the Montreal Medico-Chirurgical Society. According to this address, which is published in the current number of the *Montreal Medical Journal*, the registration book shows a membership of 169 resident members, 7 nonresident members, and 43 temporary members. Twelve resident members joined the society last year, and eighteen regular meetings were held, at which there was an average attendance of fifty-six. There were presented by the members fifteen papers, twenty-three case reports, twenty-four patients, nineteen pathological and four anatomical specimens, and four pieces of new apparatus. Two lantern demonstrations were also given.

The death of Dr. James Stewart, professor of medicine and of clinical medicine in the Medical Faculty of McGill University, removes one of Canada's most distinguished physicians. He died in Montreal on the evening of the 6th of October, after nine days' illness, and the cause of death was cerebral hæmorrhage. The late Dr. Stewart was born in Ontario in 1847. He was educated at the Ottawa Grammar School and McGill University, from which latter institution he was graduated in 1869, M. D., C. M. He immediately pursued his medical studies further in Edinburgh, Berlin, and Vienna, and the latter place generally received a visit from him annually until his death. For a few years after returning to Canada he practised in two or three places in his native Province, but moved to Montreal in 1883, where

from that date to 1891 he was professor of materia medica and therapeutics in McGill University. Since 1891 he had held the chair of medicine and of clinical medicine. On the opening of the Royal Victoria Hospital he was appointed physician in chief, and held the position up to the time of his death.

Therapeutical Notes.

For the Relief of Itching of the Skin.—Besnier (*Journal de médecine de Bordeaux*, July 15th) recommends:

℞ Phenolis, ...0.50 gramme;
Glyceriti amyli, ...99.50 grammes.
M. Apply gently to the regions affected.

Migraine.—Mendel recommends against migraine the following prescription, to be taken in a cup of valerian or orange blossom tea on twenty consecutive days after breakfast. The next ten days should constitute an intermission, when the medicine is again taken for twenty days, etc., until there will be an improvement:

℞ Sodii bromatis,.....2.5 grammes;
Sodii salicylatis,.....2.25 gramme;
Aconitini, ...0.0001 gramme.
M.

Deutsche medizinische Wochenschrift, 1906, 20.

Mistletoe in Pulmonary Hæmorrhage.—Before the Société de Thérapeutique recently, Gaultier (*Le Progrès médical*, July 21, 1906) reported several cases of hæmoptysis in which the bleeding had been stopped by mistletoe of the oak (*Phoradendron album*). He used an ethereal extract of phoradendron in the form of pills containing 0.80 gramme, or 13 grains, of the extract. In seven of eight patients, suffering from phthisis with hæmoptysis the bleeding was promptly arrested, in one patient the result was negative. In the autopsy of the latter it was discovered that the hæmorrhage came from a large aneurysm of Rasmusen. The mistletoe checks hæmorrhage by reducing arterial tension.

Exophthalmic Goître Treated by the Röntgen Rays.—G. E. Pfahler and M. C. Thrush (*Therapeutic Gazette*, March, 1906) furnish notes of a case of exophthalmic goître treated with x rays. The symptoms were well developed, and the woman, aged thirty-six years, had twenty-two applications for ten minutes each, spread over twelve weeks. Improvement, which began during the fourth week, resulted in a cure. In addition to x rays, iodine, valerian, sumbul, asafœtida, nitroglycerin, strophanthin, digitalis, and belladonna were used. Pfahler, basing his remarks on a record of thirty-one goître cases treated with x rays, observes that this method of treatment is one of the most proper and effective.—Through the *Archives of the Röntgen Ray.*

Treatment of Acute Articular Rheumatism by Massage with Petroleum (*Rivista internazionale di terapia fisica*).—According to Dr. Sarafidi, massage with petroleum is the specific treatment for acute articular rheumatism. It is not, however, the petroleum alone that acts, as when exhibited internally, or injected or applied by means of compresses, it has no beneficial effect. Dr. Gourdon bears testimony to its efficacy when applied by means of massage, the most marvellous results being obtained after two or three applications. The patient is relieved of pain, and is able to move in bed. The treatment has no disadvantageous results, and may be used in cases where other medicaments, such as the salicylates, are contraindicated in consequence of kidney mischief or other complications.—Through the *Archives of the Röntgen Ray.*

Dangers of the Use of Caffeine.—The administration of caffeine in considerable dosage, and especially in certain conditions, is attended with grave symptoms and even serious results. Claisse has reported (*La Clinique*, May 15, 1906) several accidents from solutions of caffeine unusually large or in the usual dose. In a brief communication to the same journal (May 18th) Triboulet endorses his colleague's warning, and declares that caffeine, although a valued therapeutical agent, is a brutal medicament, the action of which is extremely difficult to regulate. In the first place, when given hypodermically it often excites local inflammation when the drug is deposited too superficially under the skin. Secondly, it is a powerful cerebral excitant, and capable of causing maniacal delirium, especially in aged persons. He refers to a case of a nurse who was suffering with grippe, and after taking caffeine had an attack of acute mania resembling that following the abuse of alcohol, lasting from six to eight hours. In elderly persons a primary stimulation with caffeine is liable to be followed by weakness of the myocardium. Although serviceable in urgent cases of grippe to avert a tendency to collapse and in typhoid fever in young subjects, it is a remedy that should always be mistrusted, and the practitioner should be very careful about exceeding the ordinary dose, and be always on his guard.

Implantation of the Thyreoid in the Spleen for the Cure of Cretinism.—At the recent Congress of German Surgical Association, Payr communicated the results of his experiments in implanting the thyreoid gland in the spleen, and also reported a case in which this operation was carried out in the human subject with success. The experiments were made upon dogs, cats, rabbits, or, in other words, animals in whom the spleen, on account of its favorable conditions with regard to its blood supply, lends itself readily to the imbedding of the thyreoid in the splenic parenchyma. The operative hæmorrhage ceases immediately after the introduction of this "living tampon." The cavity in the spleen is brought together above the fragment of thyreoid, and this is retained by sutures and covered by a layer of mesentery. In the early experiments, Payr, proceeding as has just been described, placed in the spleen pulp one lobe of the thyreoid taken from the same animal. In the course of a few days he extirpated the remaining lobe of the thyreoid. Nevertheless, there was not manifested the slightest sign of myoœdema or of cachexia strumipriva, even after ten months had elapsed. But if the spleen and the enclosed part of the

thyreoid were removed after a short time there would be an attack of tetanus, which rapidly led to death. Basing his views upon these experiments, Payr felt justified in performing the operation upon an infant six years of age, who was an idiot. This child, for more than three years, had had the advantage of treatment with thyreoid tablets. A portion of the thyreoid gland was removed from the mother of the child, and was implanted in the spleen of the little patient. In both cases healing of the operative wounds occurred by immediate union. There was subsequently observed a manifest amelioration of the mental state of the child, which is still undergoing improvement.—*Le Bulletin médical*, June 13, 1906.

Gummata of the Eyelids.—Gumma of the eyelids occurs rarely in ophthalmic practice, but was noted in 1738 by Astruc and later also by Lawrence in 1831, Jean Campbell in 1832, Desmours in 1847, d'Estlander in 1870, Magawly in 1873, de Zeissl, and in 1889 by de Lapersonne (*Bulletin médical du nord*). Zeissl found four cases of this tertiary lesion in 40,000 cases of syphilis. It occurs in the acquired form, and has been observed in babies contaminated by nurses. It is seen with equal frequency in either sex, and chiefly on the upper lid towards the internal angle of the eye. It generally shows itself ten to twenty years after the primary sore, but may appear even as soon as the ninth or twelfth month of the disease. Repeated traumatism is suggested to account for its localization. Two forms are recognized, viz., circumscribed and diffuse, the latter being characterized by small nodosities. The process generally begins in the tissues between the skin and the tarsus, but may also start in the skin itself. The tumor feels firm, smooth, and tense, and the skin over it often desquamates. Its course is similar to that of gummata in general, consisting of four stages, viz., (1) tumor, which varies from the size of a small pea to that of a pigeon's egg (de Wecker and Landolt), is generally painless, but may be intensely painful, and may remain a long time stationary; (2) softening; (3 and 4) characteristic ulceration and cicatrization. A circumscribed gumma may sometimes increase in extent, forming a plaque, without involving surrounding tissues. Syphilitic tarsitis occurs as a circumscribed or diffuse inflammation. In its latter form it has been described by Vogel, Magawly, and Fuchs. Bulbar lesions, *e. g.*, iritis, retinitis, and iridochoroiditis, are frequent complications. Residua are lid paresis and slight lagophthalmos. Blary has noted sclerosis of the extrinsic eye muscles, following upon gummata which have developed in them. Diagnosis of a gumma from epithelioma is made by its relatively rapid progress, the generally younger age of the patient, the absence of old standing chronic irritation as a predisposing factor, of pain and of cachexia, and sometimes by the specific history. Chancre is rare on the eyelids (Ricord). The precocious enlargement of the preauricular and submaxillary glands is a valuable diagnostic aid. Styes are readily distinguished by their peculiar characteristics. Chalazion often follows chronic blepharitis or styes, and there is no indurated base or ulceration. The prognosis is extremely good if treatment be begun early, but apart from this, total destruction of the eyelid may occur. Cure may be spontaneous. Treatment as for tertiary lesions in general. Mercury is advantageous.—*Revue de la Suisse romande* through Rosa Ford in *The Ophthalmoscope*.

Treatment of Gout.—For chronic gout Sir William Whitla recommends the following:

℞ Potassii iodidi, ... ʒij;
Potassii bicarbonatis, ... ʒvj;
Vini colchici, ... ʒij;
Aq. camphoræ, ... ℥xij.
M. Ft. Mist.

A tablespoonful to be taken three times a day in a wineglassful of water after meals.

Professor Minkowski remarks that in treating an acute attack of gout, it will be found that a brisk mercurial purge is always advantageous at the outset. This should be followed by the following medicine:

℞ Tinct. colchici, ... mxx;
Potassii citratis, ... gr. xx;
Aq. chloroformi, ... ad ℥i.
Ft. Mist. Two tablespoonfuls to be taken every four hours until the pain is relieved.

In most cases it will be found that the colchicum soon relieves the pain, and reduces the redness and swelling of the gouty joint. It should be stopped, however, as soon as the pain is relieved.

The following medicine is also a useful combination:

℞ Tinct. colchici, ... ♏ xx;
Tinct. belladonnæ, ... ♏ v;
Tinct. cimicifugæ, ... ♏ vj;
Potassii bicarbonatis, ... gr. xij;
Inf. gent. co., ... ad ℥j.
Ft. Mist.

Two tablespoonfuls to be taken every four hours until the pain is relieved.

Dr. Burney Yeo recommends for a robust patient, with an uncomplicated attack of acute articular gout, moderate doses of colchicum in combination with an alkaline saline aperient, such as the following:

℞ Magnesii sulphatis, ... ℥iss;
Magnesiæ levis, ... ʒij;
Potassii citratis, ... ʒiv;
Tinct. colchici, ... ʒij;
Aq. carui, ... ad ℥viij.
M. Ft. Mist.

Two tablespoonfuls, with two of hot water, to be taken every three hours until the bowels have been freely relieved, after which the magnesium sulphate should be omitted, and, when the pain in the affected joint is relieved, the mixture should be given every six hours instead of every three.

Occasionally, it may be that the use of colchicum is contraindicated, or because of diarrhœa, which sometimes exists in what is called suppressed gout, aperients have to be avoided, when the following mixture will be found to be useful:

℞ Sodii salicylatis, ... ʒij;
Lithii salicylatis, ... gr. xl;
Potassii citratis, ... ʒiv;
Tinct. zingiberis, ... ♏ xx;
Aq. cinnam., ... ad ℥viij.
M. Ft. Mist.

Two tablespoonfuls to be taken every two or three hours until the pain is relieved, then every five or six hours.

Through *The Practitioner*.

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THE TREATMENT OF GENERAL PARESIS BY MERCURY.

Inasmuch as the belief has become widespread that syphilis is one of the most important causes of general paresis, it has got to be more and more popular to make an attempt to delay the progress of the disease by mercurials. The ill success attendant upon the modes instituted in the earlier days of such treatment has been ascribed to insufficient doses, and the period of massive doses was a logical sequel, so that at the present time we find the use of enormous doses of mercury subcutaneously very often carried out, particularly in private practice.

Successful results have been reported, but they have been very few, and there have been not a few neurologists of note who have come to the conclusion that intense mercurialization is not only of little value, but probably productive of much harm. Their warning voices were made distinctly audible at the recent International Medical Congress, held in Lisbon, where Raymond, Sicard, and Dupré were in accord in condemning the practice. Raymond has come to believe after an extensive trial that this method of treatment is dangerous, inasmuch as he has frequently observed a marked aggravation of all the symptoms following the beginning of the injections, in some instances leading to the extremely speedy death of the patient. He looks upon the good results which have been observed from time to time as having been achieved, not in general paresis, but in syphilitic meningoencephalitis, which is often confounded with the former disease.

Sicard brought out the interesting fact that following the treatment the character of the spinal fluid remained the same, and that the mercurial treatment of paresis was to be used only in the presence of a frank complicating lesion. Dupré saw in the instances of reported improvement either remissions, which in paresis, as is well known, are very frequent, or faulty diagnoses, perhaps even more frequent. The use of mercurials is unjustified and tends, he believes, to add to the initial paresis the results of mercurial intoxication, namely, stomatitis, enterocolitis, tremor, dysarthria, agitation, mental confusion, hallucinations, and subacute cachexia. The paretic, he thinks, does not bear the mercurial treatment as well as the tabetic.

The discussion is not closed by any means, especially in view of the important fact that under the best of circumstances and with the aids of the most refined psychiatric technique the diagnosis of conditions resembling paresis is fraught with inscrutable difficulty. Even the best of psychiatrists recognize their inability to be certain in some ten per cent. of the cases at least, and it becomes of vital importance to determine if, in our anxiety not to let the small, indistinguishable tenth go untreated, we must subject the nine tenths to a process which may do the patients harm. Until we are in a better position, however, to make our diagnosis more certain, and until it can be shown beyond peradventure that massive doses of mercurials can produce disastrous results, psychiatrists will probably continue to deem it advisable to try to save the few, especially when the many are already doomed.

PULMONARY GANGRENE DUE TO OTITIS MEDIA.

Dr. Guillemot has published a work on pulmonary gangrene, one of great importance, in which he considers the subject both from the pathogenic and from the bacteriological side, but he has also thrown light on certain clinical details which should be better known. He insists on the fact that the most frequent form of pulmonary gangrene, especially in children, is of embolic origin, and that the embolus itself is the result of some affection of the ear, such as otitis media, mastoiditis, or thrombosis of the lateral sinus.

In a number of cases the symptoms of cerebral or cranial complications dominate all others, such as mastoiditis, phlebitis of the sinus, cerebral abscess, etc., so that the attention of the surgeon is entirely taken up by these manifestations. It is only by the persistency of symptoms of general

infection and the appearance of certain phenomena in the respiratory system that one may be led to suspect such a serious complication, which frequently is only found at the autopsy, that reveals the reason for the failure of the treatment.

There are, moreover, facts interesting to the physician on account of a symptomatic picture well calculated to disconcert the diagnostician, if one is not familiar with the important part played in infections by the middle ear. Patients suffering with simple chronic otorrhœa, without any evidence of mastoiditis, are suddenly seized with septicæmia with bilateral pulmonary metastases, and speedily die. The phenomena are somewhat as follows: The patient is usually young, in general a child, afflicted by a long standing fœtid otorrhœa, who is suddenly seized, in the midst of apparent good health, with symptoms which rapidly become alarming. Headache, accompanied by chills and sometimes vomiting, opens the scene, and this is followed by a high rise of temperature.

Symptoms of serious general infection soon appear, and may be represented by the symptomatic train of icterus gravis, such as deep jaundice, delirium, and cutaneous and mucous hæmorrhages. The jaundice usually is absent; the facies assumes a character often met with in putrid processes, namely, an ashen color, with some cyanosis, and an anxious expression. Prostration is marked, and vague, erratic pains in the limbs are complained of. Here and there one may discover areas of hyperæsthesia. The liver and spleen are tumefied, and the temperature remains at from 102° to 106° F. Severe chills also occur. The pulse is small and rapid, and in children it may reach 130. Albumin is present in the urine.

These very serious symptoms overshadow those present in the lungs. The pulmonary symptoms may, however, be completely wanting, but usually they exist, only to be overlooked or their real significance underestimated. There is no positive symptom *par excellence* of pulmonary gangrene, but fœtidity of the breath is quite frequent. The same cannot be said of the sputum, because the foci of gangrene do not ordinarily communicate with the bronchi. Pain in the thorax is the symptom that calls attention to the chest, and it may lead one to suspect the true nature of the lesion, its intensity being in direct relation to the superficial seat of the lesions.

Percussion gives little information, while auscultation reveals only diffused signs which may readily lead the physician astray as to their true significance. There is a slight decrease in the vesicular murmur; sometimes there are friction sounds with fine subcrepitant râles disseminated over the lung. The progress of the disease is rapid, lasting from ten to twelve days, and in all the cases collected by Guillemot the patients died. Nevertheless, the prognosis of pulmonary gangrene secondary to middle ear trouble is not always fatal, for there have been cases where recovery followed the evacuation of the foci through the bronchi.

DEFECTIVE VITALITY AND MENSTRUAL TROUBLES.

Careful observers do not now generally look upon derangements of the menstrual function as causes of nervous and hæmatic troubles; the reverse, indeed, is a very common opinion. Certain observations made by Dr. P. Diepgen and Dr. Max Schröder, of Frankfort on the Main (*Zeitschrift für klinische Medicin*, lix, 2, 4; *Semaine médicale*, October 3rd), seem to make powerfully in favor of a third supposition—that delayed, scanty, and painful menstruation may be due to some original fault of the organism which produced at the same time such morbid states as hysteria, cardiac trouble, and chlorosis.

The authors' observations relate to 75 cases of hysteria, 116 of heart disease, and 141 of chlorosis. As regards hysteria, they have been very careful to include only indisputable cases, those marked by hysterical stigmata, anæsthesia, or "hysterogenous" zones. They found that in these cases the average age at which the first menstruation occurred was nearly sixteen years, while in healthy women from the same population and of the same social position it was fourteen years and eleven months. Far from seeking to establish a relation of cause and effect between hysteria and delayed menstruation, our authors impute both abnormities to some primary defect that diminishes the normal resistance of the system to accidental causes of disease. Not only was menstruation delayed in these hysterical women, but it was scanty and came on at intervals much in excess of four weeks. Moreover, dysmenorrhœa was common among them. When menstruation had been established before the onset of hysterical phenomena, the hysteria did not generally interfere with its normal performance. In so far as uterine and ovarian affections have any part in giving rise to hysteria, it is only as exciting causes that they act, quite as an injury may in evoking traumatic hysteria.

Very much the same relations were found by the authors to exist between cardiac affections and chlorosis, on the one hand, and such menstrual derangements as have been mentioned, on

the other, and their coexistence is attributed by them to a preexisting defect of the system, one that they regard as the result of faulty development. The general tendency of late years, it seems to us, has been toward such conclusions as Diepgen and Schröder have reached, but they must be credited with having furnished very well digested facts in favor of those conclusions.

ABORTIVE SYPHILIS.

Among the curiosities of syphilology, but one that, to our mind, has a very practical bearing, in spite of the rarity of its occurrence, is the disappearance of the initial lesion without ever being followed by constitutional manifestations of the disease. Rare as it is, the phenomenon has certainly been recorded by the most competent observers. Dr. Robert W. Taylor has recently rendered a fresh service to medicine by reviewing the subject systematically in the November number of the *American Journal of Surgery.*

Dr. Taylor gives condensed histories of ten cases, four of which were observed by himself, in each of which a typical Hunterian chancre underwent involution without antisyphilitic treatment and was not followed by constitutional symptoms. The cases are all reported by men of experience, and all the patients were subjected to minute examination for periods of time sufficient to exclude the occurrence of secondary syphilis; one of them, indeed, the subject of one of Dr. Taylor's own cases, had her entire person examined daily for a number of months.

The lesson that should be learned from these cases is that there is an advantage in postponing antisyphilitic treatment until constitutional symptoms appear, for then, if they do not occur within a number of months, we may be sure that the patient is no longer syphilitic and no longer a source of danger to other persons. Perhaps, too, some instances of the apparent avoidance of general infection as the result of early ablation of the initial lesion may be explained on the assumption that in those cases such infection would not have occurred in any event.

Possibly the entire exemption from constitutional syphilis observed in these cases is but an extreme exemplification of the attenuated susceptibility of the present day in comparison with that of fifty years ago. Dr. Taylor's own observations furnish no confirmation of the hypothesis that a chancre may run an abortive course, and not be followed by constitutional symptoms, by reason of its occurring in the subject of an inherited syphilitic taint or in one who has acquired a limited immunity by having had the disease many years before. It will be seen that several interesting speculations may take their rise in the contemplation of abortive syphilis, but toward them all Dr. Taylor maintains his usual conservative attitude.

PARALEPROSY.

The words "metabolism" and "therapy"—both reincarnations—have slipped jubilantly from many a pen of late years. The pens are not yet tired of them, but they are always agog for something new, and now an extension of meaning for the prefix para comes to gladden them. Para, indeed, seems to be encroaching on the domain of the time honored pseudo, and in a way to make the nosological Cullen turn in his grave, to say nothing of Piorry. And the opportunity is fine for the young and ambitious diagnostician. Let him but make a diagnosis of para-something, and mouths agape shall acclaim him a master. There is an alluring field, too, for the imagination, and one may now eclipse the humorous declaration of the late Professor Willard Parker that scrofula was "the great-grandson of syphilis."

We have been treated to parasyphilis, paratyphoid, etc., and now we have paraleprosy. This, it seems, according to Dr. Matthias Hirschberg, of Riga (*Dermatologische Zeitschrift*, April; *Berliner klinische Wochenschrift*, October 8th), is a variant of inherited leprosy. Absolutely congenital leprosy has not been observed by him in Riga, but he has found infantile and juvenile lupus not uncommon in the offspring of parents who were both lepers. Inherited leprosy itself does not generally declare itself until the child is from three to five years old. Paraleprosy is an abortive form of leprosy. The manifestations are general nutritive and developmental disturbances, keratoses of the skin, thickenings of nerves, changes in the teeth and nails, anæsthesia, and modifications of the shape of the nose. The author's deductions are based on the observation of six married couples of which both members were leprous.

THE SPIROCHÆTA FOUND IN SYPHILIS.

The avidity with which investigators in all parts of the world seize upon and try out new discoveries is nowhere better illustrated than in connection with the reports of the ætiological relation between the *Spirochæta pallida* and syphilis. Since the appearance of the original article by Schaudinn and Hoffmann, in 1905, papers dealing with the various phases of the question have appeared in medical literature in all parts of the world. In a recent contribution to the subject, Rosenberger (*Proceedings of the Pathological*

Society of Philadelphia, ix, 3) cites more than forty papers published during the short period of time since the original discovery. He adds the results of his own observations upon thirty-four cases of syphilis made in the Philadelphia General Hospital. The material for examination was obtained from ten chancres, eleven mucous patches, four enlarged glands, three condylomata, and six skin lesions. In every specimen of material examined he found the *Spirochæta pallida*. As some observers regard syphilis as of spirillar origin, the cerebrospinal fluid was examined in fourteen cases without finding the organism in one. Attempts to cultivate the *Spirochæta pallida* were entirely without result. The organism was found in no disease that was not of syphilitic nature. In two ulcers of congenital syphilitic origin no spiral organisms were seen, nor were such organisms found in blood from the finger or from the veins of the arm.

In the examination of mucous patches from the mouth two or three other spiral organisms are met with in addition to *Spirochæta pallida*, so that the diagnosis of that organism should be made only when the observer has had considerable experience in distinguishing the various forms. The organisms are most abundant in the early stage of any lesion. Rosenberger says that it seems plausible that the organism plays some part in the ætiology of syphilis.

A NEW TRYPANOSOME.

Since the discovery of the first trypanosome such organisms have been found in connection with numerous diseases of animals and man. They are the cause of the nagana, or the tsetse fly disease, of Africa (*Trypanosoma Brucei*), of the surra of the Philippine Islands and India (*Trypanosoma Evansi*), of the dourine in Europe, Africa, and South America (*Trypanosoma equiperdum*), of a pernicious anæmia of cattle in the Transvaal (*Trypanosoma Theileri*), of the mal de caderas in South America, and of African lethargy, or sleeping sickness (*Trypanosoma gambiense*). Manson is of the opinion that *Trypanosoma Brucei*, *Trypanosoma Evansi*, and the trypanosome of mal de caderas are closely allied species, if not identical.

Recently Broden (*Bulletin de l'Académie royale de médecine de Belgique*, xx, 4), working in the Congo country, has described a trypanosome of small size (10 to 16.5 by 1 to 2 micra) which is more or less pathogenic for cattle, rats, guinea pigs, goats, asses, and monkeys. He first found the organism in a herd of cattle at Yumbi. The trypanosome in question has scarcely any undulatory membrane. It moves by undulations of the protoplasmic body, and always advances by the slender extremity, which does not appear to terminate in a free flagellum. Stained specimens show the characters of the known trypanosomes; protoplasmic body, nucleus, centrosome, undulatory membrane, and flagellum. The centrosome is terminal or almost at the posterior extremity, and always against one of the borders of the body of the parasite. The undulatory membrane is extremely straight and usually intimately applied against the body. Finally, the flagellum is not free in any part, but terminates with the protoplasmic body. This trypanosome provokes an acute infection in the rat, the guinea pig, and the goat, and a chronic infection in the sheep and in certain species of monkey. The infection is essentially like that produced by other trypanosomes pathogenic for animals. There is hypertrophy of the lymph nodes and, in some animals with rather high resistance, marked hypertrophy of the spleen. In addition to finding this parasite in the cattle at Yumbi, the author has found it in animals from Boko, from Eala, and from Leopoldville. A similar organism was found in the blood of two dromedaries in Leopoldville. The lesions produced by the trypanosome from the dromedary were similar to those produced by the same parasites from the cattle, and Broden considers the two organisms as identical.

AN AID IN ELICITING THE PATELLAR REFLEX.

There are some persons who do not seem capable of obeying the injunction to let their muscles "go loose" during a physical examination. To avoid the difficulty in an attempt to elicit the patellar reflex, Dr. W. Guttmann (*Fortschritte der Medicin*, 1906, No. 29; *Berliner klinische Wochenschrift*, September 17th) advises suspending the limb by means of two towels, one above the knee and the other below it, the upper towel so arranged as to make slight traction toward the trunk.

THE LATE DR. MUNDE.

In last week's issue we printed the remarks made by Dr. Jacobi on the occasion of the presentation to the New York Academy of Medicine of a portrait of the late Dr. Paul Fortunatus Mundé. By one of those typographical errors which are now and then unaccountably overlooked, Dr. Mundé's name was given as "Carl" instead of Paul, though he was well known personally to almost our entire editorial staff. We can only express our deep regret for the error.

News Items.

NEW YORK CITY AND STATE.

Changes of Address.—Dr. Harrison Greenleaf Sloat, from Norwalk, Conn., to 40 West Ninety-third Street, New York; Dr. Heinrich Stern, to 250 West Seventy-third Street, New York. Dr. Julius L. Werner, to 1528 South Sixth Street, Philadelphia.

The Society of Physicians of the Village of Canandaigua, N. Y.—A meeting of this society, as the guest of Dr. F. E. McClellan, was held on Thursday, November 8th. A paper entitled Obstetrics in General Practice, was read by Dr. J. H. Pratt.

The Medical Society of the County of Richmond, N. Y.—At a meeting held at the Staten Island Academy on Wednesday, November 14th, Dr. Fitz Schwyzer, of New York city, read a paper on the subject of Heart Diagnostics. The paper was discussed by Dr. J. Scales and Dr. J. J. O'Dea.

The Medical Society of the Borough of the Bronx.—The following programme was presented at a meeting held on Wednesday, November 14th: Reports of cases, histories, etc.; Papers: Systematic Syphilitic Treatment, by Dr. William S. Gottheil; Some Practical Suggestions, Essential to the Radical Cure of Hernia, by Dr. Irving S. Haynes; Discussion.

The Syracuse Academy of Medicine.—At a meeting of this academy held on Tuesday, November 13th, the following programme was presented: Résumé of Gastric Digestion, Dr. F. P. Knowlton; Modern Methods in the Diagnosis of Stomach Diseases, Dr. H. L. Elsner; Present Status of Stomach Surgery, Dr. Frederick Flaherty. Discussion opened by Dr. W. B. Reid.

The Saratoga Medical Society.—The programme arranged for a meeting held on Friday evening, November 16th consisted of a symposium on Chronic Interstitial Nephritis, divided as follows: Ætiology and Pathology, Dr. H. R. Bentley; Symptoms and Diagnosis, Dr. R. R. Castree; Complication and Treatment, Dr. J. T. Sweetman, Jr. Discussion by Dr. Varney, Dr. Thompson, and Dr. Melick.

The New York Pathological Society.—The following programme was arranged for a meeting held at the Academy of Medicine, on Wednesday evening, November 14th: Microscopic Preparations of Some Renal and Adrenal Malformations, by Dr. Edwin Beer; A Case Resembling Pseudoleucæmia in a Canary; A Case of Arteriosclerosis with Production of Bone and Bonemarrow in the Aorta of a Cockatoo, by Dr. G. R. Satterlee; A Case of Phosphorus Poisoning in a Chimpanzee, by Dr. I. Strauss; Multiple Systemic Sarcoma, by Dr. Charles Norris; A Case of Primary Carcinoma of the Bile Ducts, by Dr. A. M. Pappenheimer; Miscellaneous Cases, by Dr. O. H. Schultze.

The Medical Association of the Greater City of New York.—The following programme has been arranged for a meeting to be held on Monday evening, November 19th: Report of the committee on the death of Dr. William P. Brandegee, Dr. Edward B. Dench, chairman; Report of the committee on the death of Dr. William K. Otis, Dr. Robert W. Taylor, chairman; Report of the committee on the death of Dr. Edward A. Wheeler, Dr. Frank C. Raynor, chairman; Morphology a Necessary Factor in the Study of Pathogenic Protozoa, with lantern demonstrations, by Professor Gary N. Calkins, Department of Zoology, Columbia University; Discussion opened by Dr. James Ewing, Cornell University Medical College; The Healthfulness of Food Preserved by the Sulphites, by Dr. E. E. Smith; Discussion opened by Dr. Willis G. Tucker, Albany Medical College. In future, meetings of the association will be held on the third Monday instead of the second Monday of the month, as heretofore.

The New York Academy of Medicine.—At a meeting held on Thursday evening, November 15th, the Annual Discourse was delivered by Dr. Roswell Park, of Buffalo, whose subject was: Medicine and Surgery in Classic Art and Satire. Illustrated.

The *Section in Medicine* held a meeting on Tuesday evening, November 13th, with the following order: Reading of the minutes; Papers: (a) Some General Considerations on the Pneumococcus and Its Infections, by Dr. A. M. Pappenheimer; (b) Extrapulmonary Pneumococcus Infections, by Dr. John S. Thacher; (c) Observations on Arteriosclerosis, by Dr. H. Newton Heinemann; discussion by Dr. Peabody, Dr. Kinnicutt, Dr. Herman M. Biggs, and others; Nomination of officers.

The *Section in Genitourinary Diseases* will hold a meeting on Wednesday evening, November 21st, with the order as follows: (a) A Case Illustrating the Result of Persistent Conservative Treatment of Hypertrophy of the Prostate, by Dr. V. C. Pedersen; (b) A Case of Nephrectomy for Pyelonephritis Five Years After Operation, by Dr. Joseph Wiener; (c) Two Cases of Amputation of the Penis for Epithelioma with Transplantation of the Urethra, by Dr. Follen Cabot; Paper: Gonorrhœal Prostatitis, by Dr. J. Bayard Clark; Presentation of specimens: (a) A Specimen of Hypertrophied Prostate; (b) Ureteral Calculus with Radiogram, by Dr. Howard Lilienthal; Nomination of officers for the ensuing year.

The *Section in Obstetrics and Gynæcology* will present the following order at a meeting to be held on Thursday evening, November 22nd: Presentation of patients; Demonstration of specimens; General discussion on The Value of the Differential Leucocyte Count in Gynæcology and Abdominal Surgery, by Dr. Sondern, Dr. Ditman, Dr. Hastings, Dr. Gibson, Dr. Taylor, and others; Nomination of officers.

The *Section in Laryngology and Rhinology* will hold a meeting on Wednesday evening, November 28th, with the following order: Presentation of patients: (a) A Foreign Body Removed from the Œsophagus, by Dr. Emil Mayer; (b) Urticaria of the Larynx, by Dr. W. Freudenthal; (c) Syphilitic Ulceration of the Larynx in a Tuberculous Patient, by Dr. T. J. Harris; Paper: Mixed Laryngeal Infection, by Dr. Carl E. Munger; Exhibition of specimens and new instruments; Nomination of officers for the ensuing year.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending November 10, 1906:

	November 10.		November 3.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	138	20	99	24
Smallpox	..	..	..	..
Varicella	36	..	48	..
Measles	57	2	64	3
Scarlet fever	84	3	73	5
Whooping cough	31	6	41	5
Diphtheria	290	39	239	25
Tuberculosis pulmonalis	319	163	387	176
Cerebrospinal meningitis	10	10	6	11
Totals	965	243	957	249

Society Meetings for the Coming Week:

MONDAY, *November 19th.*—Medical Association of the Greater City of New York; New York Academy of Medicine (Section in Ophthalmology); New York County Medical Association; Hartford, Conn., Medical Society; Chicago Medical Society.

TUESDAY, *November 20th.*—New York Academy of Medicine (Section in General Medicine); Medical Society of the County of Kings, N. Y.; Buffalo Academy of Medicine (Section in Pathology); Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Baltimore Academy of Medicine; Clinical Society of the Elizabeth, N. J., General Hospital; Binghampton, N. Y., Academy of Medicine.

WEDNESDAY, *November 21st.*—New York Academy of Medicine (Section in Genitourinary Diseases); New York Society of Dermatology and Genitourinary Surgery (private); New York Society of Internal Medicine (private); Women's Medical Association of New York City (New York Academy of Medicine); Medicolegal Society, New York; Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Jersey City); Buffalo Medical Club; New Haven, Conn., Medical Association.

THURSDAY, *November 22nd.*—New York Academy of Medicine (Section in Obstetrics and Gynæcology); New York Orthopædic Society; Brooklyn Pathological Society; New York Celtic Medical Society (private); Roxbury, Mass., Society for Medical Improvement (private); Pathological Society of Philadelphia; Church Hill Medical Society of Richmond, Va.

FRIDAY, *November 23rd.*—New York Clinical Society (private); New York Society of German Physicians; Academy of Pathological Science, New York; York-

ville Medical Association, New York (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

SATURDAY, *November 24th.*—New York Medical and Surgical Society (private); Harvard Medical Society, New York (private); Lenox Medical and Surgical Society, New York (private); West End Medical Society, New York (private).

PHILADELPHIA AND THE MIDDLE STATES.

The Northern Medical Association of Philadelphia will celebrate its sixtieth anniversary on December 5th. There will be a special meeting of the association and a banquet will be held.

The West Philadelphia Medical Association.—At the meeting of the West Philadelphia Medical Association, held on Monday evening, November 5th, Dr. Myer Solis-Cohen read a paper on Latent Diphtheria, and Dr. A. H. Stewart read a paper on Antitoxine: Its Preparation and Use.

The Northwestern Medical Society.—At the regular meeting of the Northwestern Medical Society, held on Monday evening, November 5th, there was a general discussion of the uses of x rays and radium. Dr. Thomas S. Stewart spoke of the application of x ray technique to the surgery of general practice and exhibited some apparatus. Mr. Samuel J. Riegel also exhibited some apparatus. Dr. W. Wayne Babcock opened the discussion.

Joint Meeting of New York and Philadelphia Neurological Societies.—These two societies will hold a joint meeting in the College of Physicians and Surgeons, Philadelphia, on Saturday, November 24th, at 8.15 p.m., to be followed by an informal smoker at the University Club. Dr. McCarthy will read a paper on Landry's Paralysis, Dr. Spiller on Psychasthenia with epileptiform attacks, and a discussion of Marie's views on Aphasia will be taken up.

Philadelphia Pathological Society.—At the regular semimonthly meeting of the Philadelphia Pathological Society, held on Thursday, November 8th, Dr. D. J. McCarthy showed a tuberculous tumor of the brain; Dr. H. R. Alburger exhibited an aorta showing acute infectious thromboarteritis; Dr. C. Y. White exhibited some miscellaneous specimens; Dr. C. B. Farr reported a case of bronchial calculi; Dr. J. D. Steele demonstrated Sahli's desmoid test and the muscle nucleus test; and Dr. R. S. Lavenson reported a probable case of typhoid meningitis.

Philadelphia Personals.—Dr. W. W. Richardson has been appointed resident physician of the State Hospital for the Insane at Norristown, Pa.

Dr. J. M. Stern, of Pittsburgh, Pa., and Dr. R. W. Plummer, of the United States Navy, are registered at the Philadelphia Polyclinic and College for Graduates in Medicine.

Mr. Comly Shoemaker has been appointed superintendent of the Samaritan Hospital, Philadelphia.

The Committee on Public Gardens of the Civic Club of Philadelphia held a meeting on November 6th, in which the last summer's work was discussed. Over 500,000 children had taken advantage of the gardens during the summer months, making an average daily attendance of about 12,000. The committee decided to urge that the gardens be kept open all the year, so that the children may derive the benefit that would naturally follow their constant use as playgrounds.

A New System of Medicine.—Messrs. Lea Brothers & Co. announce the early publication of a new system of practice entitled Modern Medicine, to the editing of which Dr. William Osler has devoted more than two years. The work will appear in seven octavo volumes of about 900 pages each. In collecting material for this work Dr. Osler has not been hampered by geographical limits, but has enlisted the services of the leading medical thinkers throughout the civilized world, even to the recognition of the advancing medical thought of Japan. The work will completely represent the theory and practice of medicine in its most modern aspects.

The College of Physicians of Philadelphia.—The following programme was arranged for a meeting of the *Section in General Medicine,* held on Monday evening, November 12th: Exhibition of a Patient with Congenital Disease of the Pulmonary Valves of the Heart, by Dr. A. P. Francine; exhibition of a patient with Marked Venous Obstruction of the Trunk, by Dr. H. A. Hare; a paper on Preicteric Itching and one entitled The Development of Cardiac Murmurs During Attacks of Biliary Colic, by Dr. David Riesman; a paper entitled Further Observations on Metabolism in Purpura, by Dr. David L. Edsall, and a paper by Dr. George W. Norris entitled The Estimation of the Functional Capacity of the Heart.

Philadelphia Academy of Surgery.—At the meeting of the Philadelphia Academy of Surgery, held on Monday evening, November 5th, Dr. James K. Young showed a case of laminectomy for tuberculosis of the spine, with recovery; Dr. Harry S. Carmany exhibited a case of excision of half of the lower jaw and half of the tongue for epithelioma; Dr. Morris Booth Miller exhibited a case of rupture of the kidney; Dr. George Erety Shoemaker reported a case of sarcoma of the ischiorectal fossa; Dr. John B. Roberts reported a case of true double lower lip treated by a plastic operation and a case of vicious union of a fracture, which was successfully treated by osteoma, nailing, and vertical traction; and Dr. R. P. McReynolds reported a case of gunshot wound of the spleen.

Scientific Society Meetings in Philadelphia for the Week Ending November 24, 1906.—*Monday, November 19th,* Northeast Branch, Philadelphia County Medical Society. *Tuesday, November 20th,* Section in Ophthalmology, College of Physicians; Dermatological Society; Academy of Natural Sciences; North Branch, Philadelphia County Medical Society. *Wednesday, November 21st,* Section in Otology and Laryngology, College of Physicians; Association of Clinical Assistants, Wills Hospital; Franklin Institute. *Thursday, November 22nd,* Pathological Society; Entomological Section, Academy of Natural Sciences; Section Meeting, Franklin Institute. *Friday, November 23rd,* South Branch, Philadelphia County Medical Society; Northern Medical Association.

The Health of Philadelphia.—During the week ending November 3, 1906, the following cases of transmissible diseases were reported to the Bureau of Health:

	Cases.	Deaths.
Malarial fever	1	0
Typhoid fever	94	9
Scarlet fever	24	1
Chicken pox	36	0
Diphtheria	83	10
Cerebrospinal meningitis	2	1
Whooping cough	22	3
Measles	21	1
Tuberculosis of the lungs	82	48
Pneumonia	38	33
Erysipelas	5	0
Septicæmia	1	1
Anthrax	1	0
Cancer	19	19

The following deaths from other transmissible diseases were reported: Tuberculosis, other than tuberculosis of the lungs, 11; diarrhœa and enteritis, under two years of age, 21; puerperal fever, 1; tetanus, 1. The total mortality was 436, in an estimated population of 1,469,126, corresponding to an annual death rate of 15.43 in 1,000 population. The total infant mortality was 111; under one year of age, 95; between one and two years of age, 16. There were 28 still births, 21 males and 7 females. No unusual meteorological phenomena were recorded by the U. S. Weather Bureau. The total precipitation was 0.62 inch.

BOSTON AND NEW ENGLAND.

The New England Hospital for Women and Children.—By the will of Lucy C. Coburn, of Ipswich, Mass., a fund of $25,000, in trust, is bequeathed to the New England Hospital at Boston.

The Maine Academy of Medicine and Science.—At the seventy-seventh meeting of this academy, held at Portland, on Wednesday, November 14th, Dr. G. A. Pudor read a paper on Radium, and a paper on the Treatment of Fractures was read by Dr. G. A. Peaslee.

The Franklin District Massachusetts Medical Society.—The following programme was presented at a meeting of this society, held at Greenfield, on Tuesday, November 13th: Gallstones, Dr. C. L. Upton; Intussusception, Dr. C. F. Canedy.

The Vermont State Tuberculosis Commission, in its report to the legislature, recommended that in place of a new commission the educational work relating to the prevention and cure of tuberculosis be continued by the State Board of Health, and that an appropriation be made by the State for this purpose.

The Rockingham County (N. H.) Medical Society.—At the second annual meeting of this society, held at Exeter, on

Thursday, November 8th, officers were elected as follows: President, Dr. A. B. Sherburne, of Portsmouth; vice-president, Dr. John J. Berry, of Portsmouth; secretary, Dr. Walter Tuttle, of Exeter; treasurer, Dr. Alice M. Chesley, of Exeter; censor, Dr. Charles A. Morse, of Newmarket.

Personal.—Dr. Walter J. Marcley, superintendent of the Massachusetts State Sanatorium at Rutland, has resigned, to accept the superintendency of the Minnesota State Sanatorium for tuberculous patients, at Walker Minn. This institution is now being built on the shore of Leech Lake. It is to be completed in the spring of 1907.

Dr. John P. Brown, who has been connected with the Taunton Insane Hospital since 1878, for several years as superintendent, has resigned on account of advancing age, he having reached the age of seventy-three years. Dr. Arthur V. Goss, who has been resident physician at the hospital for several years, has been named as Dr. Brown's successor.

The Mortality of Boston.—The number of deaths reported to the board of health for the week ending November 3rd, was 210, as against 190 the corresponding week last year, showing an increase of 20 deaths, and making the death rate for the week 18.19. The number of cases and deaths from infectious diseases was as follows: Diphtheria, 64 cases, 2 deaths; scarlatina, 20 cases, no deaths; typhoid fever, 35 cases, 5 deaths; measles, 1 case, no death; tuberculosis, 42 cases, 21 deaths; smallpox, no cases, no death. The deaths from pneumonia were 15, whooping cough 1, heart disaese 19, bronchitis 1, marasmus 7. There were 14 deaths from violent causes. The number of children who died under one year of age was 41, under five years of age 52, persons over sixty years of age 39, deaths in public institutions 80.

BALTIMORE AND THE SOUTH.

Personal.—Dr. John W. Daniel, of Savannah, is contemplating the construction of a private sanitarium, which will be devoted to obstetrical and gynæcological work.

The Charity Hospital at New Orleans to Receive $200,000.—By the will of Mrs. Virginia McRae Delgado, $20,000 is bequeathed to Charity Hospital. To this sum a nephew of the testatrix, Mr. Isaac Delgardo, has added as a gift $180,000, making in all $200,000, for the erection and equipment of a memorial building, to be known as the Delgardo Memorial.

The Chatham County (Ga.) Medical Society.—At a recent meeting of this society, held at Savannah, the subject of free advertising by members was discussed, and it was decided to request the local newspapers not to print the name of any member of the society in connection with the account of any emergency or accident in which the physician was in attendance, unless it is to the interest of the public to know the name of the physician. This request to the press was signed by practically every reputable practitioner in Savannah.

The Mortality of Baltimore.—The report of the Health Department for the week ending November 3rd showed a total of 164 deaths, as compared with 180 the corresponding week of last year, 208 in 1904, and 148 in 1903. The annual death rate in 1,000 of population was: Whole, 14.07; white, 11.84; colored, 26. The principal causes of death were:

Measles	1	Pneumonia	15
Whooping cough	4	Diarrhœa, under 2 years of age	6
Diphtheria	1	Bright's disease	16
Consumption	28	Congenital debility	12
Cancer	7	Lack of care	2
Apoplexy	7	Old age	2
Organic heart disease	9	Accidents, etc.	16
Bronchitis	2		

The births reported were: Total, 336; white, 243; colored, 93; males, 619, females, 167. The following number of cases of infectious diseases were reported:

Diphtheria	35	Mumps	1
Pseudo-membranous croup	2	Whooping cough	2
Scarlet fever	9	Chicken pox	1
Typhoid fever	18	Consumption	15
Measles	10		

CHICAGO AND THE WEST.

The Central Tri-State Medical Society, which includes the States of Kentucky, Ohio, and West Virginia, held its twenty-third quarterly meeting at Ironton, Ohio, on Thursday, November 8th, in conjunction with the *Ninth Councilor District, Ohio, Medical Society,* which comprises the counties of Gallia, Meigs, Vinton, Hocking, Pike, Scioto, and Lawrence. The programmes of the two organizations were merged and the meeting proved one of special interest.

Chicago Personals.—Dr. Casey A. Wood has been appointed professor of ophthalmology and chief of the ophthalmological department of the Northwestern University Medical School, with service at Wesley Hospital. Dr. Frank Allport has recently been appointed to the chair of otology in the university to fill the vacancy made by the resignation of Dr. Henry Gradle. Dr. Arthur R. Reynolds, formerly health commissioner of Chicago, has resumed practice in that city.

Statement of Mortality of Chicago for the Week Ending November 3, 1906, compared with the preceding week and with the corresponding week of 1905. Death rates computed on United States Census Bureau's figures of midyear populations, 2,049,185 for 1906, 1,990,750 for 1905:

	Nov. 3, 1906.	Oct. 27, 1906.	Nov. 4, 1905.
Total deaths, all causes	482	505	498
Annual death rate in 1,000	12.26	12.85	13.04
Sexes—			
Males	297	275	311
Females	185	230	187
Ages—			
Under 1 year of age	98	110	81
Between 1 and 5 years of age	36	39	37
Between 5 and 20 years of age	40	32	33
Between 20 and 60 years of age	207	214	229
Over 60 years of age	101	110	118
Important causes of death—			
Apoplexy	10	7	20
Bright's disease	36	35	41
Bronchitis	12	13	8
Consumption	54	49	40
Cancer	21	24	13
Convulsions	6	7	1
Diphtheria	12	12	17
Heart diseases	46	41	46
Influenza	1	2	0
Intestinal diseases, acute	31	43	32
Measles	1	0	0
Nervous diseases	23	24	21
Pneumonia	75	69	77
Scarlet fever	4	8	0
Suicide	8	14	5
Typhoid fever	6	8	6
Violence (other than suicide)	27	35	44
Whooping cough	4	0	2
All other causes	105	114	125

GENERAL.

The Mississippi Valley Medical Association.—At the annual meeting of this association, held at Hot Springs, Ark., on November 6th, 7th, and 8th, the election of officers resulted as follows: President, Dr. H. Horace Grant, of Louisville, Ky.; first vice-president, Dr. G. A. Herbert, of Hot Springs, Ark.; second vice-president, Dr. T. C. Witherspoon, of St. Louis, Mo.; secretary, Dr. Henry E. Tuley, of Louisville, Ky., reelected; treasurer, Dr. S. C. Stanton, of Chicago, reelected.

The Seventieth Anniversary of Professor Bernhard Fraenkel, of Berlin.—On Saturday, November 17, 1906, Professor Fraenkel will have arrived at the age of seventy years. Numerous proposals to celebrate the event by a banquet, a special celebration by the Berlin Laryngological Society, of which he is the president, were respectfully declined by him. His assistants, Professor Edmund Meyer, Dr. Arthur Alexander, Dr. Georg Finder, and Dr. Berger, have arranged an exhibition illustrative of the progress of laryngology in the past fifty years, in honor of the event, to be held in the Kaiserin Friedrich Haus in the Louisen Strasse, in Berlin, from November 17th to the 30th, and this, because of its value historically, the professor has accepted. In order that this exhibit might be complete the cooperation of laryngologists throughout the civilized world was sought in the early spring of this year. At the regular meetings of the various national associations of American laryngologists, it was voted to participate, and their interests were placed in the hands of Dr. Emil Mayer, of New York city. As a result of hearty cooperation over one thousand instruments, appliances, models used in teaching, etc., each bearing a distinctive tag with the word "America" stamped across the face were sent, and the best represented country aside from Germany in this exhibit will be our own.

Letters and cablegrams from all over the world will be sent congratulating the professor, who is well known as the dean of laryngologists, for many years the head of the department of laryngology in the University of Berlin and for nineteen years, since its establishment, the editor of the *Archiv für Laryngologie.*

Pith of Current Literature.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

November 1, 1906.

1. The Growth of Truth: As Illustrated in the Discovery of the Circulation of the Blood, By WILLIAM OSLER.
2. The Classical Symptoms of Hysteria, By PIERRE JANET.
3. Flexible Balancing Shoes, By L. R. G. CRANDON.
4. Epidemic Cerebrospinal Meningitis. A Study of Its Ætiology, Diagnosis, and Epidemiology Based Chiefly Upon the Cases Occurring in Worcester, Mass. (*Concluded*), By ERNEST L. HUNT.

3. Flexible Balancing Shoes.—Crandon describes the foot action in walking as follows: 1. The weight is placed on the rounded heel. 2. As the sole comes to the ground, the rounded heel throws the weight along the outer ridge of the plantar region to the distal end of the fifth metatarsal. 3. The toes take the ground in order, beginning with the little toe. 4. As the toes take the ground, the weight leaves the heel, and the whole foot grasps the ground like a hand, heel and great toe approach each other, and every joint in the foot combines in arching. Thus the walking foot is not a hock and a hoof, but rather a hand, with the heel a grasping falon. 5. All weight, lastly, rests on the distal ends of the first and fifth metatarsals, and the toes give a final push as the foot leaves the ground. At this last action, the toes are wide spread, the great toe is strongly adducted, and the ankle joint in the active balancing has a considerable lateral excursion in both directions. In accordance with this description a fitting shoe should be thus: The forward half of the shoe should be a bag of leather of any shape desired, but attached to such a flexible shank that the shoe does not hold the foot or any part of it in this or that position, or in this or that shape, but allows the foot free action, the free action of a properly gloved hand. This shoe will double the walking endurance of the individual who has had no trouble with his feet.

4. Epidemic Cerebrospinal Meningitis.—Hunt concludes his paper on a study of the ætiology, diagnosis, and epidemiology of epidemic cerebrospinal meningitis. Basing his observations chiefly upon eighteen cases, which occurred in Worcester, Mass., from March, 1905, to March of this year, he observes that prophylaxis should consist in careful cleanliness of the upper air passages, absolute prohibition of promiscuous expectoration, and clean streets. One noteworthy peculiarity of the disease is its remarkable selective propensity. It may be stated that the diplococcus intracellularis meningitidis of Weichselbaum is the essential ætiological factor, and that the diagnosis may be positively made in nearly all cases by the examination of the spinal fluid, obtained during life by lumbar puncture, and in no other way; it seems to be an inhalation disease, and is therefore preventable. Of the eighteen patients fourteen died, one discharged from the hospital apparently well, but dying from probable recrudescence six weeks later, one well, one well except for total deafness, and one improved; the total mortality was therefore 83.3 per cent.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

November 10, 1906.

1. Headache and Eyestrain, By GEORGE M. GOULD.
2. Headaches Due to Aural Disease, By PHILIP HAMMOND
3. Constitutional Headache, By GEORGE L. WALTON.
4. Chronic Headache Associated with Pelvic Diseases, By F. H. DAVENPORT.
5. Injuries to the Child's Head During Labor, By B. SACHS.
6. Pregnancy and Labor Complicated by Anterior Fixation of the Uterus, By G. M. BOYD.
7. Instrumental Dilatation of the Parturient Uterus, By F. S. NEWELL.
8. Manual and Instrumental Dilation of the Pregnant and Parturient Cervix, By J. CLIFTON EDGAR.
9. The Medical Treatment of Cases of Cancer, By ROBERT REYBURN.
10. Röntgenization in the Treatment of Cancer. With Record of Cases in Which the Evidences of Malignant Disease Have Disappeared Under Röntgen Radiation, By CLARENCE EDWARD SKINNER.
11. Methylthionin Hydrochlorid in Inoperable Cancer, By ABRAHAM JACOBI.
12. Nostrums and Fraudulent Methods of Exploitation, By L. F. KEBLER.
13. Utility of Saline Solution in Treatment of Fever, By J. MADISON TAYLOR.
14. Foreign Bodies in the Bronchi. Their Successful Removal with the Bronchoscope, By EMIL MAYER.
15. Diagnosis of Tuberculosis in Infants and Children, By EDWIN E. GRAHAM.

4. Chronic Headache Associated with Pelvic Disease.—Davenport concludes that: 1. Chronic headache associated with pelvic disease is accidental, except when it is the most marked symptom of irregular or scanty menstruation. 2. In other pelvic disorders, it is usually an expression of the neurasthenic condition of which the pelvic lesion is merely one factor or accessory predisposing cause. 3. Treatment for the first class of cases consists of general building up measures and local depletion. 4. Treatment of the second class consists in the rectification of existing local trouble unless specially contraindicated, but the main reliance is to be placed on prolonged and systematic treatment of the neurasthenia. As a local depletory measure, when such is indicated, he says nothing is so simple in application and so efficient as the use of wool tampons soaked in glycerin. As soon as the slightest suspicion of headache makes its appearance, or even anticipating this by a day or two, such a tampon should be inserted into the vagina and allowed to remain for two days. The result will be a profuse watery discharge of blood serum which relieves the engorged pelvis bloodvessels and equalizes the circulation.

5. Injuries to the Child's Head During Labor.—Sachs warns the obstetrician that, other things being equal and, above all, the life of the mother not being in danger, it is wise to curtail the period of labor as much as possible, and not necessarily to wait until the child's heart action becomes feeble. Many children might have escaped epilepsy, idiocy, and paralysis if the period of labor had been properly managed. He is firmly convinced that protracted labor is the most powerful factor in producing epilepsy, idiocy, or paralysis in the new born; one or often all of them are developed and may be due to conditions present at the time of birth. He further says that the medical men in attendance at confinements have for years followed a policy of indifference toward the welfare of the child, and have allowed too many children to be borne into the world after labor unnecessarily prolonged and in conditions that are a distinct disadvantage to society and to the individuals for the entire period of their natural lives.

6. Pregnancy and Labor Complicated by Interior Fixation of the Uterus.—Boyd reviews the literature with statistics of pregnancy of labor complicated by anterior fixation of the uterus, and cites three cases of his own for the purpose of determining whether such operation is justifiable from the obstetrical standpoint. He concludes that it is unwise to perform fixation or suspension of the uterus before the menopause.

7, 8. Manual and Instrumental Dilatation of the Parturient Uterus.—Newell speaks of the various methods of dilatation of the parturient uterus with special reference to the indications for and the results of the use of the steel dilators as a substitute for the manual method of dilation, particularly in those cases in which some urgent indication for the termination of pregnancy or labor is present. Such conditions in a general

way are hæmorrhage, toxæmia, and diseases complicated by pregnancy, to which must be added the condition of abnormal rigidity of the cervix which Nature fails to overcome even after a fair trial. There is no doubt that the hand is the best and safest dilator, but its usefulness is limited by the fact that it is easily exhausted. The author describes a dilator invented by himself.—Edgar says that artificial removal of the barrier of the cervix can be accomplished in three ways, namely: (1) By stimulating the contractions of the uterus and increasing intrauterine pressure by the introduction of foreign bodies within the uterus, as the uterine bougie, the gauze tampon, or hydrostatic bags; (2) by overcoming the sphincter action of the cervix with the hand or hands or metal instruments; (3) by incision of the sphincter, as in deep cervical incisions, or vaginal Cæsarean section.

9, 10. **Cancer.**—Reyburn believes that cancer is simply an error of cell development depending on the retention of waste matter in the system. The treatment, therefore, of cancer may be divided into two classes, namely, the preventive and the curative. There are at least two distinct types or classes of patients suffering from cancer who require and can be benefited by medical counsel: 1. The anæmic variety, to be treated with iron in large and rapidly increasing doses, with a carefully restricted diet. 2. The plethoric type; patients consuming too much animal food, who are to be treated by dieting and enforcing exercise.—Skinner makes the statement that cancerous processes are amenable to röntgenophry, whether superficially or deeply located, and that it is capable of accomplishing benficial results in cases of so severe a type as to present absolutely no hope even of relief under any other management. Certainly not all cases respond with equal readiness, and if necessary the knife should be combined with the ray.

11. **Methylthionin Hydrochlorid in Inoperable Cancer.**—Jacobi speaks of his experience with methylene blue in the treatment of cancer, which treatment he has used for the last fifteen years. He gives it in pills in small doses, 2 grains a day, and runs up slowly to 3, 4, and 6 grains a day, adding to the 2 or 4 grain pills three quarter grain of extract of belladonna daily; or arsenous acid one fortieth, one thirtieth, up to one twentieth of a grain three times a day, if the occasion requires with strychnine or extract of nux vomica. He is of the opinion that he has seen less relapses in cases of cancer of the uterus, where an operation has been performed upon the patient, and he states that he has restored a good many people to their work, and has kept a number of people alive two, three, six, and eight years longer than would have been their share.

13. **Utility of Saline Solution in Treatment of Fever.**—Taylor recommends the use of physiological saline solution (6 to 1,000) by mouth in all febrile states in children, usually half an hour before feeding time, every three hours, in infants in milk or with the food. In any disease attended by marked fever, the loss of the blood's main salt, sodium chlorid, is not replaced, owing to restricted diet, anorexia, and other factors, the blood is deprived of one of its most important constituents. The salt solution overcomes this deficit.

MEDICAL RECORD.

November 10, 1906:

1. A Plea for a More Rational Therapy in Tuberculosis, By F. M. POTTENGER.
2. Neurasthenia, By HUBERT RICHARDSON.
3. Electricity in the Treatment of Disease, By JOHN V. SHOEMAKER.
4. Postoperative Gastric Paralysis—Acute Dilatation of the Stomach, By W. A. BASTEDO.
5. The Exceeding Importance of a Clear Understanding of the Vasomotors and the Utilization of their Function to Get Best Therapeutical Results. By W. C. ABBOTT.
6. Syphilis of the Nasal Fossæ, By ALBERT BARDES.
7. Obliterative Endarteritis of Femoral Distribution with Gangrene of the Feet, By EUGENE H. EISING.
8. The Use of Oxygen in Asphyxia Neonatorum, By C. D. SPIVAK.

2. **Neurasthenia.**—Richardson describes neurasthenia, a disease most often found in hospitals in its uncomplicated form, but often accompanied by other morbid conditions which mask its symptoms, rendering diagnosis difficult. The wrtier has had the opportunity of observing a considerable number of cases, and he attempts in this paper to give a symptomatic picture of the disease for the benefit of the general practitioner, who is usually the first consulted by the patient. The treatment by the general practitioner is usually entirely symptomatic, consisting of bromides in increasing doses, with the addition of hypnotics, the various coal tar products, and headache powders, with little or no effort to treat the underlying condition; the patient becomes worse or fails to improve, finally consulting a specialist or entering an institution. These patients usually come from the city, though, perhaps, if the statistics of the relation of the cases to the population from which they are drawn were obtainable it would be found that there was little or no difference. Among the principal symptoms are mentioned: Headache, bitemporal or in the occipital region; insomnia; vertigo; pains in the spinal column; disturbed digestion; maximum blood pressure is low in proportion to the mean; a special angina; depression of the functions of the genital organs; all these signs are augmented by a mental condition of general depression of the faculties without perversion. Neurasthenia is found among those men who lead strenuous lives, having great responsibilities and anxieties, without taking a sufficient amount of recreation and physical exercise, combined with irregular and bolted meals. The ætiology can be classed under four heads: (1) Mental strain; (2) disturbances of digestion, malnutrition, and autointoxication; (3) toxæmia from infectious diseases; (4) traumatism, and shock. There is no specific treatment in neurasthenia. Removal of the cause of worry, if possible, increased physical exercise, anything to interest the patient in some form of recreation, attention to the digestion, to the removal of the toxines from the system, and to the building up of the whole system in every possible way. Drugs, such as the bromides, the coal tar derivatives, etc., should be used as little as possible on account of their effect upon the assimilation, the circulation, and the blood; the coal tar preparations are particularly contraindicated on account of their destructive action on the red corpuscles. Bromides depress the heart and the vasomotor system, and should be used with caution.

3. **Electricity in the Treatment of Disease.**—Shoemaker remarks that with regard to the modus medendi, or the physiological action of the agent, we may observe that electricity may be used to produce the following effects: 1. Local necrosis, or an eschar. 2. To disturb the electrical relations of the elements of nerves and muscles. 3. To modify metabolism. 4. To act as a temporary stimulant to nutritive processes, and especially to the nervous system and the circulatory apparatus. 5. To accomplish certain local effects by stimulating physiological functions. 6. To destroy parasites upon the surface of the body. 7. To produce electrolysis. 8. To produce intense light. 9. To produce high degree of heat. 10. To produce magnetic effects. The author states that he has not exhausted the list, and closes his paper in saying that electricity, in most cases, is to be regarded as only an adjuvant to other treatment. While giving the special electric application we should also give appropriate remedies to act upon the glands of excretion and secretion. We should consider the state of the blood and give hæmatinics to increase the blood corpuscles and hæmoglobin, or give antidotes to certain toxines, or eliminants to

carry off gouty, rheumatic, or other pathogenic agents, in addition to our prescription of electricity. Massage, exercise in the fresh air, a proper diet, regulation of habits of the individual, all these are accessory agents and should be conjoined with the electrical treatment if we wish to obtain the best results. Such, indeed, is the intelligent medical use of this agent in the hands of the qualified physician. Without such therapeutical accessories, electricity, like massage, is very restricted in its usefulness and tends toward charlatanism.

6. **Syphilis of the Nasal Fossæ.**—Bardes says that no attempt should be made to correct a deformity due to syphilis until the patient has been subjected to a course of medication covering a period of two years, otherwise the surgical procedure may excite irritation and ulceration. A nasal deformity can be greatly improved by subcutaneous injections of paraffine. It is better to inject a small amount at different sittings than to inject too much at one time, thus avoiding sloughing and other mishaps. Artificial bridges and supports have been tried and found wanting. For a perforated palate, a dental plate of hard rubber gives the most satisfaction.

8. **The Use of Oxygen in Asphyxia Neonatorum.**—Spivak writes that at the maternity department of St. Luke's Hospital, Denver, in desperate cases of asphyxia neonatorum, a novel method has been adopted at the independent suggestion of two nurses, each unknown to the other. In one case, after having exhausted all his skill, resources, and strength, the attending physician concluded that the child was beyond human aid, and left the hospital in despair. The attending nurse cast her eye on the tank of oxygen which was standing in the corner of the room, and decided to make an experiment of her own. She, therefore, turned on a stream of oxygen into the nostrils of the baby, and was overawed to see the infant take its first breath. On the following day the attending physician was amazed to find a live baby in the arms of its mother. The other nurse, in a similar case, suggested to another attending physician, after he had thrown up the sponge, to use a few whiffs of oxygen. He grasped at the opportunity of trying a novel procedure and was repaid by having saved a human life, and by the gratitude which shone in the eyes of the parturient and nurse.

BRITISH MEDICAL JOURNAL.

October 27, 1906.

1. The Growth of Truth: As Illustrated in the Discovery of the Circulation of the Blood, By W. Osler.
2. The Hospital Treatment of Curable Cases of Mental Disorder, By E. Goodall.
3. Some Principles of the Treatment of Fractures, By J. E. Bowser.
4. Note Concerning the Bacterioscopic Analysis of Excremental Pollution, By E. Klein.
5. Note on the Estimation of Blood Pressure, By T. Lewis.

(Seventy-Fourth Annual Meeting of the British Medical Association.)

Section of Medicine.

6. The Present Status of Military Medical Arrangements in Canada, By J. T. Fotheringham.
7. Aminoacids and Metabolism, By L. F. Barker.
8. A Discussion on Over Nutrition and Under Nutrition, By R. H. Chittenden, Professor Halliburton, and others.
9. A Discussion on Some Aspects of Heart Block, By Professor Aschoff, J. Mackenzie, J. Erlanger, and others.
10. Case of Stokes-Adams Disease, By Sir J. Barr.

3. **Treatment of Fractures.**—Bowser calls attention to the important modifications which have been introduced into the treatment of fractures. These new developments consist in: 1. The early employment of massage and movement, and a less absolute adherence to the traditional methods of immobilization. 2. The application of operative measures to ordinary cases of simple fracture. The use of the x rays has also introduced new factors. These modifications are due to the teachings of Lucas-Championnière. The conception of prolonged immobilization as the dominant principle in the treatment of fractures was arrived at by a too exclusive attention to the injury to the bone, and a neglect of the associated injuries of the soft parts. Absolute immobility is not essential to bony repair. The extremities of a broken rib unite rapidly despite the incessant respiratory movements, this taking place even where a portion of the rib has been removed by resection. On the other hand, nonunion is frequently observed in fractures of the cranial vault, where the bones are immovable. Immobilization in some form is necessary to secure union in cases of marked displacement of the fragments where the displacement tends to be reproduced after reduction. It is the displacement, however, and not the mobility that interferes with union. The fear of displacement has been exaggerated; the fleshy bellies and the tendons of the muscles form a sleeve like splint which tends to keep the bone in position. The strong fascia and connective tissue of the limb, and the insertions of the muscles, fascia, and ligaments into the bones, all play a similar part. Immobilization entails certain hurtful consequences; wasting of the muscles, stiffness of the joints, weakness of the limb, and pain on attempting movement are usually to be observed when the splints are taken off. These disabilities are due to the treatment, not to the fracture. Associated with the atrophy of the muscles there is also a concurrent and consequent atrophy of the bones. Early massage and movement enable us to avoid many of the unfavorable results of immobilization, and constitute the best treatment for repair of the fracture and restoration of function. The massage to be applied differs entirely from that employed by professional masseurs. It consists in a smooth, soft, uniform, above all painless, mobile pressure in the direction of the venous current. At first just a touch, the degree of pressure is progressively increased so as to act gradually on the deeper structures. It should be practiced from the very beginning of treatment, and repeated daily for half an hour at a time. After massage, passive movements before impossible because so painful, become surprisingly easy. Active and passive movements may be usefully combined. The first and most striking result of massage is the relief of pain. This is prompt and decided to a degree that is almost incredible. Swelling is also removed, the volume of the limb diminished, the tension relieved, absorption hastened, and normal circulation restored. Adhesions are prevented and the flexibility of the joints maintained. The adhesions do not form because the so called plastic lymph which gives rise to them is removed by the massage. Voluntary movements are even more useful in preventing muscular atrophy than massage, as it excites the natural functional activity of the different associated parts of the motor apparatus; the muscle, the nerve, the nerve centre. Finally, massage shortens the duration of treatment very considerably.

8. **Over Nutrition.**—Chittenden has studied the question as to how much food is necessary to maintain the body in full health, his observations covering three groups of men: Five professional men, eleven soldiers, and eight university athletes. He is of the opinion that the physiological evidence so far accumulated by dietetic experiments on man, reinforced by the evidence of thousands of individuals living at a lower level of proteid metabolism, indicates that the normal requirements of the body for proteid food do not demand more than one half the amount called for by existing standards. And the daily consumption of proteid food far beyond the amount required to maintain health, strength, mental and physical vigor, body weight, and

nitrogen equilibrium, constitutes a form of over nutrition most serious in its menace to the welfare of the human race. He believes that there are more people suffering from over eating and over nutrition than from the effects of alcoholic drink. Further, since uric acid is traced to the purin derivatives of the food and to the decomposing nucleins of the tissue cells, at least possible gain to the body may be argued from the diminished amount of general nitrogenous waste products in blood, lymph, and tissue cells coincident with an intake of proteid commensurate with the body's needs. It is quite possible that the noticeable gain in muscular strength and the greater freedom from fatigue observed in the three classes of cases mentioned, when the proteid food was reduced to a level with true physiological requirements, was due to the smaller quantity of circulating katabolites.

LANCET.

October 27, 1906.

1. The Growth of Truth as Illustrated in the Discovery of the Circulation of the Blood (*The Harveian Oration*), By W. OSLER.
2. Wards and Things, By T. C. ALLBUTT.
3. On Some Aspects of Dilatation of the Heart, By A. M. GOSSAGE.
4. A Series of Cases Treated by the Injection of Bacterial Vaccines, By E. TURTON and A. PARKIN.
5. The Detection of Sugar in Urine and Its Significance in Connection with Life Assurance, By A. M. KELLAS and F. J. WETHERED.
6. Notes of an Unusual Case of Thrombosis of the Lower Part of the Lateral Sinus, of Aural Origin, By A. BRONNER.
7. Notes on a Case of Pericarditis Following Head Injury: Paracentesis. By J. GILLAN.
8. On the Disinfectant Properties of Hypochlorites of Sodium and Magnesium as Produced by Electrolysis, By D. SOMMERVILLE and J. T. A. WALKER.
9. A Case of Poisoning by "X L All Vaporizing Fumigator, By E. J. BLACKETT.

4. **Bacterial Vaccines.**—Turton and Parkin report a series of cases of tuberculous disease, bacillus coli infections, and staphylococcic affections, treated by the injection of bacterial vaccines, such treatment being controlled by estimation of the opsonic index. Previous to beginning treatment in each case they ascertained the exact causal germ of the disease by microscopical and cultural investigations, and estimated the opsonic index of the patient for that particular germ. The greatest success was attained by the cultural separation of the exact strain of organism peculiar to the patient, and by the preparation and use of a vaccine prepared from that organism. This plan is at present inapplicable to tuberculous affections, owing to the difficulties of obtaining a pure culture of the special strain of tubercle bacillus. Another difficulty is that there is often more than one causal germ present—*e. g.*, the tubercle bacillus is often associated with staphylococci, pneumococci, etc. It is hard to say how often the injection of the vaccines should be repeated, because acute affections differ so greatly from chronic ones. The only safe guide seems to be to inject as soon as the opsonic index, once raised, shows signs of falling. Each case is a law unto itself, and should be treated on its merits; beginning with a small dose of the vaccine, watching the opsonic index, and increasing or diminishing the dose as occasion demands. In the more acute cases the negative phase seems to be either entirely absent or of very short duration. No ill effects were noted from any injection, no abscesses, no rigors, and no rash. On the whole, the writers are pleased with their results. Acute cases are more difficult to cure, because there may not be time to raise the opsonic power to such a degree as to influence the course of the disease.

5. **Tests for Sugar in the Urine.**—Kellas and Wethered, after studying the various methods of detecting the presence of sugar in urine, reach the following conclusions: 1. Fehling's test is complicated by the retarding effects of creatinine, creatine, and mucin as regards the formation of a precipitate and by the auxiliary effect due to urates. Creatinine has a much greater retarding effect than the other two substances mentioned. 2. When testing for small quantities of sugar the inhibiting influence must be neutralized in one of the following ways: (a) By diluting the urine if necessary, so that its specific gravity is lowered to 1012 to 1015, when the presence of not more than 0.15 per cent. of sugar may be masked. (b) By increasing the volume of Fehling's solution used. (c) By precipitating the interfering substances, including urates, by either Allen's method, where copper sulphate and sodium acetate are employed, or Johnson's method, when mercuric chloride and sodium acetate are used. 3. Temperature has a very important influence both on the appearance and formation of a precipitate. Boiling for a few minutes aids in the formation of a precipitate, but may possibly bring down a green precipitate, due to excess of urates. 4. The alkaline safranin test for sugar deserves to come into more general use. It is a more scientific test for sugar in urine than that of Fehling or Pavy, or the picrate test, since the reagent is unaffected by creatinine, creatine, mucin, uric acid and urates, and only slowly by albumin. 5. The fact that safranin invariably gives a reaction with ordinary urine negatives the statement that with normal urine, three fourths of the reducing action is due to creatinine and one fourth to urates. 6. The reaction with safranin indicates a reducing substance which, if calculated as grape sugar, usually varies from 0.02 to 0.2 per cent. 7. The phenylhydrazine test must be used with caution where testing for small quantities of sugar. In doubtful cases the crystals should always at least be examined microscopically and the melting point should preferably be determined. 8. The fermentation test is untrustworthy for small quantities of sugar, and requires further investigation. 9. The balance of evidence strongly supports the view that small quantities of sugar are normally present in urine. The minimum value which could be assigned for the average amount present would probably be 0.01 per cent. approximately, and the maximum value assignable would probably be between from 0.05 to 0.09 per cent., and certainly not over 0.1 per cent. 10. Wender's methylene blue test, Nylander's bismuth test, Hoppe-Seyler's orthonitrophenyl propiolic acid test, Sachse's potassiomercuric iodide test, and Knapp's mercuric cyanide test are probably inferior in convenience, or accuracy, or both, to the safranin test. 11. Finally, in testing for life assurance, as many tests as possible should be applied in doubtful cases. The safranin test if used as an auxiliary to the Fehling test might alone be sufficient to settle troublesome cases where small quantities of sugar and large quantities of creatinine cause the latter test to be uncertain. Glycouronic acid can be distinguished from glucose by the fermentation and phenylhydrazine tests.

7. **Paracentesis in Pericarditis.**—Gillan reports the case of a boy, aged sixteen years, who received a severe lacerated wound of the head. Suppuration took place, and six weeks later pericarditis with effusion developed. Paracentesis with a small trocar and canular was performed through the left intercostal space one inch from the sternum one week later. Great and immediate relief was obtained by the withdrawal of a relatively small quantity of fluid. The actual quantity removed was six ounces and six drachms, and considering the extent of the dull area and the small impression made on it by the withdrawal of this quantity, it is obvious that the amount of fluid remaining must have been very large compared with what was withdrawn. The remaining fluid was, however, very rapidly absorbed. The fact that a pericarditis, presumably the result of a septic process, should pass off so quickly and completely with-

out the formation of pus within the pericardium, is worthy of note.

LA PRESSE MEDICALE.

October 20, 1906.

1. The Corpuscles of Negri and the Parasite of Hydrophobia, By V. Babes.
2. The Plague in Japan, By P. Desfosses.

1. The Corpuscles of Negri and the Parasite of Hydrophobia.—Babes says that the ascertained facts appear to him sufficient to render it extremely probable that certain very fine, round, black, or blue granulations found in hydrophobia exclusively in the protoplasm of the degenerated nerve cells of the most affected portions of the nervous system represent the agents of the disease in full activity, while the corpuscles of Negri, found in cells which are little or not at all changed, are not in intimate relation with the principal symptoms of hydrophobia, and are not the active parasites of this disease. They are probably encapsulated forms which enclose the parasite during its involution or transformation. The author is thus disposed to consider the corpuscles of Negri to be the result of a strong, local reaction of the cell, provoked by the invasion of the parasite followed by the encapsulation and sequestration of the parasite by the cell. This reaction is probably the expression of a very strenuous resistance on the part of the cells which enclose the corpuscles of Negri, cells which are more or less refractory toward the virus of rabies, and it is because of this refractory state that they are able to encapsulate and sequestrate the parasite.

2. The Plague in Japan.—Desfosses describes in detail the methods of study of the plague in rats adopted in Japan, together with the measures taken to prevent its extension among human beings. His material is all obtained from a paper read by Shibasaburo Kitasato before the Medical Association of the Philippine Islands, and given in full in the *New York Medical Journal* of July 7, 1906, pp. 1, *et seq.*

October 24, 1906.

1. Intermittent Lameness of Spinal Origin, By Paul Sollier.
2. The Signification of Urinary Sulphoether, By H. Labbe and G. Vitry.
3. The Apportionment of Meals Met With While Traveling, By A. Martinet.
4. The Lymphatic and Circulatory Way in Infection, By R. Romme.

1. Intermittent Lameness of Spinal Origin.—Sollier calls attention to a syndrome recently described by Dejerine which resembles the intermittent lameness of Charcot from peripheral arteritis of the lower limbs, and gives the history of one of Dejerine's cases.

2. The Signification of Urinary Sulphoether.—Labbe and Vitry say that there exists normally in the urine a certain quantity of a complex body which may be known as sulphoether or sulphophenol, formed by the combination of sulphuric acid with various aromatic substances. They are of the opinion that it does not serve as an index to the condition of intestinal putrefaction, as has been suggested, but they find that the daily quantity eliminated in the urine is proportionate to the quantity, and to a certain degree, to the quality of the albumin assimilated, and therefore believe that the sulphoether represents the elimination through the urine of the final aromatic and sulphatic débris left after dismemberment of the albumenoid molecule by assimilation.

3. Apportionment of Meals.—Martinet describes the customs in England, Holland, Germany, and France in regard to meals. After each description is a brief résumé in which he states that the custom in England and Holland is to have three meals, a moderately hearty breakfast before the beginning of the day's work, a light meal about midday and a hearty dinner at night after the day's work is over. In Germany the custom is to have three meals, a light breakfast, a hearty dinner about one o'clock, and a light or medium supper after the end of the day's work. The French custom is to have three meals, an insignificantly light breakfast, a hearty meal during the day and another equally hearty meal at night after the close of the day's work. The author considers that the custom followed in England and Holland is the most rational.

LA SEMAINE MEDICALE

October 24, 1906.

Surgeons and the Vermiform Appendix, By H. Vulliet.

Surgeons and the Vermiform Appendix.—Vulliet reviews a large amount of the literature on this subject and considers separately the early, the intermediate, the late, and the interval operations, the preventive removal of the normal appendix, and the attachment of the appendix to the skin to create an appendicular fistula, an operation which has been performed for the purpose of introducing medicaments into the intestine in ulcerative colitis, or as a substitute for cæcostomy in certain cases of occlusion of the large intestine by tumors.

BERLINER KLINISCHE WOCHENSCHRIFT.

October 15, 1906.

1. Bad Results in Tendon Grafting, By O. Vulpius.
2. The Use of Atropine Methylobromate in Diseases of the Nervous System, By C. Hudovernig.
3. The Early Diagnosis of Primary Syphilis, By F. Danziger.
4. A Contribution to the Serum Treatment of Syphilis, By C. S. Engel.
5. Remarks on the Paper Entitled The Silverspirochætæ, by W. Schulze, in a Former Number of the Wochenschrift, By C. Levaditi.
6. External or Internal Operation for Empyema of the Accessory Sinuses, By M. Halle.
7. The Form and Arrangement of Modern Operating Rooms, By M. Martens.

1. Bad Results in Tendon Grafting.—Vulpius says that dangers threaten from beginning to end which if unrecognized or neglected may render this operation a failure, but that these dangers can be overcome by foresight and extensive experience, so that the result of tendon grafting will be successful in the majority of cases.

2. The Use of Atropine Methylobromate in Diseases of the Nervous System.—Hudovernig has used this drug with satisfaction to relieve the lancinating pains of tabes dorsalis, the tearing pain of meningomyelitis, cephalgia luetica, anæmic headache, hemicrania, nervous headache, hysterical nausea, nervous hyperidrosis, rheumatic headache, trigeminal neuralgia, and sciatica. He obtained no benefit from its use in epilepsy, paralysis agitans, or convulsive tic. His conclusions are: 1. Atropine methylobromate is a valuable anodyne in the conditions mentioned. 2. It is of good service in nervous hypersecretions. 3. In neuralgiæ and neuralgic pains it is not only an anodyne, but curative means. 4. In epilepsy its effect is very slight, in conditions of motor irritation its effect is nil. 5. Habituation and unpleasant or toxic associated or after effects were not noticed. 6. From 1 to 4 milligrammes suffices for a single dose, and may be given in powder or in solution. 7. Its effect can be increased by combination with antineuralgic or antirheumatic remedies.

3. The Early Diagnosis of Primary Syphilis.—Danziger reports five cases in which the diagnosis of the primary lesion of syphilis was confirmed at a very early stage by the presence of spirochætæ.

6. Empyema of the Accessory Sinuses.—Halle discusses the advantages and disadvantages presented by the external and intranasal operations for empyema of each of the accessory sinuses taken individually.

MUENCHENER MEDIZINISCHE WOCHENSCHRIFT.

October 23, 1906.

1. Pubeotomy and Artificial Delivery, By FEHLING.
2. Acute Intestinal Tuberculosis Under the Aspect of a Severe General Infectious Disease, By PÄSSLER.
3. The Leucocyte Ferment in the Spleen, Lymphatic Glands, and Bone Medulla in Leucæmia and Pseudoleucæmia, By JOCHMANN and ZIEGLER.
4. Acute Poliomyelitis and Cerebrospinal Meninigitis, By TIEDEMANN.
5. Diarrhœa in Lunatics, By LIEFMANN and NIETER.
6. Relations of Erythema Exudativum Multiforme and Nodosum of the Mucous Membranes to Syphilis, By TRAUTMANN.
7. Healing of Pseudarthroses and the Artificial Production of Pseudarthroses, By FRÄNKEL.
8. The Light and Air Treatment of Chronic Heart Diseases, By HERZ.
9. Rupture of the Liver with Fatal Hæmorrhage in Consequence of the Bursting of a Superficial Aneurysm. By WÄTZOLD.
10. A Case of Chronic Lymphocyte Leucæmia in a Child Eleven Months Old, By MENNACHER.
11. Portable Apparatus for the Treatment of Stiff Finger and Wrist Joints, By BETTMANN.
12. Technics of X Ray Therapy, By WIESNER.
13. Practical Propositions in Regard to the Hygiene of the Clothing of Women, By GRISSON.

1. Pubeotomy and Artificial Delivery.—Fehling gives as indications for pubeotomy (1) all contractions of the pelvis in primiparæ, and (2) in multiparæ who refuse to have Cæsarean section performed, or where difficulties arise during labor from the size of the child, or the position of the skull, which demand an enlargement of the pelvis in the interest of the life of the child.

2. Acute Intestinal Tuberculosis.—Pässler reports two cases in which the differential diagnosis from typhoid, or other acute infectious fever was very difficult, and concludes that (1) the tuberculous infection of the intestinal canal in adults may develop, independently of serious tuberculosis of the lungs or other organs, a fever which will prove fatal in a few weeks; (2) perhaps a mixed infection with pus producers plays the important part in the severe course of tuberculous infection of the intestine, as in tuberculosis of the lungs; (3) in both the cases described staphylococci were found sparingly in the circulating blood. This is found occasionally in ulcerative phthisis of the lungs; (4) in order to exhaust the diagnostic possibilities in cases of serious fever, the diagnosis of which is not evident, it is recommended to examine the stools for tubercle bacilli.

4. Acute Poliomyelitis and Cerebrospinal Meningitis.—Tiedemann reports a case of acute poliomyelitis in which positive meningitic symptoms were simultaneously observed.

6. Erythema Exudativum Multiforme et Nodosum and Syphilis.—Trautmann reports seven cases of these forms of erythema in syphilitic patients which were cured by treatment with salicylic acid. He says that his experience teaches him that the antecedent syphilitic infection has only an indirect connection in the way of furnishing a predisposition and a general or local place of least resistance which may exist for a variable period.

9. Rupture of the Liver with Fatal Hæmorrhage.—Wätzold reports the case of a man, forty-four years old, syphilitic and a hard drinker, who had a general œdema and ascites, and complained of pains referred to the region of the liver. He suddenly collapsed and died in an hour and a half from hæmorrhage into the abdomen. On autopsy there was found a rupture in the lower surface of the right lob of the liver, which was cirrhotic. This rupture was induced by the rupture of a superficial aneurysm.

10. Chronic Lymphocyte Leucæmia in a Child Eleven Months Old.—Mennacher gives a very complete clinical history of this case, together with the findings at autopsy. The clinical diagnosis wavered between anæmia, pseudoleucæmia infantum, or splenic anæmia of Jaksch, and true leucæmia. Autopsy showed it to be lymphocyte or lymphatic leucæmia.

11. Portable Apparatus for the Treatment of Stiff Joints.—Bettmann describes with illustrations an apparatus he has devised for passive motion of the joints of the fingers and wrist. By its means dorsal, volar, ulnar, and radial flexion of the hand may be performed, as well as abduction of the thumb and spreading of the fingers.

LA RIFORMA MEDICA

October 27, 1906.

1. The Heart in Basedow's Disease, By GUIDO DERNINI.
2. Heredity in Tuberculosis, By G. ZAGARI.
3. Researches on the Coagulating Power of the Blood Serum in Epilepsy, By CARLO BESTA.

1. The Heart in Exophthalmic Goitre.—Dernini finds that "il cuore basedowico" is a heart which is especially sensitive to fatigue, quickly losing its reserve energy. The slightest muscular exertion causes an increase in its clinical diameters. The tranverse diameter is always affected, the increases being transient, at times slight. The right side of the heart, especially the auricle, is chiefly affected. An increased size of the auricles may also be present as the result of a valvular insufficiently, or independently of it. The degree of dilatation in the heart is directly in proportion to the degree of general asthenia of the patient. The presence of dilatation after exertion is especially valuable as a diagnostic sign of Basedow's disease. The dilatation is, however, always transient, save in advanced stages, when it may partly remain even at rest.

2. Tuberculosis and Heredity.—Zagari concludes a scholarly analysis of this question by stating that heredity in tuberculosis implies two factors: The proximity of tuberculous individuals in the family facilitates accidental infection, while the soil of the child of tuberculous parents is a soil which is predisposed to infection.

3. The Coagulating Power of the Blood Serum in Epilepsy.—Besta's researches on this theme show that the blood serum in epilepsy presents a marked lack of fibrin ferment. This ferment, as has been shown by Pekelharing and Carbone, is an organic compound of calcium. Its lack in the serum of epileptics shows that these patients lack calcium or its organic compounds. Sabbatani has shown, furthermore, that salts of calcium play a very important rôle in the nutrition of the cortical nerve cell. If the cortex be bathed in very dilute solutions of calcium salts, the excitability of the brain to electric stimuli is markedly diminished. On the other hand, if the calcium salts are neutralized by adding sodium citrate, etc., this excitability is greatly increased.

Letters to the Editors.

TABES DORSALIS IN THE NEGRO.

CHICAGO, *November* 1, 1906.

To the Editors: The report of A Typical Case of Tabes Dorsalis in a Negress, by Walker G. Bowers, of Philadelphia (*New York Medical Journal,* October 27, 1906), leads me to thus address you.

Though the occurrence of tabes dorsalis in the negro —even the female negro—is rare, it is no longer a curiosity. I have more than once shown in my clinic tabes dorsalis in the negro, and when the case was a typical one, presented in conjunction with other cases in white men and women, I have never thought it worth while to make any special comment other than that it was rare. I have, however, invariably called the at-

tention of the class to the fact that the patient was not a full blooded negro. In my experience the tabetic colored man has always had one or more white ancestors.

The real question of interest to-day anent tabes dorsalis in the negro is as to the occurrence of it in a full blooded member of that race. As an ætiological and ethnological question this is a most important one. I have never seen myself a case of tabes dorsalis in a full blooded negro, nor have I ever read a report of such a case that was not open to sharp criticism. Dr. Bowers's case, like many others so reported, is nothing but an ordinary case of tabes dorsalis in an individual of dark skin, with more or less negro blood in her. The value of the report is lost in the words, "born in slavery and knew nothing of her family." Though she may have "all physical and mental characteristics of a full blooded negress," it is extremely doubtful if such a rough observation is of sufficient scientific value to warrant even a suspicion that tabes dorsalis has been seen in the full blooded (?) negro.

The question of the racial incidence of tabes dorsalis is an important one, if it is of any consequence at all. From want of definiteness, much misinformation may be promulgated. For example, Ferrier, in his Lumleian Lecture on Tabes Dorsalis (*Lancet,* April 7, 1906), one of the most recent complete studies of the disease, says that "it certainly occurs among negroes (Collins, Hecht). It may not be so common among primitive races as among those more advanced in civilization and all that this connotes, but this is not the point." What does Ferrier mean by "primitive races," full blooded, hybrid, or both? If he means full blooded, his assertion is not true, for all observations up to the present time indicate that tabes dorsalis does not occur in the primitive, or full blooded, negro. Hecht himself, whom Ferrier quotes somewhat exhaustively, says: "I recall that all of the cases heretofore reported, including my own, in which I have been especially solicitous of detailing the ancestry, occurred in hybrids" (*American Journal of the Medical Sciences,* October, 1903). If, on the other hand, Ferrier means by "primitive races" hybrids, one can have no quarrel with him; for tabes dorsalis is not infrequently seen in mixed blooded negroes, and the statement of such a fact today is of the nature of a mere commonplace. Ferrier to the contrary notwithstanding, it is most decidedly "to the point" to determine whether tabes dorsalis does or does not occur in *the* negro, the full blooded negro. Up to the present, all evidence that can withstand the searchlight of criticism seems to point to the fact that it does not occur in the genuine negro.

Let us study this point closely when examining a case of tabes in the colored race, for it is the only point that makes the disease at all of special interest when observed in a colored person. Apart from the interest in the case as one of mere tabes dorsalis, the determination of the racial purity of the patient's ancestry is the real point that makes the report of such a case worth while. Tabes dorsalis in the negro is a racial and ethnological question, and all reports of cases that do not include this consideration of the question are of no more or less interest to-day than is the report of any case of the disease.

L. Harrison Mettler.

ANCIENT ANÆSTHESIA.

1408 South Sixth Street,
Philadelphia, *November* 1, 1906.

To the Editors: The paper on Anæsthesia, by Dr. W. Wayne Babcock, published in your esteemed journal of September 22nd, was of great historical value. I wish to mention a case of anæsthesia which I think will be of interest to some of your readers. In the second century Rabbi Elieser Ben Sinion (139-169), thus the Talmud relates, was to undergo an operation, so they took him to the house of *Shisha,* administered "*Sama Deshinta,*" sleeping potion, did an abdominal section, and removed a considerable quantity of fatty tissue. *Baba Meziah,* 83, b. This is, I think, a clear record of a major operation under an anæsthetic.

Aaron Bray.

THE INTERNAL SECRETIONS.

Los Angeles, *October* 9, 1906.

To the Editors: I regret that Dr. Sajous continues his endeavor to get into a discussion. I detest controversy. It is unprofitable. *He* is thoroughly convinced of the soundness of his views, and must admit "in all fairness" that this has tinctured his perception of facts and his statements. I am not convinced that his "views are sound," and regret his book is written in such a manner that I cannot "grasp even the elementary principle" of his doctrine. Laboratory experiments show *antagonism* between the thyreoid and the adrenals. Clinical evidence is abundant that *iodine lessens* vascular hypertension, and laboratory experiments confirm the same. It may have been *these facts* which led me to class iodine with the depressants of adrenal activity.

In my letter of September 1st I endeavored to be "generous" and leave the question to the readers of the *Journal* and of his book, and there I shall now leave it.

Theodore G. Davis.

New Inventions.

A NEW OXYGEN GENERATOR.

The remarkable property possessed by the preparation of fused sodium peroxide commercially known as oxone, of readily setting free its full content of oxygen on simple immersion in water, has been utilized for the

Fig. 1.

Fig. 2.

extemporaneous production of a pure oxygen, to be used at the bedside of the patient by means of a specially constructed generator of novel design, the parts of which are shown in the accompanying illustrations.

The apparatus has the marked advantages of being light and compact. It is nine inches high and weighs less than three pounds. Fig. 1 shows the generator entire, Fig. 2 the outer jacket which holds the water in which the inside cylinder is immersed, Fig. 3 represents the inside cylinder. This inside cylinder is left without a bottom, so that oxone cartridges may be

introduced into it. The neck (n) of the cylinder leads to an oxygen valve (v^1) in the centre of the cover, where a nipple is provided (i) for attachment to a rubber tube. An air valve (v^2) provides for the passage of air to allow the fluctuation of the water level, and at the same time serves as a safety valve. The container is filled two thirds full of water. The inside cylinder is charged with oxone cartridges and then immersed, after which the apparatus is tightly closed by means of the thumb screws. The air valve (v^2) is opened, and then the oxygen valve (v^1), upon which the generation begins at once. The speed of the generation, and consequently the pressure, are regulated by means of the valves. To stop the generation, the air valve is closed, and a few instants later the oxygen valve, when generation ceases at once. What is left of the oxone remains intact and ready for instant use at any subsequent time. One full oxone charge is sufficient to supply fourteen to fifteen gallons of 99.3 per cent. pure oxygen gas; after it has passed through the water bottle the slight vapors produced by the energy of generation are absorbed so that the final yield is an oxygen gas of one hundred per cent. purity. This

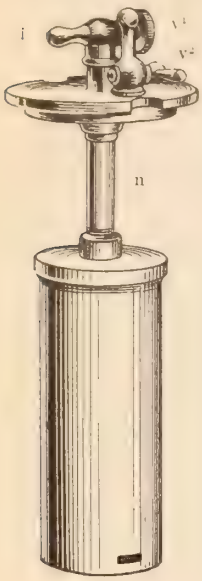

FIG. 3.

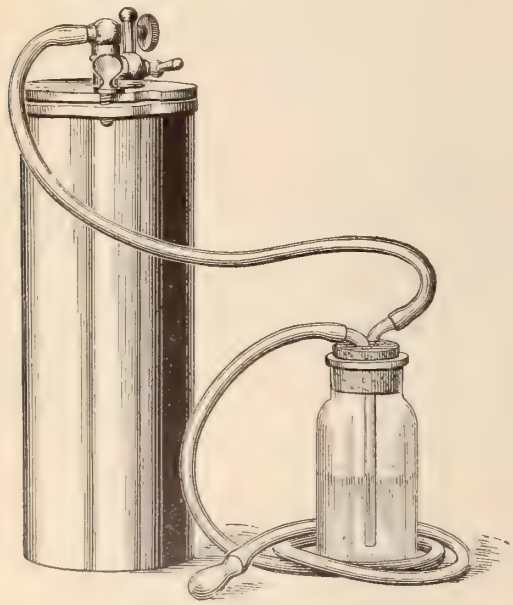
FIG. 4.

device will undoubtedly prove to be of value to the physician for bedside administration of oxygen, its smallness, lightness, economy, and prompt efficacy being important factors in its favor.

Proceedings of Societies.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting of September 26, 1906.

Dr. WILLIAM M. L. COPLIN in the Chair.

Leprosy.—Dr. JUDSON DALAND gave an illustration by lantern slides of leprosy as seen in different countries.

Dr. JAY F. SCHAMBERG gave an illustration by lantern slides of leprosy as seen in Philadelphia and of the cutaneous manifestations of leprosy and syphilis. Speaking of the nervous and tubercular types of leprosy, he noted that in the former type there was evidence of progressive neuritis, and in the latter infiltration of the skin with tubercles having a predilection for the face, but which might attack any portion of the cutaneous surface. In most cases the two types were found mixed. While the mode of the transmission of the infection was said to be not definitely settled, the most generally accepted view was that of the introduction of the *Bacillus lepræ* through the nasal and upper respiratory mucosa. The subject of leprosy and the sanitary precautions which should be taken were considered matters of special interest in view of the new possessions of the United States, in which many cases existed. In the incipient stage of the disease, many patients might be brought to this country. It therefore became the duty of physicians to acquaint themselves with the symptomatology of the disease. Equally was it their duty to allay the almost hysterical fear of the disease exhibited by the public, since it was not contagious in the sense in which scarlet fever or smallpox was.

Dr. M. B. HARTZELL referred to the wrong attitude of the public toward the subjects of leprosy as exhibited in the recent account of the treatment of a leper from Baltimore. He felt that the medical profession should make known the fact that, while leprosy was contagious, it was very feebly so.

Dr. H. M. CHRISTIAN had thought it possible to confound the tubercular syphilide with the nodular form of leprosy, but with the cases as represented by the slides showing the nodules much larger than those of syphilis, with the increased infiltration of the skin, and with the leonine countenance, a mistake in diagnosis seemed impossible. He emphasized the importance of enlightening the public regarding the feeble contagiousness of the disease, and thought the recent spectacle of sending a poor leper from one town to another was a disgrace to American civilization.

Dr. WILLIAM M. WELCH recalled some of the subjects of the pictures shown on the screen, several of whom had been in the Municipal Hospital for a number of years. In the case of the woman, a native of Philadelphia, who had leprosy, the source of the contagion could not be discovered.

Dr. THEODORE H. WEISENBURG spoke of leprosy in the Philippines as he had observed it in that country.

Dr. B. FRANKLIN ROYER's experience with leprosy had been limited to one case, that of a Sandwich Islander, admitted into the Municipal Hospital. He was given mercury and iodides in doses almost as large as a syphilitic patient could bear. The lesions cleared up in about nine months and the man was pronounced cured, the only case known to have been cured in Philadelphia.

Meeting of October 10, 1906.

The President, Dr. CHARLES K. MILLS, in the Chair.

The Treatment of Osteomyelitis by Iodoform Bone Plugging.—Dr. GEORGE M. DORRANCE pointed out the disadvantages in the usual methods of treating osteomyelitis, and described the method of plugging with iodoform, which method was first used by Moorhof. The advantages alleged were that the plugging did not act as a foreign body, possessed the medicinal properties of iodoform without causing toxic symptoms, and was gradually absorbed and replaced by granulation and in from three to four months by new bone. Cases were reported of chronic tuberculous osteomyelitis of the tibia, septic osteomyelitis of the ulna following compound fracture, typhoid osteomyelitis of the sixth rib, and typhoid osteomyelitis of the inferior maxilla in which this treatment had been employed by Dr. Dor-

rance with entire success. In some of the cases there had been a number of other surgical procedures which were unsuccessful. Dr. Dorrance believed that the treatment of osteomyelitis by the iodoform plugging was far in advance of any previously described method.

Results of the Examination of Students' Eyes in the Department of Physical Examination, University of Pennsylvania.—Dr. William Campbell Posey, ophthalmologist, and Dr. R. Tait McKenzie, director of the department, presented this paper, which was based upon the results of the examination of 883 students. The examination of the eye was supplementary to a thorough study of the general physical condition. There had been fewer absences from illness and less interruption of studies since the correction of refraction errors. It was shown that the increase of nearsightedness could be prevented by proper care of the eyes. Of the students examined, 30.34 per cent. had defective vision in one or both eyes. Of the 883 examined, 14.70 were myopic, while the remainder were either hypermetropic or emmetropic. In the comparison to ascertain the influence of age and study upon the refraction, it was found that among 633 students in the two lower classes 87.25 per cent. were hypermetropic and 12.75 per cent. myopic, while of 261 students in the upper classes, 80.25 per cent. were hypermetropic and 19.75 per cent. myopic. Five per cent. more of myopia was found in the professional department than in the college, presumably because students of the college department came from private schools where the eyes were properly protected, while the others came frequently from rural communities, where accurate refraction was impossible. Of the 883 students examined, 609 had full visual acuity in each eye, 94 had full visual acuity in but one eye, and 180 had subnormal vision in both. Of those complaining of headache, 7.59 per cent. had subnormal vision, while the remaining 92.41 per cent. had full visual acuity. Scoliosis was present in 6.68 per cent., and among them the vision of one eye was perceptibly lower than that of its fellow in 13.79 per cent.; supporting the inference of some of the possible responsibility of ocular errors for this abnormity. The figures were given to show the importance of including careful ocular tests as part of the physical examination of every student.

Dr. F. M. Perkins referred to the increase of myopia in consequence of close application of the eyes.

Dr. James Thorington referred to hereditary predisposition as a factor in the production of myopia, and further to German statistics which showed that glasses saved fifteen per cent. from becoming myopic.

Dr. Wendell Reber thought the German method of measuring the eyes did not tend to diminish myopia, as would be done did they pay sufficient attention to astigmatism, and were careful to use full correction in young children.

Dr. R. Tait McKenzie said that in routine examinations it was quite common to find the characteristic tilting of the head, defective posture, flat chest, and protruding abdomen in men having eye defects. In order to correct these faulty postures the correction of the eye defects was first necessary, particularly in astigmatism and myopia.

Organic Phosphorus in the Treatment of Various Nervous Diseases.—Dr. Alfred Gordon presented this paper, which was based upon the knowledge of the presence of phosphorus in various tissues and particularly in the nervous system. To keep up the average amount of phosphorus, the organism must depend upon the amount of food consumed. The discoveries of Gobley and Liebrich as to the existence in the brain or nervous tissue in general of organic combinations of phosphorus, and the elimination of phosphorus in the urine and fæces in inorganic combinations, were regarded as proofs that the decomposition of the organic compounds of phosphorus took place in the tissues. In this latter process the nervous tissue was said to play the most important part. A number of examples were brought forward. Reformation of organic phosphorus was said to be a necessity in exhausting disorders of the nervous system. As among all the preparations of phosphorus the organic compounds alone were utilized by the organism, Dr. Gordon had undertaken a series of clinical investigations in fifty-six cases of various nervous diseases in which he administered organic phosphorus. The results had been very satisfactory.

The Effect of Food Preservatives Upon Peptic Digestion.—Dr. Joseph Sailer and Dr. Clifford B. Farr had made a series of experiments with Metts's method in order to determine to what extent various food preservatives inhibited peptic digestion. Of the ordinary preservatives, it was found that boric acid and borax had no inhibitory effect. Formaldehyde inhibited only in solutions stronger than 1 to 100. Alcohol inhibited in solutions of twenty per cent. or more. In weaker solutions the inhibitory effect was not observed. Salicylic acid and sodium salicylate, except in very high dilutions, had a strong inhibitory effect, and the same was true of benzoic acid, sodium benzoate, and sodium sulphite. The latter caused total inhibition in dilutions of one per cent. Resorcin had very little inhibitory effect, and guaiacol carbonate had none at all. Creosote in very high dilutions had a strong inhibitory effect.

These results were true only for solutions of the substances under examination in artificial gastric juice. It was found that if the Metts tubes were exposed to the preservative solutions and subsequently immersed in the artificial gastric juice the results were not the same. Under these circumstances formalin had a powerful effect, but salicylic acid, sodium sulphite, and sodium benzoate had a very slightly inhibitory effect.

Meeting of October 24, 1906.

The President, Dr. Charles K. Mills, in the Chair.

The Clinical Significance of Small Hæmorrhages from the Gastrointestinal Tract.—Dr. J. Dutton Steele read this paper, and in summarizing said that gastric ulcers did not bleed so often as might be expected, and that in doubtful cases the stools must be examined for several weeks before chronic ulcer could be excluded. The test for blood was regarded as probably of most value in distinguishing between ulcer and hyperæsthenia of the stomach the result of a sensory neurosis. The detection of small hæmorrhages was considered of aid in prognosis and in the conduct of treatment, for example, in determining the advisability of passing the stomach tube in cases of suspected ulcer, in watching the effect of a change of diet during an ulcer cure, and in watching a case of convalescent ulcer in order to foretell and prevent relapse or recurrence of serious hæmorrhage. The persistence of bleeding after the patient was put at rest and on a milk diet might signify that the ulcer was chronic and would not yield to medical treatment, or possibly that a cancerous process was developing on the floor of the ulcer. Small hæmorrhages were said to be more frequent in ulcerated cancer than in peptic ulcer. In cancer as a rule the bleeding was almost constant and blood is found in the majority of the stools. Cases of cancer, it was said, did occur, however, in which bleeding might be infrequent or absent for some days, although there was every reason to suppose that ulceration had taken place. Its continued absence, on the other hand, was regarded as strongly against the existence of carcinoma.

Conditions that might give rise to small gastrointestinal hæmorrhage and simulate ulcer were given as high hæmorrhoids, tuberculous enterocolitis, purpura, and septic conditions, but especially cirrhosis of the liver with well established deep collateral circulation.

Dr. Joseph Sailer remarked that occult hæmorrhage

was comparable to many other physical signs in that it was not pathognomonic of any particular condition. Although occurring in a variety of conditions, it might in each, under certain circumstances, be absent. A point of great value in Dr. Steele's paper was the fact emphasized that under many circumstances when occult blood was expected to be present bleeding did not occur, and that at other times, when the examination was casual, a considerable amount of blood might be observed. He agreed with Dr. Steele that in all the cases in which occult blood was sought for, whether found or not, careful consideration must be given to all other symptoms and physical conditions presented by the patient.

Gunshot Wounds.—Dr. W. S. Wadsworth gave a résumé of so much of the technical, medicolegal, and military side of gunshot wounds as would be of use to the general practitioner. Using his experience for seven years as coroner's physician and his studies as a rifle expert in the militia, he pointed out the dfferent effects on the tissues caused by the gun powder and bullets under the different conditions of distance, sort of weapon, and quality and quantity of powder. He pointed out also the part that each tissue had in modifying the nature and severity of the wound, analyzing the causes which varied the smudge, powder marks, singeing, contusion, laceration, and penetration. He indicated the effect of weight, size, shape, and material of the projectile, also the influence of length of barrel, rifling, fouling, rust, and corrosion, and the influence of the tissues in turning a bullet or in retarding its progress. The interpretation of wounds as to whether they were made with high velocity or spent bullets and the resulting bruising in each case was considered. The nature of the impact in bullets of different velocity and mass and from different angles of incidence and the course taken by them in the tissues were dwelt upon. The nature and significance of various foreign substances carried into wounds, bleeding and its significance, the significance of wounds of different organs, and the time of probable life after serious wounds were spoken of. The duties of the physician, first to the patient and next to the State in observing, treating, taking notes, and notifying authorities were fully discussed.

Dr. H. Emerson Wetherill gave some interesting accounts of cases of gunshot wounds seen at Santiago and in the Philippine Islands, one of which was that of a man shot six times with the same bullet, the bullet having gone through the forearm, arm, and back.

Paralysis Agitans Without Tremor.—Dr. Augustus A. Eshner pointed out the inadequacy at times of names of diseases based on clinical manifestations, by reason of the occasional absence of one or another distinguishing characteristic. Thus, exophthalmic goître might be unattended with protrusion of the eyeballs or with enlargement of the thyreoid gland. Again, paralysis agitans was not a true palsy, and rarely even the tremor was absent. When present, however, the tremor was so distinctive as to be almost unmistakable. This tremor was minutely described and the case reported of a weaver, sixty-one years old, presenting a fixed countenance, stooped shoulders, and a tendency to propulsion. At this time no tremor was apparent, but at a subsequent observation slight tremor was appreciable in the thumb of one hand, suggestive of the pill rolling movement, and also tremor of the intrinsic muscles of the hand. In this case, as in two others previously reported by Dr. Eshner, the absence of tremor was not constant, and the opinion was expressed that the temporary omission was to be explained by restraint through muscular rigidity. The tremor might, hypothetically, be attributed to interruption of motor impulses responsible for muscular tone, in consequence of interference, by neurogliar hyperplasia, with the transmission of nerve force. The subsidence of the tremor on voluntary effort was, in turn, due to the amplification of the tonic motor impulses necessary for the execution of a given movement. Restraint of the tremor by passive movement might be considered as reflex. The cessation of the tremor under these conditions was at best only temporary and persisted for only a brief period of time.

Dr. D. J. McCarthy asked whether Dr. Eshner's cases had come to autopsy, because in a recent case in which all the symptoms of paralysis agitans had been present without tremor there was found at autopsy cerebral arteriosclerosis with areas in the cortex in the immediate neighborhood of the motor area. It was thought that this condition might cause the peculiar gait and other symptoms of paralysis agitans.

Dr. Eshner said that there had been no autopsy held in either of the three cases. Regarding the influence of physical and psychic shock in the ætiology of paralysis agitans, he thought such shock did not operate directly in the production of the morbid anatomy of the disease, but merely as a factor in evoking disease the foundation of which already existed. He thought it improbable that paralysis agitans should be confounded with senility, whether tremor was present or absent. When present, the tremor of senility behaved much as most other tremors did, being increased by intended movement and often absent during rest, while the reverse conditions were present in paralysis agitans.

Book Notices.

Rabóty Gospitálnoi Khirurgítcheskoí Klíniki. Reports of the Surgical Hospital Clinic of the Imperial University of Moscow, from September 1, 1905, to May 1, 1906. By Professor P. I. Diákonoff. Vol. IX. Illustrated. Moscow: "Khirurgia" Press, 1906. Pp. 467.

Those who have been following the political and social upheavals which have stirred public life in Russia during the period covered by this report will wonder at the calm, unruffled men who, pursuing their studies and practising their surgical art, are able to issue such a report as this at the present time.

The volume before us is the ninth of an annual series, which embraces each year the work of the preceding two academic semesters. It opens with a general part, which considers the organization, the personnel, the equipment, and the methods of the hospital division directed by Diákonoff. The remainder of the volume is devoted to classified case histories and tabulated statistics.

The Nervous System of Vertebrates. By J. B. Johnston, Ph. D., Professor of Zoology in West Virginia University. With One Hundred and Eighty Illustrations. Philadelphia: P. Blakiston's Son & Co., 1906. Pp. xx-370. (Price, $3.00.)

The student of comparative neurology has heretofore had to content himself with works in foreign tongues, save for the translation of Edinger, now some years old. It is, therefore, a matter of congratulation, particularly to students who do not read German, that a work of this character should appear in English. It is also fortunate that the volume has so much in it of value that it constitutes in reality an addition to our resources.

The author has kept before him constantly the view that comparative neurology should best be interpreted in terms of function, and hence has prepared a work which is much more interesting and valuable than one founded on purely anatomical considerations.

The order of subjects does not differ in any striking manner from that to which the student of physiology

is accustomed. Facts concerning general embryology and morphology, gross and microscopical, are first discussed. These are followed by chapters on the physiological divisions of the nervous system, the general and special cutaneous sensory systems leading. The motor divisions follow, and after a short chapter on the sympathetic nervous system the cerebellum and cerebrum are taken up in three or four chapters.

The work differs from many with which we are acquainted in its mode of presentation. It is philosophical and physiological, and thus gains the interest of the reader without repelling with a surfeit of anatomical detail. We conceive it to be an admirable textbook for the student of medicine and a valuable addition to one's neurological library.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending November 9,[1] 1906:

Places.	Date.	Cases.	Deaths.
Smallpox—United States.			
Dist. of Columbia—Washington	Nov. 3	1	
Louisiana—New Orleans	Oct. 27-Nov. 3	2 (1 case imported.	
Wisconsin—Milwaukee	Oct. 20-27	14	
Smallpox—Foreign.			
Africa—Cape Town	Sept. 15-22	2	
Brazil—Bahia	Sept. 22-29	9	
Canada—Moncton, N. B.	Vicinity of Nov. 1	100	
Chile—Antofagasta	Sept. 12-26	30	10
Chile—Coquimbo	Sept. 8-22	30	1
Ecuador—Guayaquil	Oct. 7-14		6
India—Bombay	Sept. 25-Oct. 2		1
India—Madras	Sept. 29-Oct. 5		3
Italy—General	Oct. 11-18	2	
Mexico—Vera Cruz	Oct. 6-13	1	1
		Imported from Mexico.	
Persia—Ispahan	Aug. 31	Present.	
Russia—Moscow	Sept. 30-Oct. 6	5	
Russia—Odessa	Sept. 30-Oct. 6	2	
Yellow Fever—Foreign.			
Cuba—Habana	Oct. 31-Nov. 6	9	1
Cuba—Nueva Paz	Nov. 2	1	
Cuba—Rodas	Nov. 6	1	
Cuba—Santa Clara	Nov. 1	1	
Mexico—Merida	Oct. 14-20	1	
Ecuador—Guayaquil	Oct. 7-14		3
Cholera—Foreign.			
India—Bombay	Sept. 25-Oct. 2		12
India—Calcutta	Sept. 15-29		44
India—Madras	Sept. 29-Oct. 5		65
Plague—Foreign.			
India—General	Sept. 15-29	11,381	12,702
India—Bombay	Sept. 25-Oct. 2		40
India—Calcutta	Sept. 15-29		11
Persia—Seistan	Aug. 1-17	2	2
Peru—Lima	Sept. 14	1	

[1] Previous report incorrectly given same date.

Public Health and Marine Hospital Service:

List of Changes of Station and Duties of Commissioned and Noncommissioned Officers of the Public Health and Marine Hospital Service, for the seven days ending November 7, 1906:

AMESSE, J. W., Passed Assistant Surgeon. Granted leave of absence for ten days.

AMESSE, J. W., Passed Assistant Surgeon. Relieved from duty at Gulfport, Miss., and directed to proceed to Washington, D. C., for temporary duty in the Hygienic Laboratory.

ASHFORD, F. A., Assistant Surgeon. Granted leave of absence for one month and fifteen days, from November 15, 1906.

BOGGESS, J. S., Assistant Surgeon. Directed to proceed to Buffalo, N. Y., for special temporary duty, upon completion of which to rejoin his station at Stapleton, N. Y.

COLLINS, GEORGE L., Assistant Surgeon. Granted leave of absence for one day, November 3, 1906, under Paragraph 189 of the Regulations.

FRANCIS, EDWARD, Passed Assistant Surgeon. Granted leave of absence for ten days, from November 20, 1906.

GOLDBERGER, JOSEPH, Passed Assistant Surgeon. Detailed to represent the Service at the meeting of the American Public Health Association, to be held in the City of Mexico, December 3, 1906.

GRUBBS, S. B., Passed Assistant Surgeon. Leave of absence granted Passed Assistant Surgeon Grubbs for one day, October 30, revoked.

HOLSENDORF, B. E., Pharmacist. Granted leave of absence for twenty-eight days, from Dacember 4, 1906.

KEPLER, G. K., Pharmacist. Directed to proceed to Chicago, Ill., and report to the Medical Officer in Command for duty and assignment to quarters.

LIGHT, S. D. W., Acting Assistant Surgeon. Granted leave of absence for thirty days, from November 3, 1906.

LYALL, R., Acting Assistant Surgeon. Granted leave of absence for one day, under Paragraph 210 of the Regulations.

PARKER, H. B., Passed Assistant Surgeon. Granted leave of absence for two months and fifteen days, from November 29, 1906.

SINKS, E. D., Acting Assistant Surgeon. Granted leave of absence for five days, from November 7, 1906.

STEGER, E. M., Assistant Surgeon. Relieved from duty on the Revenue Cutter *Algonquin* and directed to proceed to New York, N. Y., reporting his arrival by wire.

WERTENBAKER, C. P., Surgeon. Relieved from Quebec, and directed to proceed to St. John, N. B., for duty.

WETMORE, W. O., Acting Assistant Surgeon. Relieved from duty at Buffalo, N. Y., and assigned to duty at Ellis, Island, N. Y.

WETMORE, W. O., Acting Assistant Surgeon. Granted leave of absence for two days, from November 1, 1906.

Boards Convened.

A board was convened to meet at Ellis Island, N. Y., upon the call of the chairman, for the purpose of examining Pharmacist George Neves, to determine his fitness for promotion to pharmacist of the second class. Detail for the board: Surgeon G. W. Stoner, Chairman; Passed Assistant Surgeon John McMullen, Recorder.

A board was convened to meet at the bureau on November 7, 1906, for the physical examination of officers of the Revenue Cutter Service. Detail for the board: Assistant Surgeon General W. J. Pettus, Chairman; Assistant Surgeon General J. W. Kerr, Recorder.

A board was convened to meet at San Francisco, Cal., on November 1, 1906, for the purpose of examining applicants for cadetships in the Revenue Cutter Service. Detail for the board: Surgeon H. W. Austin, Chairman; Assistant Surgeon F. H. McKeon, Recorder.

A board was convened to meet at Seattle, Wash., on November 1, 1906, for the purpose of examining applicants for cadetships in the Revenue Cutter Service. Detail for the board: Assistant Surgeon H. G. Ebert, Chairman; Acting Assistant Surgeon F. R. Underwood, Recorder.

A board was convened to meet at San Francisco, Cal., on November 12, 1906, for the purpose of making physical examination of officers of the Revenue Cutter Service. Detail for the board: Surgeon H. W. Austin, Chairman; Passed Assistant Surgeon C. H. Gardner, Recorder.

A board was convened to meet at Port Townsend, Wash., on November 12, 1906, for the purpose of making a physical examination of an officer of the Revenue Cutter Service. Detail for the board: Surgeon W. G. Stimpson, Chairman; Passed Assistant Surgeon J. H. Oakley, Recorder.

A board was convened to meet at Stapleton, N. Y., on November 12, 1906, for the purpose of making physical examinations of certain officers of the Revenue Cutter Service. Detail for the board: Passed Assistant Surgeon J. A. Nydegger, Chairman; Passed Assistant Surgeon H. W. Wickes, Recorder.

A board was convened to meet at Boston, Mass., on November 12, 1906, for the purpose of making a physical examination of certain officers of the Revenue Cutter Service. Detail for the board: Surgeon R. M. Woodward, Chairman; Passed Assistant Surgeon B. S. Warren Recorder.

A board was convened to meet at Wilmington, N. C., on November 12, 1906, for the purpose of making a physical examination of certain officers of the Revenue Cutter Service. Detail for the board: Passed Assistant Surgeon C. H. Lavinder, Chairman; Temporary Acting Assistant Surgeon ——————, Recorder.

A board was convened to meet at San Juan, P. R., as

soon as practicable, for the purpose of making a physical examination of certain officers of the Revenue Cutter Service. Detail for the board: Passed Assistant Surgeon M. H. Foster, Chairman; Acting Assistant Surgeon P. del Valle Atilles, Recorder.

A board was convened to meet at Juneau, Alaska, as soon as practicable, for the purpose of making a physical examination of an officer of the Revenue Cutter Service. Detail for the board: Passed Assistant Surgeon M. W. Glover, Chairman; Temporary Acting Assistant Surgeon ————, Recorder.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, for the week ending November 10, 1906:

BOYER, PERRY L., First Lieutenant and Assistant Surgeon. Relieved from duty at Fort Sam Houston, Texas, and ordered to the Army and Navy General Hospital, Hot Springs, Ark., for duty.

HALL, JAMES F., First Lieutenant and Assistant Surgeon. Reported for duty at Fort Flagler, Wash.

HEYSINGER, JAMES D., First Lieutenant and Assistant Surgeon. Ordered to Key West Barracks, Fla., for duty.

RAGAN, CHARLES A., First Lieutenant and Assistant Surgeon. Relieved from duty at the Army and Navy General Hospital, Hot Springs, Ark., and ordered to Fort Monroe, Va., for duty.

STEDMAN, CHESTER J., First Lieutenant and Assistant Surgeon. Leave of absence extended one month.

WHALEY, A. M., First Lieutenant and Assistant Surgeon. Ordered to Fort Sam Houston, Texas, for duty.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending November 10, 1906:

BACKUS, J. W., Passed Assistant Surgeon. Detached from the *Texas*, when that vessel is placed in reserve; ordered to duty at the Naval Station, Guantanamo, Cuba, and to additional duty on the *Amphitrite*.

BERRYHILL, T. A., Surgeon. Detached from duty at the U. S. Naval Medical School Hospital, Washington, D. C., and ordered to duty in command of the Naval Hospital, New Fort Lyon, Bent County, Colorado.

CHAPMAN, R. B., Assistant Surgeon. Detached from the *Supply*, and ordered to the Naval Station, Cavite, P. I.

DICKINSON, D., Medical Director. Detached from duty in command of the Naval Hospital, Washington, D. C., and ordered to continue other duties.

FIELD, J. G., Surgeon. Detached from duty in the Bureau of Medicine and Surgery, and ordered to duty at the U. S. Naval Hospital, Bent County, Colorado.

GARRISON, P. E., Assistant Surgeon. Detached from the U. S Naval Medical School, Washington, D. C., and ordered to duty as medical zoologist for the Bureau of Science, Manila, sailing from Seattle, November 28, 1906.

HART, G. G., Acting Assistant Surgeon. Ordered to duty with the marine recruiting party, Atlanta, Ga.

KENNEDY, J. T., Passed Assistant Surgeon. Detached from duty at the Naval Station, Guantanamo, and ordered home to wait orders.

LANGHORNE, C. D., Surgeon. Detached from the *Brooklyn*, when that vessel is placed in reserve, and ordered home to wait orders.

MORSE, E. T., Pharmacist. Ordered to duty at the U. S. Naval Medical School Hospital, Washington, D. C.

PAYNE, J. H., JR., Passed Assistant Surgeon. Ordered to duty at the Naval Recruiting Station, Providence, R. I.

PHILLIPS, T. N., Pharmacist. Detached from the Naval Medical School Hospital, Washington, D. C., and ordered to the U. S. Naval Hospital, New Fort Lyon, Bent County, Colorado.

RIXEY, P. M., Surgeon General. Ordered to special temporary duty in connection with the President's trip to Panama and Porto Rico.

STREETS, T. H., Medical Director. Ordered to duty in command of the Naval Hospital, Washington, D. C.

WEBB, U. R., Passed Assistant Surgeon. Detached from duty on the *Brooklyn*, when that vessel is placed in reserve, and ordered to the Naval Torpedo Station, Newport, R. I.

Births, Marriages, and Deaths.

Born.

DENT.—In Monterey, California, on Saturday, October 27th, to Dr. J. A. McAlister Dent, United States Army, and Mrs. Dent, a daughter.

Married.

DYER—JULIHN.—In Washington, D. C., on Tuesday, October 30th, Mr. Robert Walter Dyer and Miss Bertha Agatha Julihn, daughter of Dr. and Mrs. Magnus L. Julihn.

GRAY—CHEETHAM.—In Reading, Pennsylvania, on Thursday, November 8th, Dr. Robert L. Gray and Miss Ellen Moore Cheetham.

HARRIS—GILSON.—In Syracuse, N. Y., on Wednesday, October 31st, Dr. Herbert Harris, of Fredericksburg, Virginia, and Mrs. Emma Gilson.

MCMURRAY—EMMERT.—In Hagerstown, Maryland, on Thursday, November 8th, Dr. T. E. McMurray and Miss Mary E. Emmert.

WIXSON—MAHARG.—In Buffalo, N. Y., on Thursday, November 1st, Dr. Roy Henry Wixson and Miss Georgia Maharg.

Died.

ABBITT.—In West Appomattox, Virginia, on Thursday, November 1st, Dr. Julian H. Abbitt, aged thirty-four years.

BEMIS.—In Medford, Massachusetts, on Tuesday, November 6th, Dr. Charles Vose Bemis, aged ninety years.

BIRNEY.—In Philadelphia, on Friday, November 2nd, Dr. David B. Birney, aged forty-six years.

BLACKWOOD.—In Bellefontaine, Ohio, on Sunday, November 4th, Dr. J. C. Blackwood, aged seventy years.

CROWLY.—In Philadelphia, on Wednesday, November 7th, Dr. T. Stanton Crowly, aged eighty-three years.

DAVIS.—In Elmira, N. Y., on Saturday, November 3rd, Dr. E. Howe Davis, aged eighty-eight years.

FINN.—In Hempstead, Long Island, N. Y., on Saturday, November 3rd, Dr. Charles Jenkins Finn.

HANCE.—In New Philadelphia, Ohio, on Saturday, November 3rd, Dr. Joseph C. Hance, aged twenty-five years.

HAZEN.—In Washington, D. C., on Tuesday, November 6th, Dr. David Henry Hazen, aged sixty years.

KENYON.—In Taberg, N. Y., on Friday, October 26th, Dr. Orsman S. Kenyon, aged seventy years.

LANE.—In Silver Springs, New Mexico, on Monday, November 5th, Dr. Samuel M. Lane, formerly of Royersford, Montgomery Co., Pa.

MACFARLANE.—In Philadelphia, on Wednesday, November 7th, Dr. Andrew McFarlane, aged sixty years.

NAREL.—In Morgantown, West Virginia, on Thursday, November 1st, Dr. Edward L. Narel, aged thirty years.

NICHOLS.—In Savannah, Georgia, on Monday, November 5th, Dr. Edgar H. Nichols, aged fifty-nine years.

NIDELET.—In St. Louis, Missouri, on Tuesday, October 30th, Dr. Sylvester L. Nidelet, aged seventy-seven years.

SHAFER.—In Camden, N. J., on Thursday, November 8th, Dr. William Shafer, aged fifty years.

SHRADER.—In Iowa City, Iowa, on Tuesday, October 30th, Dr. John C. Shrader, aged seventy-six years.

THOMPSON.—In Opelousas, Louisiana, on Sunday, October 28th, Dr. W. M. Marshall Thompson, aged seventy seven years.

TINLOCK.—In New York, on Friday, November 2nd, Dr. Samuel Tinlock, aged seventy-two years.

URCELAY.—On board *La Lorraine*, at sea, on Friday, November 2nd, Dr. Luis F. Urcelay, of Merida, Yucatan, aged forty-two years.

WARD.—In Proffitt, Virginia, on Saturday, October 27th, Dr. W. B. Ward, aged seventy-nine years.

WEAVER.—In Philadelphia, on Friday, November 2nd, Dr. Chandler Weaver, aged forty-eight years.

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Original Communications.

THE PREVENTION OF EPIDIDYMITIS.*

BY WILLIAM T. BELFIELD, M. D.,
Chicago,
Associate Professor of Surgery (Genitourinary), Rush Medical College.

The successful treatment of gonorrhœal and other infections of the seminal duct and vesicle by injections through the vas deferens,[1] led me to attempt the prevention of the spread of such infections downwards to the epididymis.

Four such attempts have been made; in two by simply opening the canal of the vas and injecting the proximal duct and vesicle with a solution of a silver compound; in two others by complete section of the vas and similar injections. In all of these—cases of acute gonorrhœa—the symptoms usually preceding descent of the infection to the epididymis, including pain and tenderness in the inguinal canal, were present. No epididymitis occurred in any of them. In two other cases of acute gonorrhœa, the infection had already reached the epididymis some twenty-four or thirty-six hours earlier; in each the vas was divided and the vesicle injected, and in each the epididymitis was unusually mild, the pain and swelling remaining so slight that the patients were not confined to bed.

Gonorrhœal epididymitis has commonly two serious features: The loss from business of four to ten days' time, and the probability of permanent occlusion of the duct and consequent sterility of the affected side. The exact proportion of this probability cannot, for lack of sufficient data, be confidently stated; estimates vary from fifty to ninety per cent., the latter based upon the observation of Liégeois, who found spermatozoa in the semen of only eight out of eighty-three patients who had had bilateral gonorrhœal epididymitis.

Therefore even if occlusion of the vas were a probable result of this interference, the prevention would be preferable to the epididymitis for two reasons: 1, It prevents loss of time; 2, the occlusion would be in the vas, where subsequent end to end anastomosis is easy and successful, instead of in the epididymis, where anastomosis is impracticable without the technical skill of the originator of that operation, E. Martin.

But the operation that I perform does not occlude the vas, a statement based upon experimental observations upon dogs, and clinical observation upon a patient (one of the four mentioned) who possessed only one testicle, the other having been removed some years earlier. This man's semen, examined at intervals for six months after the operation, always contained abundant spermatozoa.

The operation is thus performed: The vas is held by the fingers against the skin of the scrotum near the median line, while a half curved needle is passed through the skin under the vas. A half inch incison exposes the vas; a transverse or longitudinal incision into the vas opens its canal. The blunted needle (curved) of a hypodermic syringe can be passed into this minute canal, and a watery solution of any chosen agent injected; this liquid traverses the vas and ampulla, and enters the seminal vesicle. A fine silkworm gut suture is passed into the lumen of the canal at each extremity of the incision and out through the wall of the vas a quarter inch or more distant; one suture end is then passed through the skin and the two ends tied loosely outside. This suture, entering the lumen of the proximal end, serves to guide the needle when daily injections are to be made. When complete transverse section of the vas is made, the suture arrangement is identical with that described for the fistula formation. When the incision into the vas is longitudinal, an additional suture (catgut) is passed through the edges and tied loosely above the skin. This operation is done under local anæsthesia in the office, the patient walking away at its conclusion and losing no time from his vocation.

When restoration of the canal is desired, the silkworm suture is tightened so as to appose the cut ends; when the wound is healed the suture is removed. Restoration of the lumen of an occluded vas is accomplished by excising the occluded portion and suturing the divided ends in the same way; the lumen of the vas is maintained during healing by the thread within it.

The only attempt to prevent epididymitis that I have found recorded is that of Chetwood.[2] His work differs from mine in two essentials: It was performed to prevent recurrent epididymitis only, and—a vital difference—it destroyed the continuity of the vas by resecting a quarter inch of this tube and ligating each cut end, thus "per-

* Read before the Chicago Urological Society, October 25, 1906.

[1] *Journal of the American Medical Association*, April 22, 1905; *Surgery, Gynæcology, and Obstetrics*, November, 1906.

[2] *Journal of Cutaneous and Genitourinary Diseases*, 1900, p. 445.

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manently obstructing the way of the vital seminal element on that side." The natural reluctance of both patient and physician to this mutilation is almost universal, unless the subject be elderly. The procedure I have practiced not only avoids such mutilation, but also, by injections of the vas and vesicle, treats the proximal infection from which, both in acute and in recurrent epididymitis, the extension toward the epididymis proceeds.

While success in six cases is insufficient for proof, it warrants an extensive trial of this simple measure for averting both the immediate and remote evils of epididymitis, whether gonococcic or pyogenic.

100 State Street.

ON THE PRESENT STATUS OF OUR KNOWLEDGE OF SEROTHERAPY IN SURGICAL AFFECTIONS.*

By Charles A. Powers, M. D.,
Denver, Col.

This communication represents an unsatisfactory attempt to fill the indication which the title expresses, unsatisfactory because the subject is a difficult one to consider in a conclusive way. Much has been written on it; but the greater part of that which has been written is hardly to be classed as authoritative. It consists in large part of scattered cases incompletely analyzed, cases which are worthless from the standpoint of scientific demonstration.

In considering the subject broadly a distinction should first be made between the toxæmiæ and the bacteriæmiæ. The former embrace tetanus, diphtheria, pyocyaneus disease and botulismus (meat poisoning). The bacteriæmiæ, such as streptococcus, staphylococcus, pneumococcus, and gonococcus represent more than a toxæmia in that the pathogenic bacteria gain access to the blood, and the resulting pathological condition is a bacteriotoxæmia. Therefore the serum which is indicated in these conditions should be more than a mere soluble chemical antidote; it should possess bactericidal properties.

It is not necessary in this place to carry research to the original inception of the subject, for that has been done in numerous recent articles. One of the latest and most authentic of these is by Professor Vaughn (in *Physician and Surgeon,* May, 1904), who is particularly well qualified to deal with the subject, and who appears to have covered most of the general and special reports on antistreptococcus serotherapy. We may accept his conclusions as warranted by an analysis of the data, and by the consensus of expert opinion. He decides that we do not as yet know enough about the streptococcus toxine, and that until we can produce a soluble antitoxine we can expect nothing of practical value. The various sera on the market are prepared with the best intentions, but possess no therapeutic efficacy. Vaughn's paper further makes it apparent that the literature of the serotherapy of purely surgical affections is meagre in comparison with the medical, pædiatrical, and obstetrical contributions. He makes but little allusion to sera other than the streptococcic varieties, with the exception of tetanus antitoxine. He cites Doyen's experience with antistaphylococcic serum, published in 1903, but the favorable results alleged to have occurred from its therapeutical use appear to have received no corroboration at the time. Further, the conditions said to have been cured were in the main such minor ailments as boils, abscesses, carbuncles, and the like. Vaughn's valuable paper deals extensively with the principles which underlie the preparation of the various antistreptococcic sera and the technique of their manufacture. As it can readily be consulted in the original it is not necessary to quote from it at length.

In briefly noting some of the literature of surgical sera for the period which has elapsed since Vaughn's report the writer will endeavor to be guided by the following principles:

1. Isolated reports of one or a few cases will be omitted. Most reports of this character emanate from physicians who, being perhaps unfamiliar with surgical diagnosis and operative management, choose to make use of a serum when medical measures fail, and do not give their patients the benefit of ordinary surgical procedures.

2. As far as possible dependence will be made on the testimony of surgeons, embodied in systematic writings on septic affections, where, under the head of treatment, serotherapy is compared with other measures and a reasonable verdict thereby rendered.

3. Scientific requirements should be fulfilled as far as possible. It should be shown in individual cases that a correct diagnosis has been made, and that the infection is a pure one. Further, the mere fact that a patient recovers is not sufficient for a demonstration. Further, given the special symptoms produced by a certain germ, it should be shown that the serum shortly after its administration favorably modified these symptoms so far as the latter could have been due to the specific toxæmia or bacteriotoxæmia of the disease.

These conditions are rigorous, but only upon such can the validity of surgical serotherapy be established. If its validity could be established the practitioner would be justified in using it as an adjunct procedure in surgical affections, but until the principle can be shown to be sound, recoveries apparently due to the use of sera should not be reported, for such data are misleading. They establish false hopes and in a measure prevent practitioners from resorting to ordinary surgical measures.

Under the conditions thus imposed the reports on the serotherapy of septicæmia worthy of credence which have appeared since Vaughn's paper are very few in number, and even where negative reports might be expected modern authors are generally silent. Fowler in his recent work on surgery, ignores the subject. The same may be said of Gould's *Yearbook of Surgery* for 1905. Murphy of Chicago in his volume of *Clinical Surgery* in the *Yearbook Series* for 1905 contents himself with quoting Vaughn's conclusions. During the past two years the *Zentralblatt für Chirurgie* cites next to nothing on the serotherapy of septic conditions. An elaborate paper on the treatment of diffuse suppurative peritonitis, rich in cases from von Eiselberg's clinic in Vienna, makes no mention of serotherapy (Clair-

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* Read before the meeting of the American Surgical Association, Cleveland, May 30 and 31, June 1, 1906. The writer acknowledges valuable aid from Dr. Edward Preble.

mont and Ranzi, *Archiv. für klinische Chirurgie*, LXXVI, p. 68, 1905). Tavel in his excellent monograph *Chirurgische Infektionen und deren Prophylaxe* (Berlin, 1905) makes hardly any allusion to serotherapy or seroprophylaxis, and expresses no definite opinion. He cites with apparent approval Metchnikoff's belief that sera can do no more than stimulate a bactericidal phagocytosis, but gives other and simpler measures for carrying out this indication. Otogenic septicæmia would seem a fruitful field for the testing of sera, yet Randall (*Journal of the American Medical Association*, XLIII, 1906) in an exhaustive paper on the treatment of this affection does not allude to it. In the latest edition of Finger's work on gonorrhœa there is no allusion to serotherapy or seroprophylaxis. On the other hand, Rose and Carless in the latest edition of their *Manual of Surgery* (1905) make frequent allusion to the use of antistreptococcic serum in purulent cellulitis, septicæmia, pyæmia, and erysipelas, referring as well to its use for prophylactic purposes in those operations which are prone to be followed by sepsis. The arguments given may be condensed to the single statement, that certain cases appear to show benefit after the use of sera—a contention without sustaining force. They urge correct diagnosis and early employment of a polyvalent serum. Their teachings are far from convincing to one who has studied the subject. No personal experience is given, no definite reasoning from statistical material. Their statements appear based on a natural desire to give any new measure which has a reasonably scientific foundation a fair chance, and a further desire to enumerate under therapeutic resources any measure which has partisans.

Rose and Carless appear to show more enthusiasm for the alleged curative properties of antistreptococcus serum in erysipelas than in other application of serotherapy, yet this idea seems to have been thoroughly exploded by others. Thus, Lauber, in his monograph on the treatment of erysipelas in 1898, shows that the chief argument for the serotherapy of this disease rests upon the results of Chantemesse with Marmorek's serum in a series of several hundred cases controlled by a correspondingly large number treated without serum. But the margin in favor of serum treatment is exceedingly small and even this seems negatived by the work of Koch and Petruschky (1897) with experimental erysipelas. These authors showed that antistreptococcic serum could neither prevent the appearance of the disease nor modify its course when developed. Quite recently Rona, (*Ungarische medizinische Presse X*, 335, 1905) a credible authority, announced that he had treated five thousand cases of erysipelas since 1899 and that no form of serum treatment had the slightest influence on the disease. Lenhartz in his monograph on Erysipelas (*Nothnagel's Handbuch für specielle Pathologie und Therapie*, 1903) arrives at similar conclusions. Italian authors have during the past few years reported successes in the treatment of malignant pustule with antianthrax sera, but these reports seem to the writer to carry no more weight than any isolated instances of alleged recovery from the use of a new remedy. They may be placed in the same class with a great number of alleged positive results in the serotherapy of puerperal fever, scarlatina, erysipelas, and the like, all of which fail to answer the demands of a rigorous scientific investigation. It is far from enough to say that a given patient recovers after the use of serum.

When we seek authors competent to speak and who have insisted upon adherence to strict methods of analysis we find few who reach the standard. It is much easier to ignore or condemn or speak equivocally and temporizingly, than to meet the subject fairly from all points of view. Most of the general papers in which the pros and contras are weighed come from the laboratory. One of the few surgeons competent to discuss the subject in all its phases and who has definitely taken a position on it is Lenhartz, who, in view of his great monograph *Die septischen Erkrankungen* (1903) may be regarded as an eminent authority on the therapeutics of surgical sepsis. His labors are based on the clinic at the Hamburg-Eppendorf Hospital, and he plainly states that there is not the slightest doubt as to the inefficacy of Marmorek's and the other antistreptococcic sera. This statement is sustained by the crucial experiments of Petruschky on erysipelas. The serum exerted no influence whatever on the course of this disease and was unable to prevent it. Lenhartz studied a great number of cases of sepsis in which an absolute diagnosis of pure streptococcus infection was made. He cites several examples in which streptococci were found in the blood to the exclusion of other germs. These cases with positive blood findings are peculiarly adapted for serum treatment. Neither in the fatal nor other cases was there the slightest modification of the typical streptococcus temperature curve. The disease pursued its regular course. Lenhartz says that in some septic cases the serum treatment causes untoward collateral phenomena.

From a study of the very careful work of Lenhartz one can but gather the thought that while he believes that the principle of serotherapy may be sound in theory it is at present impracticable of execution. Vaughn cites several authors who believe that when serotherapy is apparently effective it does not represent a chemical antidote to toxine or even a bactericidal or bacteriolytic action, but merely a stimulation of defensive phagocytosis. Raymond Petie, upon this theory, used warm horse serum as a stimulant of leucocytosis. Jayle in France (*La Presse médicale*, 1905, p. 722) and Federmann in Germany (representing Professor Sonnenberg, *Zentralblatt für Chirurgie*, 1905, p. 358) have injected this serum under the skin of the thigh in severe septic conditions in which the blood count showed a great dimunition of leucocytosis. The material is small and no great claim is made for the treatment, but judging from the prognostic outlook the favorable results could hardly be attributed to coincidence. It may be added that horse serum is notably weakened by attempts at preservation. In the same connection may be mentioned a series of cases reported by Hoffer von Sulenthal (*Fortschritte der Medicin*, 1904) in which human convalescent serum was used for erysipelas. This seems to show that serum quickly deteriorates in activity despite the use of preservatives. These conclusions appear to indicate that the preparation of permanent marketable

sera is attended by great drawbacks. Believers in specific antidotes for septicæmia contend that if we cannot apply the special antitoxic or bacteriolytic serum because of difficulties in diagnosis, these difficulties may be met by the use of polyvalent sera; but those who see in serotherapy only a stimulation of Nature's powers of bactericidal phagocytosis do not seek a specific serum but rather the best means of filling this indication. Sera therefore enter into immediate competition with other methods of attaining this result.

Other authorities may be adduced at length, but to the same general effect. My own opinion coincides with the foregoing. I have seen the sera extensively used in various forms of septicæmia but without favorable results which could be justly attributed to the measure. I venture the thought that the general practitioner should definitely understand that streptococcic and similar infections should be managed on the older, established surgical principles.

Tetanus, however, seems worthy of being placed in a separate class. It will be accorded but hasty consideration here, for it is the subject of special reports by others in attendance on this meeting. My own view is that while the antitetanic serum fails in severe and advanced cases it is of value as a prophylactic and in mild and recent cases. An excellent recent article on the subject is that of Suter (Zur Serumbehandlung des Starrkrampfes, etc., *Archiv für klinische Chirurgie*, LXXV, p. 113, 1905), who concerns himself especially with cases which develop despite prophylactic injections. Of fourteen ordinary patients in whom the serum was injected in all possible ways but two patients survived. One of these was treated by intraspinal and the other by subcutaneous injections. In all the disease was severe in type.

The number of cases of tetanus developing despite prophylactic injections is yet too small for judgment, even if we include all published material. In certain instances the condition which develops is mild in character. Quite a number of these are on record. Many fatal cases are known to occur despite both prophylactic and so called curative injections. In most instances the ordinary antispasmodics are employed as well as the serum, and it is difficult to accord to each measure its true value. The whole subject is at present hazy, but it will become clear as competent observers publish detailed accounts of definitely authenticated cases.

CORNER OF FOURTEENTH AND STOUT STREETS.

REMARKS ON SUBMUCOUS RESECTION OF THE NASAL SÆPTUM, AND ALSO ON THE MERITS OF OBLIQUE INCISIONS IN CORRECTING SÆPTAL DEVIATIONS.*

BY THOMAS R. FRENCH, M. D.,
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The new submucous operation, or window resection of the nasal sæptum, which Killian, of Freiburg, Freer, of Chicago, and others have made so attractive and apparently easy by their small arsenal of ingenious devices, is no doubt the main reason for so much attention having been drawn to the sæptum in rhinological circles during the past year or two.

Given a suitable local condition in a subject possessing a good morale, the submucous resection of a portion of the cartilage or bone of the sæptum for the removal of a deviation or spur can now be accomplished in an ideal manner. This operation unquestionably marks a distinct advance in nasal surgery and is a valuable addition to our methods for giving relief. The seeming objections to it in cases of sæptal deviation are, however, not a few. The bulk of the sæptum can be readily removed by this method, and the obstruction to respiration caused by the redundancy of tissue can thus be easily overcome. But in order to remove the obstruction, a part, and in some cases a very large part, of the substance of the sæptum must be obliterated. The tensile strength of the sæptum is very considerable, and it is capable of withstanding a great amount of force applied to it. The questions at once present themselves in connection with this operation: Does or does not the loss of a large portion of the substance of the sæptum increase its liability to subsequent fracture, and does it also make possible an ultimate change in the external nasal outline? These questions have not yet been satisfactorily answered, for the operation has not proved itself by a sufficiently long experience, nor is it seasoned enough for us to know just how well it will wear.

In many of the writings on the new operation we are told that it is believed that the normal substance of the sæptum is reformed, at least to some extent, if the perichondrium or the periosteum is not torn or cut away in the process of stripping off the mucosa. It is just here that the whole difficulty lies. If it could be demonstrated that as strong a partition as the normal nasal sæptum is reproduced in every case, and especially in children before the general growth of the tissues about the nose could give rise to deformity, then the operation would have to be regarded as ideal and would be the preferred operation of the future. Any objections to the final results of this operation must, of necessity, be theoretical, for the material upon which to base practical objections is not at hand, and until results of many years standing can be exhibited we must hold our final opinion in abeyance. I am particularly sceptical, however, in regard to the freedom from the possibility of deformity when sweeping operations of this character are performed upon patients who are below the age in which the greatest growth occurs, and until conclusive demonstrations are forthcoming, from the cases of children who have already been operated upon, I do not think that we have the right to operate in this way on any subject under the adult age. In my opinion it cannot therefore be wise to remove the support of so large an amount of tissue as a deviation usually represents in any but adult heads. In childhood and in youth we cannot know what, under such circumstances, might happen to such an important prop in the stage of the greatest constructive activity. Several cases in which the sæpta of children were resected have been favorably reported a year or more after operation, but such a report is, it seems to me, far from sufficient evidence upon which to base an opinion in a matter of so much importance.

Again, it must be understood that the new method

* Read before the American Laryngological Association, Niagara Falls, May 31, 1906.

offers no promise of correcting external deformity caused by a deviation of the sæptum. In cases where the anterior free edge of the cartilage is deflected into the anterior nasal opening it is advised that the obstructing free edge should be cut out, together with the amount involved in the deflection, leaving only a slender cartilagenous bracket to support the dorsum of the nose until the sæptum becomes firm, or new tissue is formed.. If the anterior free edge of the cartilage should in such a case be removed up to the tip of the nose, then the external deformity would not be corrected, and the air supply might or might not be increased; for the two layers of mucous membrane stretching from the deflected anterior angle of the cartilage at the tip of the nose to the spine of the intermaxillary bone, even if freed from the enclosed cartilage, would remain to partly obstruct the nasal opening.

The mere fact that the partition is firm to the touch after these operations, is, apparently, no proof that cartilage or bone has been re-formed, for a part of such a firm partition from one case was examined under the microscope by Hurd more than a year after operation and no cartilage or bone was found. I am not aware that any other examination of this character has been made. It would appear, therefore, that no one has yet demonstrated the reformation of cartilage or bone in these cases. The partition becomes firm to the touch soon after the operation and it is assumed, on this account, that cartilage or bone really exists, whereas in all probability only bands of fibrous tissue are thrown out from each side of the perichondrium. Killian, who it is believed, has operated upon as many of these cases, by the method under discussion, as any operator, disposes of this feature in these words: "In cases which I have examined after some time had elapsed, I find that the sæptum has acquired quite an amount of resistance. It thus appears to be correct, what other writers have already maintained, that reformation of bone and cartilage takes place from the perichondrium and periosteum."

Even if cartilage and bone do not reform, if the deviation does not include the anterior free edge of the cartilage and is of a character which requires the sacrifice of but a relatively small part of the sæptum, I believe that the submucous resection method of operating is not only justifiable but is possibly to be preferred. But when the deviation is extensive and the resection must of necessity be sweeping, we have a right, in the absence of definite and detailed reports of the ultimate results in such cases, to withold our approval of what properly seems to be a jeopardizing procedure. The one feature, however, upon which I wish to lay stress in my comments at this time is that because of the lack of knowledge of the ultimate effects of the operation upon the external nasal outline before full growth has been attained, we have no moral right to subject children to the risk of facial deformity simply because the operation is new and attractive, and does not oblige the patient to submit to the somewhat disagreeable after treatment required by some of the older methods.

There are two frequently noted objections to the operation of submucous resection, viz.: the length of time necessary to accomplish it and the occasional occurrence of perforations after it. The time needed depends upon the experience and skill of the operator, but the amount of time ought not to be urged as an objection if the results warrant it. I believe that it has been sufficiently demonstrated that perforations are not at all likely to follow operations which are performed in a proper manner.

I do not wish to pose as an opponent of submucous resection of the sæptum. Indeed I am not that, but, on the contrary, am a warm admirer of the method for the relief of nasal obstruction in a certain selected class of cases. I have prepared these notes partly to sound a warning against too great a sacrifice of the sæptal support in adults but more particularly against operations of this character on the sæpta of children.

One of the chief reasons given for the advocacy of the operation of submucous resection is that failure so frequently follows attempts to correct deviations of the sæptum by all other methods. There can be no doubt about the validity of one of the other objections to the method of replacement, viz., the somewhat prolonged and disagreeable after treatment, but in the light of my own personal experience in cases where I have followed the after treatment to the end, I do not believe that failure need often result from the employment of what heretofore have been regarded as the standard methods. That many failures have followed attempts to correct deviated sæpta by the various methods of incision and forcible replacement cannot be denied, but I am not disposed to attach all the blame to the methods themselves. The failures are unquestionably not infrequently due to a lack of knowledge of the mechanical laws involved and intelligent care in after treatment. Success in the replacement of a deviated sæptum depends, as in any and every other difficult operative procedure, upon attention to detail. A horizontal and vertical cut through the convexity of the deflection, forcing the fragments into the unobstructed naris and the introduction of a splint or tube to retain them in position, is not all that is required. A study of the deflected partition will show where the incisions should be made to get the best results, and after they are made the resiliency of the cartilage must be destroyed to prevent a tendency of the parts to return to their former position.

A year or more ago I became aware of a reason why some of the patients operated upon for deviation of the sæptum did not recover successfully, and since applying the remedy to overcome the difficulty I have had such uniformly good results that I am disposed to believe that it will prove to be a feature of value in these operations. When the ordinary incisions are made through the sæptum they leave an edge which is at right angles to the surface of the cartilage. In other words a square edge. If after section of the sæptum with such straight cuts overlapping does not occur, or is slight, there are apt to be several points at which the edges of the flaps may catch each other and so prevent the desired overriding. I now make both horizontal and vertical incisions obliquely so that all the cut edges of the cartilage or bone are left with rather sharp angles. That not only furnishes a greater amount of tissue for the overlap, but because of the slanting shape of the edge of the flap each edge is almost certainly prevented from catching and holding the opposite edge. Or if the edges

are engaged at an angle—that is by crossing each other—they will, because of their thinness, split each other under the retaining pressure of the splint, and there will be a much greater likelihood of the flaps being held up to the median line than if their edges were square. Since writing these lines I have found in Beaman Douglass's recently published and admirable treatise on *Nasal Sinus Surgery* the following words which bear upon the feature referred to in this paper: "With the little finger placed in the side which was obstructed, the cut and fractured triangular cartilage is pushed into the opposite side a little past the median line. In doing this a very slight overlap frequently takes place along the edges of the incision, especially if the incision through the cartilage is slightly bias."

150 JORALEMON STREET.

ÆTIOLOGY OF GASTRIC ULCER.

BY M. R. BARKER, M. S., M. D.,
Chicago.

While it is not the object of this paper to attempt to establish a definite ætiology of gastric ulcer, it may be interesting and profitable to review this subject, bringing out more prominently some of the different theories that have been advanced, some of which have been accorded a respectable hearing and have been decorated with at least a badge of truth by no inconsiderable number of the medical profession, some accepting a certain theory without much thought, others accepting it because it looked more plausible than any other promulgated. The theory that has received the largest measure of credulity and has been more widely accepted than any other, is that borne of the idea of a blood stasis in the gastric circulation, due to an embolus, or thrombus, choking a small arterial twig in the gastric wall, this small devitalized portion of the stomach wall, being attacked by the hydrochloric acid of the gastric juice, breaks down, resulting in ulcer.

This theory presumes too much. That such condition may exist in a few isolated cases, cannot be disproved though a reasonable doubt as to their ever producing ulcer may always exist. If this theory were true, gastric ulcer would be a secondary condition to organic, cardiac, or vascular disease, which we know in a great majority of cases it is not, while on the other hand we have thousands of cases of organic heart and vascular diseases, in which ulcer of the stomach does not complicate. In fact, we do not expect to find gastric ulcer as a complication of cardiac nor vascular disease.

If this theory maintained, ulcers of the stomach would not have a selective position upon the gastric wall as they now have, but would occur as frequently at one location on the stomach wall as another. In connection with this theory of the ætiology of gastric ulcer, the thought has occurred to me while studying this subject, that ulcers of the stomach might have the same ætiology as ulcers elsewhere in the body, for instance in the rectum or on the limbs. These ulcers are due, we know, to local blood stasis, the blood stasis being due to varix, the varix being due to the inability of the veins to empty themselves, because of the impaired condition of their valves and their remote location from the heart, causing blood stasis and devitalized tissue which breaks down forming ulcers.

The veins of the stomach have no valves, they empty into the portal vein, and the blood must pass through the liver and back to the ascending vena cava on its way to the heart, hence the blood in these veins is less directly under the control of the heart than the blood in the long saphenous or hæmorrhoidal veins. The blood is retarded in the gastric veins by the slow current of the portal vein. The veins at the pylorus are much more tortuous than those at the fundus of the stomach, for reason of the small size of the pylorus, hence a greater probability of varix occurring here, the usual seat of gastric ulcer, than at the fundus. If impurities in the venous stream have any deleterious effects upon the walls of the veins which tend to a weakening of them and to the production of varix, such conditions would preeminently prevail in the gastric veins. While this theory of the ætiology of gastric ulcer due to blood stasis in the gastric wall produced by varix, has never, so far as we know, been expounded, it has a better foundation in fact upon which to rest than any of the other blood stasis theories. Whether this theory is true or false can only be proved by the careful examination of the stomach wall before the tissues have broken down and the ulcer formed, after the ulcer is formed it is too late to discover the varix, because the veins and tissues are destroyed in the varicosed area by the formation of the ulcer. Hence to prove or disprove this theory is a difficult proposition.

The theory of infection as the cause of gastric ulcer has its adherents, but if our knowledge of bacteriology is not very defective, this theory has no foundation. The reasoning that gastric contents is constantly passing through the constricted pylorus and that slight traumatisms to the gastric wall must occur seems rational, but that these tissues are invaded by pathogenic germs and infected by them, seems improbable in the presence of the highly acid nature of the gastric juice in gastric ulcer. If the tissues infected were in the deeper portions of the stomach wall primarily, as argued by some, and out of the reach of the hydrochloric acid of the gastric juice, hence uninfluenced by it while thus protected, this reasoning would not hold good, when the ulcer invaded the mucosa as it always does; when this occurred the acidity of the gastric juice would destroy the infection and cure the ulcer, which we know never happens; hence unless there is an unknown pathogenic germ that thrives in an acid medium, the theory of infection as a cause of gastric ulcer has little to substantiate it.

We believe however that the ætiology of gastric ulcer can not be founded upon the theory of blood stasis, nor upon the theory of infection, but that it must be sought for elsewhere and along avenues of an entirely different character.

For the scientific pursuit of this subject, we should avail ourselves of all the relevant facts pertaining thereto, so far as they are known, and to these and reasonable deductions therefrom, limit our study, thus being bound by that tether that confines us to fact and reasonable deductions from it, eliminating from the study all of those questions that might seem probable, but not possessing a

foundation in fact, we may arrive at a reasonable theory as to the ætiology of gastric ulcer.

It is not necessary to take up the anatomy of the human stomach. All know that the stomach is provided with nerves, glands, blood vessels, and different coats, and that it occupies a place and has a function to perform among the digestive organs. For the purpose, however, of making clear and definite this discussion, we shall briefly study the gastric glands and the cells therein contained and their functions.

The mucous membrane of the stomach is provided through its entire area with glands, the mouths of which open upon its surface. There are two kinds of cells found in these glands, known as the main and parietal cells. The glands at the pylorus are provided with the main cells only, while the glands of the fundus and body of the stomach are provided with both main cells and parietal cells. The function of the main cells in the gastric glands is to secrete from the blood that is brought to them, pepsin and lab ferment or rennet. The function of the parietal cells is to secrete from the blood conveyed to them hydrochloric acid. These cells are controlled by filaments from the sympathetic nervous system.

It has been well established that the hydrochloric acid secreted by the parietal cells of the gastric glands, is derived from that element in the blood produced from the sodium chloride taken into the system. Experiments have shown that hydrochloric acid does not appear in the gastric juice of animals that have been deprived for some time of sodium chloride, but that the withholding of sodium chloride does not effect the secretion of pepsin nor lab ferment, and that when these animals are again supplied with sodium chloride hydrochloric acid immediately appears in the gastric juice. It might be reasoned from this that the amount of sodium chloride ingested, might influence the amount of hydrochloric acid secreted by the gastric cells. In other words, if there was a large amount of sodium chloride ingested, an over amount of hydrochloric acid would be secreted, thus producing hyperchlorhydria. This has been proved not to be true. Normally the gastric cells secrete just the amount of pepsin lab ferment, and hydrochloric acid, which, when combined, make a gastric juice that is most potent in digestive effort. This has been found to contain from 0.2 of one per cent. to 0.4 of one per cent. free hydrochloric acid. A large amount of sodium chloride ingested does not vary the amount of hydrochloric acid secreted. It is probable that much more sodium chloride is ingested every day by individuals than it necessary for the production of the hydrochloric acid in normal gastric juice. When the gastric juice is composed as stated, normal digestion takes place, but when the hydrochloric acid is increased or diminished from this standard, the equilibrium of the gastric juice is destroyed, and indigestion is the result.

What is this ever present force that controls the secretion of hydrochloric acid and maintains the equilibrium of the gastric juice in the normal individual? This force is the needs and demands of the system expressed, or exerted, through the sympathetic nervous system. The cells of the gastric glands are controlled by sympathetic nerve fibres. When food is deposited in the stomach it is placed there because of the demand of the system for maintenance. That the demand shall be satisfied, this food must be prepared by that process we call digestion, so that it may be distributed to the different tissues of the body. This need or demand of the system for food and the presence of undigested material in the stomach, produces a sympathetic nerve stimulus which, acting upon the cells of the gastric glands, cause them to functionate with the production of lab ferment and pepsin from one set of these cells, and hydrochloric acid from the other set. When the needs of the system have been supplied by the action of sufficient and potential gastric juice on the material in the stomach, the stimulation ceases, and the process is at an end until the needs of the system again arises, when the whole process is repeated. This description portrays the normal workings of a normal system.

What has this to do with the ætiology of gastric ulcer? It is a well recognized fact that gastric ulcer is a culminating process of hyperchlorhydria. In other words, gastric ulcer never exists except after a more or less protracted over production of hydrochloric acid by the gastric glands; hence an imperfect gastric juice with diminished digestive power and consequent gastric indigestion for a long period of time preceding gastric ulcer. Those agencies, then, which control the normal secretion of hydrochloric acid must be modified by some influences which so change the normal workings of the gastric cells, as to cause them to over produce.

Where, then, is the trouble and what are the influences that cause it? The trouble must exist either in cells that have become abnormal and over produce from a normal nerve stimulus, or a normal nerve stimulus has become abnormal and causes an over secretion from normal cells, or perhaps a combination of both. We believe the influences operating on these cells are often psychical. The condition of the mind influencing the nerve stimulus causing the cells to over produce hydrochloric acid. Examples of such conditions, we believe, may be found in irritable conditions, lasting for indefinite periods, caused by business trouble and domestic infelicities. We believe the emotions may also be responsible for a certain proportion of the influences that change these normal nerve stimuli to abnormal and cause an over functionating of the gastric cells.

The influences operating upon the sympathetic nerve centres, which may cause over stimulation of the organs they supply are legion, they may be external or internal, psychical or physical. They may be due to infections, toxines, or ptomaine poisons. They may be due to thermic conditions, or chemical reactions. In a given case of hyperchlorhydria it might be impossible to discover the cause for the over stimulation of the gastric cells and the over production of hydrochloric acid. Yet, the fact remains that these cells do over secrete, that hyperchlorhydria is the result, and that back of it is an influence of some nature that is responsible for the trouble. But every case of hyperchlorhydria does not result in gastric ulcer. In fact, we know the greater number of these cases recover without the formation of ulcer, while other cases continue for indefinite periods without ulcer forming.

While this is true it is also true that gastric ulcer

always occurs after a protracted course of hyperchlorhydria and its consequent indigestion. So universal is this, that we are justified in the conclusion that hyperchlorhydria and its accompanying indigestion are prominent factors in the ætiology of gastric ulcer.

Disease producing and tissue destroying influences of whatever nature, working within the living body, are in a majority of cases overcome and cast out of the system by this force of Nature, or that mysterious force known as life; hence hyperchlorhydria does not always terminate in ulcer, but a change of the normal working of the system is brought about by this force, which terminates the case before ulcer is produced. Sometimes however by a combination of destructive influences working together for long periods of time, the vital forces are subdued, and the tissues of the body, either generally or locally, as the case may be, are subjected to the ravages of these viscious influences, and in the stomach under such conditions ulcer results. The pylorus is peculiarly the seat of gastric ulcer. This portion of the stomach is narrow, and all the substances of whatever nature that are taken into it must pass through this narrow outlet, being forced along by the action of the muscular mechanism in the stomach wall.

It is a reasonable conclusion from the facts given that in that class of cases in which there has been a long continued hyperchlorhydria, and by reason of it only a partial digestion of those elements of the food takes place, which should be digested in the stomach, the long continued wear, or traumatism of of these tissues by these undigested elements as they are forced over them, and the corroding influence of the superabundant hydrochloric acid constantly present, in some cases should overcome the vital forces of these tissues, break them down, and cause ulcers to form.

It is a well known fact that anæmic patients are peculiarly susceptible to hyperchlorhydria, which is more liable to terminate in gastric ulcer than in other patients. Anæmics are more susceptible to those influences which change the normal secretion of hydrochloric acid in the gastric cells to an over secretion, hence the frequent occurrence of hyperchlorhydria in these patients. We may not be able to define or analyze these influences yet, but we know they exist, and we know their power.

In this class of cases the life forces are below par, and all of the tissues of the body are below normal. It is easy to understand, why the mucous membrane of the pylorus in these cases yield more readily and frequently to traumatic and corrosive influences, and ulcers form, than in that class of cases where this general diseased condition does not maintain.

We may with propriety in this connection speak of two kinds of gastric ulcer, the differentiation between which depends upon the ætiology and prognosis. We shall term them the real and the artificial. The real gastric ulcer is that variety of which we have herein spoken. It is that variety we are called upon to treat, and develops as described and when established does not tend to recovery. The artificial gastric ulcer is produced artificially by the ingestion into the stomach of animals for long periods of time of substances which, by their deleterious action upon the mucous membrane of the stomach, overcome the forces of Nature and form ulcers. Hyperchlorhydria is not in these cases an ætiological factor. Usually the artificial ulcer is produced purposely in an endeavor to establish a definite ætiology for real ulcer. So far, however, this object has not been attained. It has been shown, however, that the feeding of large quantities of the colon bacillus to dogs, for a long period of time produces ulcers in the stomach, but not because of an infectious condition set up by the germs, but because of the deleterious effects of the whole process on the vital forces of the mucous membrane of the stomach.

TO RECAPITULATE.

The ætiology of real ulcer may be classed as remote and immediate. The factors entering into the remote ætiology are those influences which cause an over secretion of hydrochloric acid by the cells in the gastric glands. These influences are varied and numerous, and possibly cannot be definitely determined in any given case. The elements entering into the immediate ætiology of real gastric ulcer are, we believe, an excess of amount of free hydrochloric acid for an indefinite time in the gastric juice, and faulty digestion in the stomach as the result, and traumatism of the mucous membrane of the pylorus due to the forcing of the undigested mass through the narrow outlet for a long period of time. These forces working together, overcome the forces of Nature in a rather small per cent. of cases, and ulcers result.

Anæmics are peculiarly susceptible to those influences which produce over secretion of the hydrochloric acid in the gastric cells, therefore hyperchlorhydria often complicates this condition and frequently terminates in gastric ulcer for reason of the devitalized condition of the general system.

4625 GREENWOOD AVENUE.

ADDRESS ON TUBERCULOSIS DISPENSARIES AND THE COORDINATION OF MEASURES AGAINST TUBERCULOSIS.*

BY R. W. PHILIP, M. A., M. D., F. R. S., F. R. C. P., ED.,
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Physician to the Royal Victoria Hospital for Consumption and to the Royal Infirmary.

The tuberculosis dispensary as a factor in the campaign against tuberculosis is no longer on its trial. In any complete organization against tuberculosis the dispensary will be found to play a most important part. This has been my belief for the past twenty years. It was this that led to the foundation by me in 1887 of the Victoria Dispensary for Consumption in Edinburgh. The practical value of what was then an *a priori* conception has been firmly established during the development of operations. Increasing familiarity with the idea has led to a widespread recognition of the significance of the dispensary. More recently, the rapid and apparently independent erection of similar institutions in Belgium, France, and Germany has been remarkable.

Conception of the Tuberculosis Dispensary.

The motif for the establishment of the Victoria

* Address delivered before the International Conference on Tuberculosis at The Hague, September, 1906, in opening the discussion on the subject.

Dispensary in 1887 was the query: What practical value had accrued to the community, as a community, by Koch's discovery of the tubercle bacillus? If the community, as such, was to benefit practically by the discovery, there appeared to be need of centralized effort in order to ascertain the extent of tuberculosis in a district, and to devise means for its limitation and prevention.

To meet this indication, the method of treatment which was then in vogue in hospitals was useless. The amelioration, or even cure, of a certain number of cases of tuberculosis could do little to affect the wider issue. The formation of a central institution or dispensary to which persons of the poorer classes affected by tuberculosis should be invited or directed seemed to offer the basis of a completer solution. Thereby access would be readily obtained to the foci of disease, not merely in the affected individual under examination, but also in other members of the same household and in affected dwellings. It was felt, that thus facts, not otherwise easily obtainable, were likely to emerge regarding the natural history and distribution of the disease.

Such considerations induced me, in 1887, to propose to the city of Edinburgh, through the then lord provost, that a dispensary for tuberculosis should be established on lines to be afterwards referred to. At that time, however, the city was not prepared for what perhaps seemed a leap in the dark, and, so far as the corporation was concerned, the matter was allowed to drop. Having failed to obtain the *ægis* of the city, the Victoria Dispensary for Consumption was founded by private charitable enterprise in November, 1887. In Scotland, the tuberculosis dispensary was not as in some other countries an after thought—the younger sister, as it has been termed, of the sanatorium—but was truly the starting point of the tuberculosis campaign in the city of Edinburgh, from which the other agencies have emerged.

Functions of a Tuberculosis Dispensary.

The tuberculosis dispensary should be, for every city or district, the uniting point of all other agencies. It should not be an isolated institution, but form an integral part, indeed the centre, of a great network of operations. To the dispensary, tuberculous patients of the poorer classes, and patients with chronic colds or persistent ill health, should be invited. Tuberculous patients presenting themselves at infirmaries, hospitals, and other charitable institutions should be directed to the tuberculosis dispensary. Employers of labor and heads of public works should be apprised of the existence of the dispensary, so that invalid employees may be directed thither. The public should be made aware that the dispensary is prepared to answer all inquiries regarding tuberculosis, and to advise, in a given case, what is best to be done. The dispensary should constitute a centre for the dissemination, in the widest fashion, of information regarding prevention and treatment.

The Royal Victoria Dispensary for Consumption, Edinburgh.

The programme of the Royal Victoria Dispensary was as follows: 1. The reception and examination of patients at the dispensary, the keeping a record of every case with an account of the patient's illness, history, surroundings, and present condition, the record being added to on each subsequent visit. 2. The bacteriological examination of expectoration and other discharges. 3. The instruction of patients how to treat themselves, and how to prevent or minimize the risk of infection to others. 4. The dispensing of necessary medicines, sputum bottles, disinfectants, and, where the patient's condition seemed to warrant it, food stuffs, and the like. 5. The visitation of patients at their own homes by (1) a qualified medical man, and (2) a specially trained nurse, for the double purpose of treatment and of investigation into the state of the dwelling, the general conditions of life, and the risk of infection to others. 6. The selection of more likely patients for hospital treatment, either of early cases for sanatoria, or of late cases for incurable homes, and the supervision, when necessary, of patients after discharge from hospital. 7. The guidance generally of tuberculous patients and their friends, and for inquiries from all interested persons on every question concerning tuberculosis.

Premises.—The Victoria Dispensary as at present arranged contains: Two consulting rooms, a laryngyscopic room, one large waiting room, two dressing rooms (male, female), a general office where names are entered, a laboratory for bacteriological examinations, and a drug and food store. The dispensary is open thrice weekly for three or four hours.

Dispensary Staff.—The staff consists of: (1) Four qualified physicians who attend when the dispensary is open for the purpose of examining and instructing patients. Three of the physicians are honorary.

(2) One of the medical officers receives a salary of £60 a year, and devotes a large amount of time to the work. In addition to examining patients at the institution, along with the honorary physicians, he pays domiciliary visits to the dwellings of patients, in cooperation with the trained nurse. He makes bacteriological examinations of expectoration and other suspect discharges. By arrangement with the city authorities, he notifies all cases of tuberculosis which he meets. He advises regarding the disinfection of houses during illness and after the removal or death of the patient. He supervises treatment of patients at their own home when this is desirable. He selects suitable patients for the sanatorium. In cooperation with the city authorities, he drafts the more advanced or dying patients to an hospital now dedicated to such cases in the neighborhood of the city.

(3) A nurse who has been carefully trained in modern open air methods at the Royal Victoria Hosptial for Consumption, Edinburgh—the sanatorium in connection with the dispensary—visits the homes of the patients. She readily wins their confidence by her interest in their welfare. She instructs the patients or their friends (wives, mothers, etc.) both as to treatment and prevention. In cooperation with the visiting physician she reports regarding the patients' residence and

other conditions, according to the annexed schedule of inquiry. The reports, when completed, are vouched for by the signature of both doctor and nurse.

SCHEDULE OF INQUIRY REGARDING DISPENSARY PATIENTS.

No. in Ledger..... *Date of Report*.....
Name Age
Address Married or single?
Occupation Has patient changed occupation?
Able to work full time? Or part time?
If unable, confined to bed?
How long ill?
Situation of House (area, ground floor, 1st, &c.)?
Number and Ages of Inmates?
Number and Description of Rooms?
General aspect of House (clean, damp, dusty, smelly)?
Number of windows? Can they open?
Are they kept open (*a*) by day?
(*b*) by night?
Have they always been kept open?
Does Patient sleep alone (*a*) in Bed?
(*b*) in Room?
How is Washing of Clothes done?
How long in present House?
If has moved within two years, previous Addresses?
Have there been illnesses or Deaths in House?
(*a*) In own time?
(*b*) In previous occupancy?
Exposed to infection (*a*) at home?
(*b*) at work?
(*c*) among friends?
Present health of other members of household?
What precaution taken to disinfect?
T. B. in sputum?
T. B. in dust of room?
General dietary? Teetotal?
General condition (well-to-do, badly off)?
Proximate income of household?
Assisted by Societies, Church, Friends, Rates?
Signed.....*Reporter*.
.....*Medical Officer*.

(4) A volunteer samaritan committee of ladies, in conference with the doctors, take charge of more distressing cases, where through prolonged illness the financial conditions have been much reduced. In many cases they visit the patients' houses. With the assistance of the numerous charitable and parochial organizations which exist in the city they are enabled to adapt the relief necessary to the particular case. The members of the samaritan committee further occupy themselves with the question of suitable employment for tuberculous persons fit for some effort, although unable to work an entire day. In some cases they arrange likewise for patients who have been discharged from the sanatorium. Attention is also paid to the case of school children affected with the disease, so as to have their education supervised on more physiological lines. The operations of the committee are regulated at fortnightly meetings and a minute of the business is kept.

(5) An officer, a workingman who gives his entire time to the dispensary, lives on the premises. This man receives and enters the names of the patients on the afternoons when the dispensary is open. When the dispensary is not formally open, he attends to requests from patients or other persons. The officer is conversant with the home and work conditions of many of the patients, and is a valuable lieutenant both to the doctors and nurse.

Results of Dispensary Operations.—The organization of the dispensary is thorough. Each part of the system is closely related to the rest, so that a large amount of work is expeditiously and inexpensively overtaken. From first to last we have found no difficulty whatsoever in relation to the nurse's house to house visits. On the contrary, these have been most gladly welcomed by all types of patients, and her inquiries willingly answered. There can be no doubt that the system of domicilary visitation by a specially trained nurse, in cooperation with the doctor, has been a sanitary agent of great importance to the city of Edinburgh.

From my experience of the satisfactory way in which the work of investigation and general guidance is effected by the nurse, who herself has been most carefully trained in methods for the prevention and treatment of tuberculosis, I should be unwilling to replace her services by those of the so called workingman *enquêteur* as recently recommended in France and Belgium.

The dispensary's programme has been successfully carried out by the staff during the past nineteen years. During each year some 17,000 attendances have been registered. As many as eighty-seven individual patients have been received in one day. About 1,000 reports are made annually regarding the home conditions of patients, and about as many notifications have been made to the city authorities.

By means of the systematic record of the home conditions according to the schedule referred to, there has been accumulated a great mass of valuable statistics and information regarding the incidence of the disease in the district. These are continually added to from day to day.

An analysis of these records has yielded facts of the greatest importance. Thus, there has been illustrated the extreme frequency of tuberculous disease in children and in housewives. A map of the city has been made showing the frequency of the disease in certain houses and streets. Proof has been obtained of its occurrence along with various insanitary conditions of dwellings (insufficient air, absence of sunlight, etc.), and the attention of the authorities has been drawn to the fact. The reports show the frequency with which one or more persons share a room, or even a bed, with the consumptive patient. Particular attention has been paid to such cases, either by removal of the affected patient (a) to a sanatorium, or (b) to an hospital for dying cases, or by removal of unaffected members of the household to healthier surroundings. One of the doctor's duties in such circumstances is to examine into the health of other members of the family. It is remarkable how frequently two, three, or even more persons, not previously suspected, have thus been shown to be tuberculous. Another important point has emerged, viz., the frequency with which the tuberculous patient, from one cause or another, often from financial reasons, changes his house. By this means infected areas become quickly multiplied. The records also show the absence—apart from the interference of the dispensary—of precautions with a view to disinfection. Now happily, by arrangement with the city authorities, the dwellings of such patients are thoroughly disinfected at the city's expense.

It has been sometimes maintained that such a

dispensary is impracticable, as running counter to the interests of, and therefore likely to be opposed by, the medical practitioners of the place. This has not been the experience of the Victoria Dispensary. From the first, a large number of the doctors cooperated cordially with the promoters of the movement. Now that the aims of the institution are thoroughly understood, the great body of the profession avail themselves freely of its resources. A large proportion of the patients received at the institution are sent by medical practitioners, either for diagnosis in doubtful cases, or for treatment and other guidance. The Royal Infirmary and other hospitals throughout the city work similarly in harmony.

It should be clearly understood that a dispensary such as this is a much more elaborate institution than exists in relation to the out patient departments of consumption or other hospitals. The latter doubtless do excellent work, so far as their resources allow. Their effort is, however, primarily directed towards the treatment of the individual patient, and little attention is extended to the wider aspect of the tuberculosis problem.

Maintenance and Development of Dispensary. —This sketch of the operations of the Royal Victoria Dispensary during the nineteen years of its existence and development may serve to illustrate the important part played by a well organized dispensary in any complete movement against tuberculosis. It will be found desirable that operations should extend on all the lines I have indicated. The dispensary should be in closest relationship with sanatoria for early cases and with hospitals for dying cases. Thus the Victoria Dispensary has established as sanatorium the Royal Victoria Hospital with accommodation for eighty patients, and has relationship, through cooperation with the city authorities, with a hospital for dying cases, with accommodation for fifty persons.

As to maintenance, a further question presents itself. Having regard to the extent of the issue we cannot afford to trust to individual effort, or even to wider benevolent enterprise. The citizens must be educated to a truer conception of the vast proportions of the evil to be faced, and the hopefulness of a thorough campaign. There exists a claimant call that each community should tackle the matter in a determined fashion in the interest of the public health, even more than that of affected individuals.

On whom then should fall the responsibility for such an organization? The answer seems to be clearly, on the local authorities, municipalities, parish councils, boards of guardians, and the corresponding bodies in different countries. In our cities the institution should be municipal. Experience in the foundation and development of the Royal Victoria Dispensary has satisfied me that the extensive ramifications of the disease demand that the central dispensary as a base of operations should be maintained by the local authorities. Local authorities ought to possess the information regarding tuberculosis which a well planned dispensary is calculated to yield.

The dispensary should be placed under the direction of the medical officer of health. It should, however, form a separate and well defined department of his activity.

The actual cost of the Royal Victoria Dispensary is approximately £500 per annum. This is a small sum having regard to the extent of the operations. The advantages accruing to the community are incalculable and should thoroughly justify the discharge of public money for the purpose.

Progress of the Movement.

So far as Scotland is concerned a rapid advance has been made. Every year the extent of operations of the Victoria Dispensary has steadily increased. Several towns and districts of Scotland have awakened to the large sphere of work which is compassable only by such an institution as the tuberculosis dispensary. Still more recently the Local Goverment Board of Scotland, the highest administrative authority under parliament for all matters concerning public health in Scotland, has emphasized in the strongest way the significance of the dispensary as an important element in the administrative control of pulmonary tuberculosis, and has strongly recommended local authorities to institute such dispensary or dispensaries on the model of the Royal Victoria Dispensary at Edinburgh.

Uniformity of Organization Against Tuberculosis.

Much is to be gained by uniformity of action in such a campaign. Deeply impressed with this, I venture to reiterate what I have frequently had occasion to propose as a scheme of organized operations against tuberculosis which might be uniformly followed in our larger centres. The organization, which implies notification in one or other form, should include:

(1) A tuberculosis dispensary with the functions and relations I have attempted to outline.

(2) A hospital or asylum for dying patients, chiefly in the interest of other persons.

(3) A sanatorium or sanatoria for selected patients who, with a view to cure of the disease, require a special régimé not procurable at their own homes.

(4) Colonies for the after life and supervision of patients in whom the disease has been arrested, so as to make selected open air employment feasible and desirable.

The various departments should be in close organic relation. They will each be more serviceable the more closely they are related. Every step in the gradual development of the Edinburgh scheme during nineteen years has strengthened my belief in the efficacy of the tuberculosis dispensary as a base for further operations. In this belief I recommend to every considerable community the establishment of such an institution which will serve at once as a developmental centre and uniting point of other agencies.

It seems to me difficult to overestimate the value of the tuberculosis dispensary as an instrument of preventive medicine, whether as a bureau for receipt and distribution of information and assistance, or as a clearing house in respect of the vast amount of tuberculous material with which every community will find itself called upon to deal.

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THE INSANITY OF ADOLESCENCE.*

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The selection of this subject has been made because of the fact that of all forms of mental derangement this most frequently presents itself for the consideration and attention of the general practitioner of medicine. He is present when the infant makes its advent into the world, and is called upon by fond parents in all the vicissitudes of disease visited upon the child. He watches with almost a fatherly interest its evolution step by step, from the cradle to manhood or womanhood. He observes with peculiar pride the various stages of its development.

The adolescent period, or the time of transition from childhood into manhood or womanhood, is naturally one of interest and concern to him. The thinking family physician realizes that it is a developmental period of great importance and beset with numerous possibilities and pitfalls; that it is the period of life in which there is the unfolding of a previously quiescent nervous system; that during this period there is manifested, for the first time, profound intellectual and emotional changes, with startlingly rapid physical alterations. There are some important points which need to be emphasized: These are the establishment of the reproductive function with all the changes which go along with it; the development of the ethical and religious and moral emotions; the awakening of altruistic impulses; the birth of ideas regarding the actual significance of human institutions, relations, and organizations, and the exhibition of various traits, the peculiar outcome of heredity.

The term "insanity of adolescence" is here used to designate a certain group of cases of mental derangement manifesting itself during the developmental period of life, roughly included between the ages of twelve and twenty-five.

It has in this acceptation a number of synonyms. The Germans call it *dementia præcox,* the French *confusion mentale primitive* and *folies des dégénérés;* the Italians designate it as *demenza primitiva* and *sensory insanity,* while the English treat of it under such names as *pubescent insanity* and *adolescent insanity.* The designation *primary dementia* is also used by English and American authors.

The subject to-day occupies the centre of the psychiatrical stage and is of universal interest from various other standpoints, *e. g.*: Social, moral, legal, and religious. There has been war to the death between rival schools of psychiatry on this subject. The carefully constructed system of French psychiatry seems to be about to meet the same fate as the French cause did in the Franco-Prussian war of 1870—before the German conceptions and explanation of these groups.

There has been manifested a reluctant and apologetical desire on the part of English psychiatrists to concede in the main the correctness of Kräpelin's observations and views. In America a wildfire enthusiasm sprang up—as is apt to occur in every other line—and a great many hospitals for the insane took hold of the German classification, and every case of insanity seemed to be either one of dementia præcox or manic depressive insanity.

The subject was considered of such importance that it was made the principal theme at the Congress of Alienists at Pau, in 1904. While it would seem that the views expressed by Kräpelin were strengthened there is no evidence to show that his classification and views have been finally accepted. In this paper the mere mention of all this controversy is made only in order to indicate the attention that is now being paid to it.

Esquirol in 1838 wrote on *Early Dementia* and referred to such cases as accidental or acquired idiocy. The writings of Rousseau, Moreau, Pinel, Morel, Maudsley, Tuke, Fink, and Mairet show that the insanity of adolescence had been clearly recognized by these authors. Clouston, in 1888, strongly emphasized the fact that the term primary dementia as then used by various authors to designate cases of stupor had a special signification and ought only be applied to cases of true primary dementia, *i. e.*: Those which terminated in conditions of permanent mental deterioration.

In Germany Kahlbaum described heboidophrenia and catatonia in 1863 and 1874. In his work on *Ein Beitrag zur klinischen Psychiatrie* Hecker describes hebephrenia and also refers to English interest on the subject of the neuroses and insanities of the preadolescent period.

Weygandt describes cases of dementia simplex or heboidophrenia. A great many other writers may be mentioned, among them the following: Gauthier (1883), Carl Neisser (1887), Koch (1889), Charpentier (1890), Daraszkiewicz (1892), Griesinger (1892), Sommer (1894), Krafft-Ebing and Wernicke (1900), Bourneville (1901), and Diem (1903).

Pick, in 1891, used the term dementia præcox to designate a group of cases of juvenile insanity characterized by progressive mental deterioration, but it was Morel who first used the designation *démence précoce.*

Kräpelin, by careful, painstaking, accurate, clinical observations and analytical studies of all such available practical material, has given us the picture of dementia præcox under three different, distinct forms or varieties known as hebephrenia, catatonia, and paranoid dementia. He has thus generalized in such a brilliant and remarkable manner all the disease pictures of adolescent insanity as to make the diagnosis, and even the prognosis, fairly clear and easily arrived at.

He gave the *coup de grâce* to a great many conceptions of psychiatrists. It is unfortunate that the term dementia præcox has many objectionable features for practical use, the most important of which is that the cases described under this term do occasionally get well. The term dementia præcox gives the impression of a bad prognosis, for the word dementia, as generally applied, has the fundamental idea behind it of an incurable mental deterioration. The term adolescent insanity leaves the question of recovery open for future determination. The objections that could be advanced against its use, however, are that it may be employed to designate all forms of mental disease occurring during adolescence, and that there is liability of inclusion under the term all those doubtful cases occurring during

* Read before a meeting of the Morristown Medical Club, June, 1906.

this period where insufficient data, clinical and otherwise, are either unobtainable or not properly worked out.

Ætiology.

In considering the ætiology we must first take into account the age. The period of puberty is the first dangerous period in the life of both sexes as regards the occurrence of insanity. During the period of adolescence growth and development rapidly take place, giving rise to changes of a most profound character in the entire organism. It is conceded by all modern writers on psychiatry that this critical time of life is of great importance in the promotion of mental diseases. The latent nervous system is now for the first time seriously disturbed as the result of the onset, development, and establishment of the reproductive functions. Even under the most normal conditions the intelligent and observing physician will perceive a great many indications of instability of thought, purpose, and action, apart from the various manifestations of an improperly coordinated muscular system.

We have next to consider the important matter of heredity. Its influence in the causation of adolescent insanity is deemed to be of but minor or secondary importance by some authors, while others claim that it is essentially an hereditary disease. Henry R. Stedman says: "Inherited lack of stamina and general vigor is at the root of the trouble, a condition that is not necessarily transmitted by insane relations." For the development and production of decided mental unsoundness at this period it is not essential that the ancestors of a person so afflicted should have suffered from some form of decided mental alienation, but they may have exhibited weaknesses of the nervous system in the way of epilepsy, chorea, hysteria, etc., etc., or have been afflicted with syphilis, or been addicted to the excessive use of alcohol. Sir William Gowers, in his lecture on *Abiotrophy,* speaking of senile degeneration, says: "These maladies often come on without any apparent cause, because the term of life for those structures is reached sooner than for the vital organs; they decay in true abiotrophy," and further on: "Mental change, especially simple mental failure, often occurs under the same conditions and no doubt from a slow degeneration of the cerebral neurons which connect and combine others in a way we cannot yet perceive." Herein probably lies the pathology of the insanity of adolescence with a defective nervous heredity.

With regard to the question of heredity, our observations in The New Jersey State Hospital at Morris Plains lead us to consider it to be a very important factor. We must not lose sight of the fact that it is often very difficult to get reliable statistics regarding heredity from friends and relatives, for the reason so well set forth by Dr. B. D. Evans, in his last report of this hospital: "So long as insanity is looked upon as a stigma upon the family in which it is found will there continue to be a disposition to conceal the presence of this serious disease and to withhold from hospital authorities and statisticians the true and full facts bearing upon family taint."

Next to these two important causes environment plays an important part. Badly directed education both of body and mind may pervert the tendencies and weaken the organism to exciting causes, among which may be mentioned various exhausting influences, long hours of study or work, insufficient sleep, improper, unsuitable, or inadequate food, various kinds of excesses, especially alcoholic and sexual overindulgences. The various diseases of childhood, *e. g.*: scarlet fever, diphtheria and the exanthemata, etc., may weaken and prepare the soil. Fright, shock, unrequited love, grief, may be sufficient to give an impetus for the development of the disease. Overwork in school children, the result of a hard struggle to excel or to graduate, may produce a serious culmination in those cases, where the aspirations are greater than the limit of mental capacity inherited.

Premonitory Symptoms.

The premonitory symptoms are more or less the same, whatever the form ultimately assumed may be. The onset, as a rule, is gradual in character. Many cases are reported as coming on suddenly. Very often in these cases a history of the early life of the patient is wanting. There is quite a wide range of symptoms manifesting themselves prior to the establishment of the disease. One of the most important of these is a weakening of the power of attention, or it may be a disinclination or indifference on the part of the patient resulting in the nonexercise of attention. There may be more or less marked mental fatigue induced, which has the effect of producing a failure to accomplish work undertaken. This condition often leads sooner or later to an abandonment of all mental efforts and a feeling of apathy which is often mistaken for depression. These symptoms are scarcely noticed by parents and friends or even by the family physician as being the precursors of mental disease. They are often obscured by superadded symptoms of a more or less neurasthenic character. Headaches are complained of, sleeplessness is frequently developed, and irritable and capricious moods are often manifested. Along with these symptoms there may be a degree of conduct and behavior so sensible and properly directed as to further mislead one as to the developing mental derangement.

Clinical Forms and Characteristics.

The insanity of adolescence presents a group of disease pictures which have been fairly well divided by Kräpelin into three classes: 1. Hebephrenia. 2. Catatonia. 3. Paranoid dementia. These three classes are comparatively definite ones and answer fairly well for the purpose of general clinical classification. A case of adolescent insanity may present at varying periods of its course some of the characteristics of any one or all of these groups. One often finds it a matter of difficulty to fit a particular case into one or another of these classes. A good general idea of these three forms is given by Dercum in his paper on Dementia Præcox, read before the American Medical Association, June, 1904. He says:

In reading Hecker's historical paper on Hebephrenia, one gleans three essential symptoms: First, an initial period of variable duration during which the patient is in a phase of depression; second, a period during which the depression fades, and elements of expansion become manifest; third, and most important of all, a pro-

gressive dementia noticeable early and becoming gradually more and more marked. This is a clinical description which I need hardly point out accords closely with our experiences of to-day.

If we subject the symptom group of catatonia to a similar process of analysis, we find that there are present, as in hebephrenia, the same cardinal factors, the initial wave of depression, the subsequent wave of expansion, or mingled expansion and depression, and a progressive dementia, together with definite and characteristic motor symptoms which give to the disease its specific peculiarities and name, *i. e.*, the fixed attitudes, the stereotypy, catatonia, automatism, automatic resistance, etc.

When we turn our attention to dementia paranoides, and I now use the term in Kräpelin's original application—as employed in his fifth edition—we come to a group of cases in whom there is as before an initial wave of depression, a subsequent wave of expansion and progressive dementia, but added to which there are not now special motor phenomena, but special physhic phenomena in the shape of delusions, persecutory or expansive, which in their character—though unsystematized—suggest or simulate paranoia.

He further says:

In studying the group of insanities of adolescence as a whole, certain other facts also become evident; first we learn, as was pointed out several years ago by Pickett, that the various forms tend to occur by preference at certain ages; that is, other things equal, cases of hebephrenia begin at a younger average age than do cases of catatonia; second, cases of catatonia begin at an earlier average age than cases of dementia paranoides; and thirdly, cases of dementia paranoides constitute the oldest group of all. That this generalization is not detailed in its application goes without saying. It is as are other scientific truths, general in its character, but is of the most decided significance. To some extent the phenomena observed are in keeping with the facts of age; that is, the symptoms largely correspond to the degree of mental development to which the patient has attained at the time of the inception of the disease.

It would be well to make reference to those cases which, because of their mildness, are hardly ever seen by the alienist and constitute a class that seldom finds its way into a hospital. They are persons whose intellectual development comes to a sudden standstill at the time of puberty and even suffers a distinct deterioration or even a retrogression. Among them are often highly gifted young persons who had shown remarkable aptitude for music, or art, or displayed bright talent in some way or other, but had more or less suddenly been unable to make further progress.

They become incapable of making any advance in school, are soon left behind by their schoolmates and often in contrast to their high flown ideas and plans are compelled to eke out a quiet existence, unheard of by their fellows in later years. This may be said to constitute the slightest form of mental enfeeblement occurring during the adolescent period. Such cases are probably those of mild hebephrenia. From this degree we may observe a great many shadings down to the severest forms.

In a number of these cases there is not only a quantitative diminution in the intellectual faculties but many symptoms peculiar to this period of development, aptly called the period of "physiological awkwardness," may be easily recognized, even through the distortions and peculiar coloring given to them by the mental enfeeblement.

Symptoms of a neurasthenic character are often the starting point of the disease. Mental and physical fatigue, irregular habits of living, and general indifference may be the premonitions of the oncoming of the disease. The memory is left intact. There may be some moral impairment. The peculiar and fundamental want of any strong feeling of the impressions of life with unimpaired ability to understand and to remember is really the diagnostic symptom of the disease. There is also a "weakness of judgment and flightiness, a mental and emotional infirmity;" a silly, vacant laugh without a joyous humor corresponding to it; making of faces and gesticulations; fine muscular twitchings in the face; senseless play with syllables and words; irritability and stubbornness.

Among the mental symptoms presented in the insanity of adolescence there is first the intellectual enfeeblement which markedly affect certain faculties and leaves others apparently intact. The perception of external stimuli is not usually deeply interfered with, so that the patients are often well informed as to time, place, and person, except in condition where there may be stupor, mental confusion, profound anxiety or the dominating influence of hallucinations or delusions. Hallucinations, especially those of hearing, are almost always present in the earlier stages, in acute attacks, and in the terminal stages. These hallucinations are at first distressing, but later on, as the dementia advances, are frequently ignored and not alluded to. The attention is always affected either on account of flightiness or a lack of interest. The memory is usually but little impaired. Some patients are capable of noting and remembering things in a remarkable manner. In ordinary cases the patient's thoughts are scattered and are expressed in unnecessary phraseology. In severe forms confusion of speech is frequent. The judgment is almost always deeply affected especially when new problems present themselves. The mental grasp is poor, and the critical faculty is defective. Delusions of various kinds may appear and are generally tinged with sadness at first; later on they may assume a grandiose form, but these are usually absurd and variable. In the paranoid form, however, it is probable that most cases start with an exaltation of the ego, an exaggerated idea of the personality, and that the delusions are based on this.

The emotional condition is at first sad, anxious, or excited; more rarely there may be continued laughing. Growing indifference is well marked. There is a desire for solitude and isolation, the wanting to be left alone and undisturbed. The actions and demeanor show a characteristic lack of determination and carelessness notwithstanding the occasional and useless motor excitement, with sudden impulses to suicide and even homicidal actions for which no adequate cause exists or plausible reason is given. The capacity for work is always deeply interfered with, especially limiting the scope of usefulness. There is often developed a lack of affection for, or a change of disposition towards the parents, relatives, or friends, without any substantial basis therefor.

Occasionally in the hebephrenic type of cases patients suddenly stop working, giving no reasons for it, and loaf about or hang around idly. When

urged to work they become irritable and even angry. Some of them may refuse to eat and offer absurd reasons for not taking food. One of my patients said that she was too poor to eat and could not afford to do so, but that she would buy and eat when she went home. Others keep constantly asking to go home saying that they would get along well at home. If such requests are acceded to and the patients are permitted to go the result is they have to be returned in an unimproved condition in a few days or weeks.

A peculiar symptom known as negativism, or a senseless resistance against every outward influence, may appear in all its forms, the more important of which are persistent obstinacy, forced dumbness, and the refusal of food.

Stereotyped attitudes and movements are exhibited by the purposeless repetitions of certain actions, such as running backwards and forwards untiringly, holding fast pieces of food in the hand, circling around, repeatedly touching some spot on the wall, etc.

Two characteristic symptoms which present themselves in a certain number of cases, and both of which are due to a loss or defect of the will power (abulia), are echolalia or the repetition of words spoken by others, and echopraxia, or the imitation of the actions of others.

The handwriting becomes steretoyped and full of unnecessary repetitions and peculiar phraseology. The composition is often very simple. It has been described by the Germans as being a sort of word salad.

Finally the mental manifestations may present any one of the forms of mental derangement we have been accustomed to designate by the terms mania, melancholia, stupor, confusion, and dementia and paranoid states.

The physical symptoms that accompany the various mental manifestations of the different forms are variable. There may be no physical symptoms at all. This is apt to be the case in the mild forms of hebephrenia.

In a certain number of cases peculiar attacks are present, such as fainting, convulsions, spasms, hysteriform attacks, and even slight transitory hemiplegia. The pupils are often dilated, reaction to light may be disordered, and sometimes inequality of the pupils may be present. Disturbances of the vasomotor system are common; cyanosis of the extremities, peculiar pallor of the face, flushing of the face often without apparent or adequate cause, perspirations, excessive secretion of saliva, which leads to drooling in severe cases. The patients often hold the saliva in their mouths for long periods, keeping their lips firmly shut. One peculiar disturbance of the cutaneous circulation is what is known as dermatographia. When this condition is present if one writes on the body of the patient with the point of a pin or other sharp instrument the writing which at first hardly appears at all stands out after a few minutes in a vivid manner, raised above the skin, the surrounding surface being slightly reddened.

Anæmia is frequently observed. The sleep is much disturbed. The appetite is variable. The weight shows marked fluctuations. Our observations at this hospital lead us to believe that the weight bears a close relationship to the mental condition of the patient. In those cases that progress towards recovery an increase of weight always accompanies an amelioration of the mental symptoms. During remissions or in apparent recoveries the weight is generally at or above normal for such individuals. A loss of weight is a danger signal.

Tuberculosis is apt to develop. I have recently seen such a result in four cases. Some writer has said that the foundation for the development of tuberculosis is generally laid before the fifteenth year. Its relation to the mental derangements of the adolescent period is worthy of careful attention and study both by the general practitioner and the alienist.

One of the most remarkable symptoms that may be manifested in a certain percentage of the cases is a peculiar condition of muscular rigidity or spasm known as catatonia. In this condition all the large muscles become tense, rigid, and strained to the utmost, so much so that the patient can be made to maintain various unnatural positions for a long time. Patients often assume peculiar and strange positions as the result of this rigidity. On one occasion I was able to place a patient suffering from catatonic rigidity with his head and heels resting on two chairs for a period of time which would have given an athlete some trouble to maintain, and which the subject himself could not assume when not in such a condition of muscular strain.

In some cases there is a peculiar puffing and protrusion of the tightly closed lips, which German writers call *Schnauzkrampf*. This is often well seen in the catatonic cases. The thyreoid gland may be enlarged in some cases or an enlarged thyreoid might disappear before an attack. Occasionally hemianæsthesia and limitation of the field of vision with amblyopia may exist; also sensory disturbances of various kinds may be associated. Frequently amenorrhœa may be present. In such cases, with reestablishment of menstruation, there is remission for recovery. Exophthalmic gôitre and chorea have been observed in a few cases.

Statistics at Morris Plains, N. J.

From 1876 to 1884 there does not seem to be any mention of the insanity of adolescence, either in the *Annual Report* or in the records of the cases.

In 1885 we find an attempt at a classification of insanity under the following heads: Mania, acute, chronic; melancholia; dementia, acute, chronic; general paralysis; circular insanity.

In 1887 we see a case of one woman suffering from primary curable dementia.

In 1888 three cases of dementia primary are recorded; two men and one woman.

In 1889 there is no mention at all of primary dementia. In 1890 one case of primary dementia. None again in 1891.

In 1892, the year in which Dr. Britton D. Evans assumed charge of the medical work of the institution, there is for the first time the mention of the insanity of pubescence (five men and one woman) and of primary dementia cases there were two, both women.

In 1893 we find with a much fuller classification of the forms of mental diseases of those admitted the first mention made of both the insanity of pubescence and of the insanity of adolescence. There

were eleven cases of both forms, and puberty is assigned as the cause in all of them. In 1894 five cases of insanity of puberty and three of adolescent insanity.

From then on there is a steady increase in the number of cases of those admitted of both adolescent and pubertal insanity. The number of cases of the former gradually increase while those of the latter decrease.

Further facts of an interesting kind may be given, but these are sufficient to show the growth of our ideas regarding the insanity of the adolescent period and to indicate that we have been progressing steadily though somewhat conservatively.

Diagnosis.

In making a diagnosis of the insanity of adolescence we must bear in mind the invariable and fundamental features of the disease. These are: A loss of mental activity and of interest in particular; the failure of every impulse to energy, and a weakness of judgment. All other symptoms are merely transitory features, however prominent they may be in individual cases, and not to be depended upon as absolutely diagnostic.

Kräpelin says:—

This holds good, for instance, of delusions and hallucinations which are very frequently present, but may be developed in very different degrees, or be altogether absent or disappear without the fundamental features of the disease or its course and issue being in any way affected. Yet we may consider it as a rule, that states of depression which are accompanied *at the very beginning* by vivid hallucinations or confused delusions usually form the prelude to dementia præcox. Fluctuations in spirits are always only of a fugitive kind and therefore cannot be made use of for the diagnosis. At the very onset, indeed, we often observe states of lively apprehension or of sad depression, but generally we can soon satisfy ourselves that the affections of the emotions really disappear very quickly, even when the external signs of them continue for some time longer.

Along with these fundamental features, the heredity, the period of life and the premonitory symptoms are of value in confirming the diagnosis.

The matter of differential diagnosis is a very interesting one but time will not permit me to go into it with any degree of thoroughness. The important form with which it may be confounded is that of manic-depressive insanity. Certain cases of hysterical insanity and of imbecility may simulate adolescent insanity.

Prognosis.

The prognosis should be especially guarded. Periods of maniacal excitement, melancholic stupor, with hallucinations, delusions, and illusions may pass away, and the patient may appear to the relatives and friends as apparently having undergone a cure, but that such is not the case every physician engaged in the care of the insane is fully aware. A careful examination will demonstrate whether the fundamental symptoms of defect such as lack of attention and judgment are present or not.

Dercum says:—

In a given case of dementia præcox, as long as the symptoms of a mental confusion alone are present, or as long as added factors pointing to dementia are but slightly marked, the possibility of recovery complete or partial, must still be said to exist. In other words, we are to apply here a general principle of psychiatric prognosis, that is, as long as the symptoms of actual quantitative mental loss are absent or but slightly marked, we have no right to predicate an unfavorable outcome. The fact that both cases of hebephrenia and catatonia may recover is of course well known, although the percentage of recoveries is yet small. The prognosis varies according to the cause whether severe, transient, or continuous, the age, family history and environment.

As to the recovery, Clouston places it at sixty-six per cent., which is in marked contrast to Kräpelin's figures. He gives a rate of twenty-one per cent. in all cases. It depends upon what is considered a recovery, as in most cases of acute insanity a mental scar may be left.

Pathology.

The pathology is yet to be written. All that can be said is that certain changes take place in the cortex. The pathological findings of Dunton show that there is a general but not excessive series of alterations in the neural elements.

F. W. Mott, in his address on the Pathological Investigation of the Causation of Insanity, says:—

In the true insanities where there is no dementia —for example, delusional insanity, hallucinatory insanity, and even in dementia præcox—the brain in its convolutional pattern and depth of the cortex generally, shows nothing which would enable one to say that it was the brain of an insane person. Nor can we find microscopic evidence of any specific and characteristic change, although many may have been described by enthusiasts.

Some recent work has been done by D'Ormea and F. Maggiotto on the urine of cases of adolescent insanity. As the result of their work they record the following:

1. In dementia præcox there is a special and characteristic change in the elimination of waste material shown:

a. By means of a characteristic curve in the elimination of methylene blue, a discontinuous polycycle.

b. In the general character and composition of the urine, which is diminished in quantity, has a lowered specific gravity, a marked diminution of urea, of uric acid, phosphoric acid, sulphuric acid, total nitrogen, total acidity, and a lowering of the ratio between the nitrogen of the urea and the total nitrogen with a slight increase of chlorides.

2. The elimination of methylene blue in other psychoses is, on the contrary, always more rapid than in the normal individual, and its curve is a continuous polycycle.

3. The elimination presents the same special character in each psychosis, and is influenced but in a slight degree by the syndrome of depression or of excitement which the same patient may show. The elimination in the depressive period is slightly slower than in the period of excitement.

4. In the present state of knowledge dementia præcox may be considered as an entity and is distinct from other mental diseases in probably having its cause in a change in waste material, perhaps producing a toxic substance in the sexual organs, and causing degenerative changes in the brain.

5. The elimination of methylene blue by reason of the constant characteristics which it presents in cases of dementia præcox, offers a means of diagnosis in this psychosis.

Certain research work has been done by Del Oreste Sandri on hæmatology of cases of dementia

præcox in which he comes to the following conclusions:—

1. The first stage of dementia præcox is accompanied by changes of the leucocytic formula indicating a condition of intoxication of the organism; namely, an increase in the total number of leucocytes with a slight polynuclear increase.

2. The appearance of catatonic symptoms in the hebephrenic and paranoid forms is accompanied by changes in the leucocytic formula; namely, a marked increased of mononuclears.

3. The total number and the ratio between the formed elements of the blood does not show any change in the chronic paranoid and hebephrenic forms.

4. The changes in the leucocytic formula above described may be as well compared and with equal value in the recent catatonic form as in the case which has existed for years and may be called chronic.

Pighini and Paoli examined the blood in ten cases of dementia præcox, and their conclusions are as follows:—

1. The red blood cells in dementia præcox, stained by a special method, show a characteristic structure, presenting generally an umbilicated appearance and a slight diminution in size.

2. Such an appearance is not met with in the majority of physical or mental diseases. The only cases showing a similar appearance were two chlorotics and a severe epileptic. It is probable that in time such special blood changes of dementia præcox will be considered not as pathognomonic, but as an index of the severe metabolic changes existing in this disease.

A good deal of research work is being done. The toxic origin of the disease is receiving considerable support. The inclination to hold to such a view as regards the production of the various forms of adolescent insanity is strengthened to a certain degree from the standpoint of its practical value in the matter of prognosis. The acute infections and intoxications as the general practitioner is well aware of are capable of producing a great variety of mental symptoms; for example, delirium, hallucinations, delusions, mental confusion and even stupor. Certain toxic conditions may be reasonably supposed to give rise to symptoms such as we see in the insanity of adolescence. All the results of pathological researches up to the present time do not conflict seriously with the theory of toxic origin in this disease. We know that a number of cases of the hebephrenic and the catatonic forms recover more or less completely. These are probably the cases in which we are unable to trace a hereditary history or in which the inherited weakness of the tissues is not of a grave sort or serious kind.

Treatment.

In cases where the disease is advanced the patients should be sent to insane hospitals and kept under constant supervision. Here they may be allowed, subject to the regular routine and regulations of hospital life, a certain amount of liberty. It is in this group of diseases that preventive treatment would seem to be of much benefit. It is a lamentable fact that while much attention is given to the care of children up to the period of puberty, no special efforts are made to continue such care and supervision during the most important period of life of the human being. At puberty there is an unfolding of a new set of conditions of the body and mind. It is at this period that the sapling if not carefully nurtured is apt to die and not grow into a sturdy tree. At this important time all those qualities of mind which were latest in developing evolutionally are commencing to manifest themselves. Judgment, will power, the logical and critical faculties are all beginning to develop. In adolescent insanity it will be noted that these highest faculties seem to suffer damage first. The capacity for sustained attention which is the most delicate evidence we have of perfection in mental development appears to be blighted very early in this disease. It is well known that these are all functions of the high level structures of the cortex, the regions where memories of complex sense impressions and intricate muscular combinations are stored up. They are the very highest layers where all the memories directing and maintaining attention in conscious thought are located. They are the latest evolved faculties of the human race and, therefore, the most liable to be damaged. The efficiency of their functions depends upon their structure due to heredity, to environment in the way of nutrition, exercise, and training during the plastic period. Clouston, in his classical monograph on the neurosis of development, under the heading of General Considerations in regard to preventive treatment, says:—

Heredity is no doubt the real predisposing cause of them all and the sole cause of many; some of them being in certain cases inevitable during growth and development, but heredity is a question of degree and intensity in each case, and it fortunately needs in many cases an exciting cause to develop the diseases that are its outcome.

That opens up to us a large field of preventive measures against the adolescent neurosis. One or two general principles we are safe in following as making for prevention. Build up bone and fat, especially the fat, by any means known to us during the period of growth and development. Make fresh air the breath of life to the young. Develop lower centres rather than higher when there is bad heredity. Don't give too much flesh and nitrogenous food during growth and adolescence; avoid alcohol and nervine stimulants absolutely if possible as being special stimulants to the higher cortex and the too early development and dominance of the reproductive functions and the sexual nisus. Do not cultivate—rather restrain—the imaginative and artistic faculties and sensitiveness and the idealisms generally in cases where such tend to appear too early or too keenly. They will be rooted on a better brain and body basis if they come later. Cultivate and insist on orderliness and method in all things. The weekly neurotics are always disorderly, unbusinesslike, and unsystematic. Fatness, self control and orderliness are the three most important qualities for them to aim at.

It is necessary at the onset of this period to keep the mind from ingrowing, if the term may be used, and the sovereign remedy for such a tendency is to bring it into contact with the objective life of Nature. Stanley Hall, in his work on *Adolescence*, puts the matter very strongly when he says:—

Never has youth been exposed to such dangers of both perversion and arrest, as in our own land and day. Increasing urban life with its temptations, prematurities, sedentary occupations and passive stimuli; just when active, objective life is most needed, early emancipation and a lessening sense for both duty and discipline, the haste to know and do all befitting man's estate before his time, the mad rush for sudden wealth, and the reckless fashion set by its guilded youth, all these lack

some of the regulatives, they still have in older lands with more conservative traditions.

It cannot be emphasized too strongly that two of the most important factors in the production of the insanities of this period are heredity and environment. In the consideration of the prophylaxis we must not lose sight of the fact that heredity will more or less make itself felt and tend to show itself strongly during the growth and development of the subject we are trying to influence for the better, but we should not fail to remember also that if a properly selected environment is made use of it will undoubtedly tend to counteract the evil effects of a bad heredity. For after all we must look upon heredity as being the sum total of the effects of the environments of the various preceding generations exerting themselves on the organism. What such environment should be it is for the physician to decide, and it is here that there is the necessity of individualizing in each case. Now, if a case of incipient adolescent insanity were taken and surrounded with all the healthful influences known to us we shall no doubt be able to do a great deal to prevent its further progress and to build up the mental weakness in the direction of stability and strength.

Never before in the history of the world has there been such a mingling of the various branches of the human race as there has been and is still going on in this country. In this process there must of necessity be the production of both good and bad types of stock. In the new combinations which arise, just as we see demonstrated in the plant world, the most newly acquired traits of the race are liable to undergo retrogressive or degenerative change. The period when weakness is apt to show itself especially is during the most active and developing period of life, which is of course that of reproduction.

As said before the period of childhood is usually fairly well guarded by the parents and the influences of the home, but at the time of puberty, when most care is needed, the child is soon considered as being sufficiently able to take care of itself, is thrown on its own resources and even made a bread winner. All the hardships and toils that an adult is called upon to suffer and endure the adolescent is made to grapple with. Where the hardihood is great there may be a survival, but in the presence of an inherited faultily constructed nervous system the stress and strain of such an existence must frequently lead to early blighting.

An effort has been made in this paper to give briefly and as clearly as possible the present status of our knowledge on this vast subject and to outline its growth. There are a great many problems regarding the physiology and pathology yet to be solved. They are of the greatest importance to the welfare of the unit and of the nation.

A number of papers have been published recently on The Importance of Early Diagnosis of Mental Diseases. Among them may be mentioned the one written by Dr. John Punton, in the *Journal of the American Medical Association,* and the other by Dr. George Stockton, in the *Journal of Nervous and Mental Disease,* April, 1906. These writers refer to the practical trend of the papers read before the last meeting of the American Psychological Association. They were intended to enforce some practical truths, among which are:

1. The great necessity for a more thorough knowledge of insanity by the general practitioner.
2. The marked and prompt curability of insanity in its incipiency.
3. The extreme susceptibility of insanity to prevention.

It is to the general practitioner that befalls the lot of doing such important work. His peculiar position as family physician gives him an enviable knowledge of all the secrets of the family from the standpoint of the student of disease. He gets to know all the foibles of the various members of the family; he is told collateral history of the family diseases, weaknesses, and habits. In fact, he learns much about the hereditary defects of all its branches; he observes the various tendencies of the children, some of them exhibiting precocious proclivities, and others manifesting a retiring disposition. The matter of their schooling is often referred to him, and at various times he has the opportunity of learning as to the progress they have made in their studies. To him, therefore, must we look for interest and cooperation in our study of the insanities of adolescence.

NOTE ON A HÆMOLYTIC AGENT, PROBABLY A MEMBER OF THE PURIN GROUP, OBTAINED FROM THE URINE IN A CASE OF PERNICIOUS ANÆMIA.*

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Pernicious anæmia is either not a definite disease, or, if it is, the essential underlying morbid process can be the result of a variety of causes. The blood picture, though not, of course, absolutely uniform, is characteristic to a high degree, and it would seem that there must be something in common pervading that group of cases with extreme and progressive oligocythæmia, frequent high color index, megaloblasts, and, so far as the erythrocytes are concerned, a general tendency to megalocytosis. They form a class by themselves entirely distinct from other types of anæmia. This is emphatically true of the blood picture, and it is true with reference to prognosis, excepting in that small group of cases in which the cause is discoverable and removable.

Every advance in the study of blood pathology tends to show that the term primary or idiopathic as applied to the anæmiæ is a cloak to cover our ignorance; and these terms are, in fact, disappearing from literature. Bothriocephalus anæmia may be mentioned as an instance of a supposedly primary anæmia of the pernicious type which is promptly cured by the removal of the cause. Such results encourage the hope that further investigation will increase the number of discoverable causes of the pernicious types of anæmia. This will mean in some cases a change to a favorable prognosis, while in others this will not be true, depending, of course, upon whether the cause or condition thus discovered is or is not amenable to therapeutical measures.

* Read by title before the Section in Medicine of the British Medical Association, Toronto, August, 1906.

Among the several lines along which clinical study may be directed, toxines or other chemical agents appear to me to rank first in importance. Such agents may act in one of two ways: either by interfering with the function of the hæmatogenetic apparatus or, this function remaining intact, by a hæmolytic action within the blood stream. It is along the latter line that this observation was made. It is along this line in fact that I believe the most important results can be achieved, as the demonstration of a hæmolytic process is a much simpler matter than the experimental reproduction of a series of morbid phenomena in the blood making apparatus of animals, which might after all not be applicable to human pathology, owing to biological differences.

A detailed report of the case[1] is unnecessary for the present purpose. It was a typical case of pernicious anæmia in a man, thirty-five years old. The history was the usual one of progressive debility and anæmia of undetermined origin and a vague and indefinite beginning. At the time of my examination the patient was unable to walk more than two or three hundred feet; the pallor was extreme. The blood examination showed hæmoglobin twenty-five per cent., red cells 950,000 per c.m., giving a color index of about 1.25. Megaloblasts were found and poikilocytosis was well marked. The white cells were 5,000 per c.c., and were histologically normal in the stained slide. The analysis of the urine gave the following results: Total quantity for twenty-four hours, 1,800 c.c., no albumin or sugar; total urea excretion, 20 grammes; chlorides, 2 grammes; no bile pigments, a trace of indican, a large amount of phenol, and a trace of acetone; both the phenol and acetone being demonstrated after distillation. Microscopical examination entirely negative. Purin bodies, 378 milligrammes.

The purin bodies exclusive of uric acid, which were estimated by Salkowski's process, were many times larger than I had ever found in any case before, the values usually being from twenty to seventy-five milligrammes in twenty-four hours, which corresponds fairly well with the figures given by other recent investigators. This naturally suggested their possible relationship to the anæmia. I was not aware and still do not know of any clinical or experimental evidence bearing upon this question. The possibility that some one or more of the purin groups might have more or less well marked hæmolytic properties, did not appear so very remote. The mere existence of a relatively enormous purinuria back of which must necessarily be a corresponding purinæmia could of course only be suggestive and proved nothing.

In order to throw light upon this question I proceeded to remove the purin bodies from the urine of this case in order to determine their hæmolytic action. The method used, based upon Salkowski's analytic process, was as follows: To 200 c.c. of the mixed twenty-four hour urine I added an excess of Salkowski's alkaline solution of silver nitrate. This causes a precipitation of both the uric acid and the xanthin bodies which were removed by filtration. The precipitate was carefully washed with ammonia water, transferred to a clean beaker containing one hundred c.c. of distilled water, and decomposed with sulphureted hydrogen. In this way all the silver was precipitated as a silver sulphide which was removed by filtration, leaving the uric acid and xanthin bodies in solution in the filtrate. This filtrate was then evaporated to dryness over a water bath, and the residue treated with two and one half per cent. sulphuric acid solution which dissolves all the purin bodies with the exception of the uric acid. In order to free the xanthin bases from this solution it was carefully neutralized with ammonia, and they were again precipitated by an excess of a decinormal solution of silver nitrate and again removed by filtration. The precipitate, after thorough washing, was mixed with one hundred c.c. of distilled water and again decomposed by sulphuretted hydrogen, and the silver sulphide removed by filtration. In order to procure the xanthin bodies in as pure a state as possible they were once more precipitated by decinormal silver nitrate solution, the precipitate again washed, mixed with one hundred c.c. of distilled water, and again decomposed with sulphureted hydrogen. After filtration this left a solution of the xanthin bodies which I considered pure with the exception of sulphureted hydrogen, an excess of which had been used and some of which had been held in solution. This was dissipated by evaporating the entire filtrate to dryness over a water bath leaving the purified xanthin bodies as a deposit.

As had been determined by a previous quantitative estimation in another portion of urine, this residue contained forty milligrammes of xanthin bodies calculated in terms of uric acid because owing to the diverse chemical construction of the xanthin bodies several of which are always present, no constant factor for their calculation is possible. The forty milligrammes of purified xanthin bodies was then dissolved in forty c.c. of 0.7 per cent. salt solution, which is substantially isotonic with normal blood. It was very slightly hypertonic for the blood experimented upon, which was not that of the patient referred to, but normal blood.

The solution of purin bodies thus obtained was about one tenth of one per cent. This was mixed with equal volumes of a suspension of blood in normal saline solution, thus subjecting the erythrocytes to the action of a 0.05 per cent. solution of the purin bodies. In the course of twenty or thirty minutes many of the blood cells had undergone marked changes, and a few fragments of red cells were found here and there, indicating, or rather, as I think, proving a very slow destructive action upon the blood cells of some body or bodies of the purin group, or at least of bodies resembling them by being precipitable by silver nitrate. A control tube without the urinary bodies, but similarly treated in every other respect did not show these changes.

The precise nature of the chemical substance which produced this hæmolytic effect it is impossible at present to say. That it is a specific effect of some chemical agent upon the erythrocytes admits, I think, of little doubt. The osmotic pressure of the fluid holding the erythrocytes in suspension could not be sufficiently changed by the addition of one twentieth of one per cent. of a chemically inactive or neutral body to produce a damaging effect upon the blood cells. As a matter of fact the solution must have been somewhat more diluted than indicated, because of slight unavoidable loss in manipulation.

With regard to the purin bases about eleven have been found in the animal body or its excreta and at

[1] Referred by Dr. G. M. O'Leary, of Huntington, Ind., February 28, 1906.

least six of these, or seven, counting uric acid, have been found in the urine. Whether the hæmolytic effect was produced by some one of these, or possibly by some member of the group not hitherto found in the urine, or by some toxine or other body behaving like them toward silver, is a problem which could only be solved by elaborate and systematic investigation. I endeavored to get some of the purin bodies for experimental work along these lines, but was informed by a leading chemical supply house that they could only be procured by importation, which usually takes two or three months. I decided, therefore, to present these facts, more in the nature of a preliminary note, hoping to be able to pursue the subject further. They seem to me to be of a character to stimulate further investigation along these lines in our search for light in this obscure field of pathology.

It is of course impossible to make any exact comparison between the solution of the purin bodies used in this experimental investigation with the solution found in the blood. So far as the urine is concerned fifty milligrammes in a litre, which is a not unusual finding, would be one two-hundredth of one per cent., or one tenth of the strength of my experimental solution. The quantity in the blood is probably very much less. Urea, for instance, exists in the blood in the proportion of one fiftieth to one twentieth of one per cent., while in the urine it is ordinarily from one to two per cent. These comparisons, probably, show that the solution which I used is many times stronger than that existing in the blood, and the active agent in the hæmolytic process if operative in the blood could only be so in an extremely slow manner. This, of course, is to be expected. The existence in the blood stream of a hæmolytic agent in concentration sufficient to produce a perceptible hæmocytolysis in twenty minutes would in my opinion be rapidly fatal instead of slowly fatal over a long period of time as is the fact in pernicious anæmia.

For the present all that I claim is that in a case of typical pernicious anæmia, there was, first, an extraordinarily large amount of the xanthin bases, or at least of bodies resembling them by being precipitable by silver nitrate; and second, that these bodies removed from the urine of that case, and held in a one twentieth of one per cent. solution made isotonic for blood exerted a positive but slow destructive effect *in vitro* on normal erythrocytes.

In view of these facts I cannot avoid the conclusion that these chemical bodies, whatever their precise nature may be, were the probable agents in the causation of the anæmia in this case.

407 WEST MAIN STREET.

THE ANTRUM OF HIGHMORE AND ITS INFECTIONS.

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Of the accessory sinuses of the nose, the antrum of Highmore is the most frequently diseased. Next in order of frequency come the ethmoid cells, the frontal sinus, and the sphenoid.

It has been said that this is only apparently true, and that disease in the antrum, being more easily detected than in the other annasal spaces, is therefore more often seen in the list of sinus cases requiring treatment. Probably the explanation of the comparative frequency with which this cavity is diseased, lies in the fact that it has two vulnerable sides through which infection may occur, each of these having commonly a wide area of contact with a more or less constantly infected cavity: The inner wall or base of the antrum forms a large part of the lateral wall of the nose, while the floor of the sinus is the portion of the alveolar process which supports the teeth most subject to disease, the molars and bicuspids.

Briefly described, the antrum of Highmore is a roughly pyramidal space occupying the body of the superior maxillary bone. The apex of the sinus extends outwards to the malar bone; the base forms the outer wall of the nasal cavity. Besides this base it has a roof, a floor, an anterior wall, and a posterior wall.

The roof of the antrum is also the floor of the orbital cavity. It is a thin, fragile plate of bone, through the middle of which passes the canal transmitting the infraorbital nerve. The posterior wall is a thick, bony structure which forms the anterior wall of the sphenomaxillary fossa. Through canals in this wall pass the posterior dental nerves; these are branches from the superior maxillary division of the fifth cranial, and are given off before the trunk enters the infraorbital canal. An anterior dental branch is likewise given off from the infraorbital just before this nerve finds exit to the cheek through the foramen of the same name. The dental nerves pass downwards in the anterior and posterior walls of the antrum, and forming an anastamosis, are distributed to the upper teeth, the gums, and, to a slight extent, to the inferior meatus of the nose.

The anterior wall of the antrum is a comparatively thin plate of bone. It extends from the side of the nose to the malar ridge; this last is the prominent, rounded margin extending from the malar bone to the alveolar process, and can always be recognized as the line where the anterior and posterior walls of the sinus meet. The anterior wall extends upward to the orbital margin, and ends below at the alveolar process. The canine fossa ordinarily occupies a large part of this wall of the antrum. It is a shallow groove running upward from the canine tooth to the infraorbital foramen. Surgically opening the antrum through this anterior wall is commonly spoken of as "the canine fossa operation" on the sinus.

The floor of the sinus is formed by the alveolar process of the superior maxilla. Examination of a series of skulls will establish the fact that the teeth rooted in this process, the two incisors, the canine, and the first bicuspid, have practically no proximity to the floor of the antrum. The second bicuspid, and the first two molars, on the other hand, will be found almost constantly in close relation to the floor of the cavity. A large antrum may occupy a wider floor space than this, but for purposes of diagnosis and treatment the fact that the roots of these three teeth are in almost constant relation with the floor of the sinus is all important.

The base or inner wall of the antrum forms the lateral wall of the nasal cavity. It extends from the floor of the nose to the under part of the lateral mass of the ethmoid bone, and is crossed at its

centre, from before backwards, by the inferior turbinated bone. Much of this wall is membranous or thinly osseous tissue, and the sinus has its normal opening here under the middle turbinal body. This opening, seen from the antrum, will be found high up near the roof, a place badly arranged for drainage, since the sinus must be full before the contents find exit. The rounded bony canal transmitting the lachrymal duct serves as a guide in seeking this opening from the antrum side, as this is always easily felt, and the opening is directly behind it. Seen from the nasal side, the normal opening presents at the lower end of the hiatus semilunaris, the narrow, crescentic ditch draining the frontal sinus through the ethmoid bone into the nose. Pus from the anterior ethmoid cells, or frontal sinus, may thus easily trickle into the antrum. This part of the antrum wall is normally concealed by the middle turbinal body which must be removed or pushed

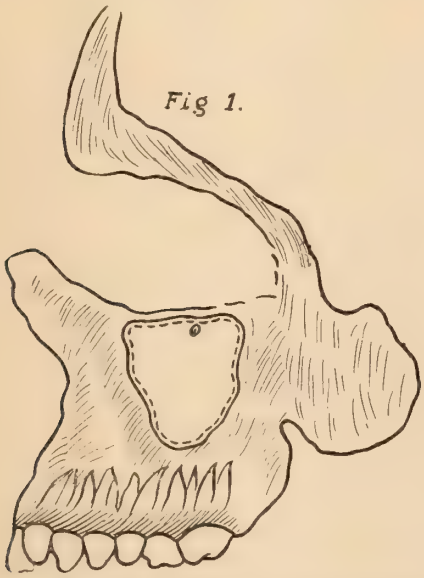

FIG. 1.—Roots of teeth in alveolar process, separated by bony sheath from antrum floor. Normal opening of antrum is indicated above. Orbital cavity seen above antrum.

towards the nasal septum if a view of the hiatus is to be obtained. The anterior border or wall of this ditch is a narrow ledge of the ethmoid bone running downwards and backwards from the lateral mass of cells to join the inferior turbinated bone, and is termed the processus uncinatus of the ethmoid. Posteriorly the hiatus is bounded by the bulla cell of the ethmoid, the first cell of the lateral mass, and all three structures can usually be readily recognized on this wall of the antrum.

Most of the earlier work on diseased conditions of the antrum fell to the lot of the dentists; they were forced to recognize this sinus by the fact that every now and then, when extracting a diseased molar or bicuspid tooth from the upper jaw, the antrum cavity was opened. The ends of the root sockets of these teeth will be found to have one of the following relations to the antrum floor:

(1) A considerable amount, one half inch or more, of bone separates the root tips from the antrum cavity.

(2) A thin sheath of bone separates the antrum from the root tips. The floor is indented and uneven because of the proximity of the roots to the cavity.

(3) The root tips reach the antrum cavity. The mucous membrane lining the sinus lies in contact with the roots.

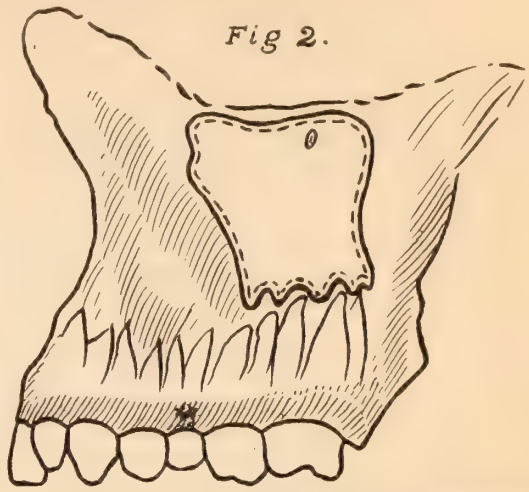

FIG. 2.—Root tips approach the antrum floor. Mucosa lining antrum indicated by dotted line.

It is clear that in such cases as that pictured in Figure 3, the antrum is not only likely to become diseased as the result of dental caries, but that extraction of the affected tooth is certain to open the cavity of the antrum. It will also be observed that development of such a condition as is shown in Figures 1 and 2,—a very common state of affairs,—renders the antrum comparatively immune from danger of dental infection. It is very evident that one who attempts to treat all, or even many, of his antrum cases through the root sockets will have disappointing results.

Ætiology of antrum disease: The annasal spaces are seldom found diseased singly. Practically al-

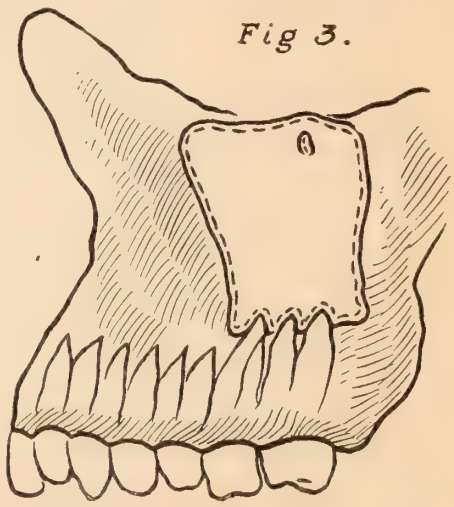

FIG. 3.—Mucosa lining antrum in direct contact with tips of teeth roots.

ways, two or more are affected at the same time, or infection from that first diseased soon reaches the neighboring sinuses. Zuckerkandl never found a single case post mortem in which frontal sinus disease was not accompanied with ethmoidal, and

Fränkel's wide experience also supports this statement. Since the frontal sinus, the anterior ethmoid cells, and the antrum of Highmore, all drain into the nose under the middle turbinal, and of these the antrum is lowest down, it is not unusual to find this sinus, reservoir like, receiving purulent discharge from disease in the cavities higher up.

The causes of disease in the antrum may be grouped as follows:

(1) General. Among these the principal are influenza, pneumonia, syphilis, diphtheria, measles, the fevers, and other infective conditions which are accompanied by catarrhal affections of the respiratory tract.

(2) Local. (a) Unhealthy intranasal conditions, such as hypertrophies, especially of the middle turbinal; irritating spurs and deflections of the sæptum causing frequent attacks of rhinitis—"cold in the head." Atrophic disease of the nasal mucosa, which may however be a sequence of the accessory sinus disease, the real relationship of atrophic rhinitis and sinus disease being uncertain as yet, it should be a routine practice to examine carefully for annasal disease every case seeking treatment for atrophic rhinitis. The association of these conditions will be found exceedingly often). (b) Caries or injuries of the molar or bicuspid teeth in the upper jaw.

Symptoms. If the antrum alone is diseased, the patient may go for a long period without suffering much discomfort. An offensive discharge from the nose, especially on rising in the morning, or after bending over a desk or work bench, may be the first evidence noted by the patient. If such a discharge is unilateral, or markedly more abundant from one side than the other, annasal disease may be strongly suspected, and empyema of the antrum will often be found. Impaired nutrition due to absorption of the toxines and pus in the diseased cavity occurs in some cases. Symptoms due to retention of discharge under pressure, facial neuralgia and headache, are less often seen here than in frontal sinus cases. Cases of this type very often seek relief at a dentist's office because the teeth are believed to be at fault. Nasal obstruction due to swelling and hypertrophy of the mucosa caused by the irritating discharge from the antrum very frequently first draws the patient's attention to the nose.

Diagnosis. An examination of the teeth should be a routine procedure in studying the antrum. As has been noted this is likely to throw valuable light on the case in a certain percentage of antrum affections. If one or more of the three teeth already spoken of is found diseased, a reexamination should be made after the condition of the nose and antrum washing have been attended to.

In examining the nose in a case of suspected antrum disease, careful note should be made of: (a) The presence or absence of pus in the middle meatus, or the occurrence of polypi in this region. (b) The condition of the middle turbinal body and of the wall beneath it. If pus appears under the middle turbinal, and reappears after the part is wiped with a swab of absorbent cotton, it is practically certain evidence of disease in one or more of the three annasal sinuses that drain here. It may then be possible to push a piece of cotton high up under this turbinal, and thus shut off the higher cavities. If pus appears below such a plug it must come from the antrum.

Polypi in this region have very much the same significance as pus, except that they indicate a disease of long standing. Myxomata may spring from any part of the nasal mucosa, it is true, and their causes are often obscure, but it is exceptional to find a polypus in the nose that does not originate from the mucosa covering some part of the ethmoid bone. By far the commonest seat is the middle meatus. These polypi are œdematous blebs of the mucous membrane, and result from irritation of a more or less chronic type. They are probably in all cases associated with disease of the ethmoid cells if not of the other annasal cavities. They may be regarded as the discharge which is locked up in the soft tissues as compared with that which trickles out of the drainage openings of the sinuses. Their value as a diagnostic sign of accessory sinus disease is pathognomic when they occur in numbers, in which condition the nasal wall is spoken of as "polypoid." Ethmoid disease is always present in such a case.

Many rhinologists believe that such polypi will recur unless a piece of the middle turbinal is amputated when they are removed; the explanation given is, that the polypi spring from the turbinal mucosa, and in removing this the base of the polyps is also gotten rid of. This is good practice founded on bad logic. The polypi recur, because the sinus disease which is responsible for their origin causes them to recur unless the improved drainage gained by removal of the obstructing middle turbinal results in improvement of the sinus conditions. Even when the middle turbinal is removed, such polypi will recur if the sinus disease persists.

If no pus is seen when the nose is first inspected, it may often be detected by a second examination after the patient has carried out the following manœuvre: Sitting in a chair, he should be made to bend the head low down between his knees, keeping his mouth closed, his nose held shut between thumb and finger, and his face turned with the suspected antrum upwards; in this position he should make a series of vigorous efforts at inhalation. Since the annasal sinuses are normally emptied of the air in their cavities at each inspiration, and filled again during expiration, strong inbreathing exerts active suction on the sinus contents.

Having learned all that can be determined by inspection, there remain three other methods of examining the antrum: (1) Transillumination; (2) probing the normal opening; and (3) washing out the cavity.

Transillumination of the antrum of Highmore, while not a reliable test, is more helpful here than when applied to any of the other annasal spaces. Experience proves that the following fallacies may occur, and they must be remembered in drawing conclusions as to the conditions present. (a) Transillumination may be equally bright on both sides and yet one antrum may contain pus. In such event the amount of pus is usually small, and the lining membrane little, or not at all, changed. These conditions are sometimes present when the pus is of dental origin, and pus trickling into the antrum from a diseased ethmoid or frontal sinus will give

this result at times. If too strong a light is used this fallacy is more likely to arise. (b) One side may be bright, and the other darker or nonilluminated, and yet no pus be present in the latter antrum. This may be due to unusual thickness of the bony walls of the antrum and small size of the cavity as compared with its fellow, to thickening of the antrum lining as a result of former disease, or to obstruction of the corresponding side of the nose. (c) Both sides may be dark, and yet no disease be present. This is usually due to a weak light, or to thick bones, high palate, and obstructed nasal cavities.

It will be seen that this is not by any means a reliable test, but being easy of application, it may be commended as a routine procedure. If antrum disease is present it practically always betrays itself by transillumination; the weakness of the test lies in the suggestion of disease when none exists.

Probing the antrum: With a soft, copper or silver probe, bent at a right angle half an inch or more from the tip, an effort may be made to find an opening into the antrum by hooking around the lower end of the processus uncinatus in the middle meatus of the nose. In a nose with a full sized middle turbinal, the normal opening (at the lower end of the hiatus semilunaris), cannot be entered with a probe, but in about fifty per cent. of all cases the thin wall in this region contains accessory openings, or gaps in the tissue; sometimes three or four of these are present and they are at times quite large. In such a case the probe may easily be followed by a canula, and through this the cavity syringed, proving definitely the presence or absence of pus. Too much time should not be taken up with efforts to reach the antrum through such an opening, however, as they will frequently prove futile.

An easy and safe way to reach the cavity for washing purposes is by means of puncturing trocar and canula. A straight instrument, such as is used for paracentesis of the abdomen, does very well, but one of the curved, hollow needles, devised for this use in the nose will be found rather easier to introduce.

Because the nasal wall of the antrum under the middle turbinal is thin, and easily reached, it is often named as the place through which to force the trocar. This is a mistake. That part of the antrum wall is very close at all times to the thin lower wall of the orbit, and when, as frequently happens the lower wall of the orbit bulges considerably into the antrum, it would be a very easy thing to force the trocar into the orbital contents—a danger not to be disregarded. A perfectly safe place to puncture is *under the inferior turbinal, at its middle third,* or in other words *about one inch back from the anterior tip of this body.* The antrum wall at this point is completed by a thin, fingernaillike, process of bone, coming down from the body of the inferior turbinated bone, and through this "*antral* process" the trocar or needle passes very easily. In front of, and behind this process the bony wall is hard and thick, therefore if the instrument does not approach the right spot it will not pass without strong pressure. An operator who uses any considerable force in puncturing the antrum is not doing the work properly, and may injure his patient. In three instances I have watched surgeons bore through the hard bone in a mistaken effort to puncture the antrum. In each case the needle reached the soft tissues of the cheek, which were soon widely distended by the water forced in with the syringe intended to wash out the sinus.

The point of the trocar or needle, being correctly introduced under the inferior turbinal body one inch from its anterior tip, should be directed upwards and outwards toward the malar bone. If it does not pierce the wall easily, it is wrongly placed and a careful trial of a point further back or more anterior will then succeed. Clear fluid, normal saline, sterilized water, or boric solution, may then be forced into the antrum through the needle or canula, during which the head should be inclined forward and to the opposite side. If pus is present it will pour into the nose through the normal opening, and may be caught in a basin held for the purpose. Washing the antrum in this way may with advantage be combined with transillumination. If an antrum showing dark before illuminates brightly after washing, it may generally be looked on as a favorable case, inasmuch as probably little change of the mucosa has occurred. In such a case removal of the middle turbinal to improve drainage, with repeated washing of the antrum will often bring about a cure.

Treatment: The careful study made in reaching a correct diagnosis will also determine the plan of treatment best suited to each case. If the case is one of dental origin, the diseased tooth can seldom be preserved with advantage. Usually it will be best to extract the offender at once. The tooth socket may then be enlarged with a curette, and the opening into the sinus made free for drainage at the same time that the source of infection is disposed of. The antrum should then be syringed daily by the patient, a hard rubber or silver tube fitted in the opening, and mounted on a dental plate if desired, keeping the alveolar opening free for the purpose. When of purely dental origin, and in case the lining membrane of the sinus is not badly diseased, an antrum affection will often clear up with pleasing promptness in this way. If not of this type, and especially when associated with frontal sinus or ethmoid disease, such drainage of the antrum is hopeless. I have seen many cases which were quite unimproved three and four years after the drainage was established. This can certainly not be regarded as good surgery.

Antrum disease of nasal origin, or where the nose is responsible for part of the infection, if of mild nature, invites an attempt at cure without resort to a radical operation. This attempt may be made by attacking the unhealthy nasal tissues and cleansing the antrum by regular washing with mild antiseptics, either through an accessory opening in the middle meatus, or by means of puncture through the inferior meatus. The anterior third of the middle turbinal should always be cleanly removed in these cases to facilitate drainage from the sinus. The repeated use of the puncturing needle usually necessary in such treatment does no harm. If after careful trial of this conservative plan of treatment the case does not progress satisfactorily, an attempt to establish freer drainage into the inferior meatus may be made. With an alligator cutting forceps the thin bone through which puncture was made is

torn out as freely as possible, thus enlarging the opening. Through this, after washing the cavity, a gauze drain may be inserted and changed daily. Such an opening tends to close rapidly with granulations; the gauze hinders this process and at the same time absorbs secretions from the antrum.

Should a case not yield to such measures, or in the event that the severity of the disease demands a radical operation at once, the best plan is to approach the sinus through the anterior wall, the canine fossa operation. If the patient is willing to stand some discomfort, or in case of unwillingness to permit the use of a general anæsthetic, this operation can be done very well under cocaine. Under local anæsthesia there is a minimum amount of bleeding, and with a clear field the operator is enabled to work rapidly and with much comfort. Although the patient suffers no severe pain, it is impossible to deaden the dental nerves, and sensitive persons had better have a general anæsthetic. For local anæsthesia a one half per cent. solution of cocaine hydrochlorate, to each cubic centimeter, of which two drops of adrenalin chloride 1 to 1,000 is added, is best used. Of this from one to two c. c. is injected under the soft tissues covering the canine fossa, the needle being inserted at the line where the buccal and alveolar mucous membrane joins.

The lips being well retracted by an assistant, an incision down to the bone is made along this line, from the side of the nose to the malar ridge. With a periosteal elevator the soft tissues are carefully raised from the bone, until the infraorbital nerve is exposed as it emerges from its foramen. The first opening into the sinus is made high up, at a point just inside the malar ridge. Anæsthesia of the sinus lining may to some extent be secured by injecting the cocaine solution into the cavity after a small opening is made, and later swabs of cotton wet with the anæsthestic may be applied to the contents with advantage. All the bony wall below the infraorbital foramen should be carefully removed with chisel or cutting forceps. The diseased interior is then curetted, and as every part of the sinus is easily seen, it is not difficult to insure a clean cavity. While curetting the roof of the antrum care must be taken to avoid injuring the infraorbital nerve which is at all times thinly protected here, and at times lies immediately under the mucous membrane lining the sinus.

Having cleansed the walls of the cavity, two courses are open to the operator. Either to content himself with packing and subsequent dressing through the opening made in the anterior wall, or to close this with sutures, after making a counter opening through the nasal wall. The first is an easier plan, involves less destruction of tissue, and serves quite well as a rule, but the second method seems to be gaining in favor with most operators. The cavity is thus shut off from contamination through the mouth, and is believed to heal more readily as a result of the drainage established into the nose. The counter opening is made in the tissue back of the normal opening. This is always thin, and easily broken through with scissors or cutting forceps. The rounded wall of the lachrymal canal always shows up plainly on the base of the antrum, and serves as a guide in making the counter opening, all the tissue posterior to it may be cut away if desired. This involves more or less destruction of the inferior turbinal body, a matter of little moment. Attempts to make a counter opening under the inferior turbinal are not advisable; such an opening rapidly closes with granulations.

The sinus cannot be repacked through the nasal cavity, but free washing is easily accomplished. The rhinologist must not be too sanguine in his promises of rapid and complete cure, as these cavities are prone to reinfection. Even after apparent cure, every case should be inspected from time to time to guard against the occurrence of any nasal fault likely to bring on antrum infection.

1076 Boston Road.

FACTS FROM CORONERS' CASES.

By Philip Francis O'Hanlon, M. D.,
New York.

Hæmorrhages between the dura mater and the cranial bones are, as a rule, the result of blows, falls, and violent injuries to the head. Many are of considerable size, separating the membrane from the bones, compressing the brain and often causing laceration. These hæmorrhages are very distinct. Sometimes a characteristic hæmorrhage of this kind is absolutely not due to violence, and I wish now to relate a fine type which may be of interest:

A young man was found dead in a furnished room. He was lying in the bed in the usual position. The room, and everything about it was in an orderly condition. The deceased was by occupation a clerk. His habit was mildly alcoholic. The body was sent to the morgue for autopsy as to the cause of death. I made the necropsy in the presence of John Larkin, M. D., adjunct professor of pathology of Columbia University in the city of New York, and found no evidence of violence about the head, beneath the scalp or bones of the cranium. On removal of the calvaria I found an enormous clot of blood covering the entire surface of the dura over the right hemisphere, a strange condition with no evidence of violence. I made a careful examination of the dura, and after considerable search found a small opening of the size of a pin head in the membrane and a slight elevation of a brain substance, pea shaped in size. A section through this part of the brain to its base displayed a large intraventricular hæmorrhage, which had, by laceration of the brain tissue, forced its way upward through the pia and dura and opened on the surface of the dura, covering it as described. A peculiar feature worth noting was that whilst the ventricle was greatly dilated there was positively no blood at all within its cavity, it having all passed upward and out after dilating the ventricle.

We do certainly come across some most interesting conditions as coroner's physicians, and even with the aid of excellent men in our college laboratories do not always derive decisive satisfaction.

A young girl, twenty-one years of age, stenographer by occupation, was taken ill at the home of a friend. She complained of great pain in her head for two days, growing more intense, suffered from projectile vomiting, pains in the muscles of the neck, finally went blind, passed into coma, and was sent to the J. Hood Wright Hospital by a doctor who made to a friend a diagnosis of brain tumor. She remained in the hospital a few

hours, a diagnosis there having been made of meningitis, and there she died.

The autopsy showed the uterus to have been lately emptied and containing a lot of foul smelling secundines. The peritonæum seemed, and in fact was, free from inflammation, as were the glands and all the lymphatics. When the skull cap was removed there was found a very marked purulent meningitis over the entire upper surface of the brain. In the performance of several thousand autopsies this was the first time that I had ever seen such a condition, and the question arose in my mind as to the focus of infection. A bacteriological examination revealed the presence of the Friedländer bacillus in both localities. Is it not rather peculiar that the glands in the region of the uterus did not shown signs of infection?

Another peculiar state of affairs was revealed in the case of a woman who had been found dead in a room of a flat with the door locked, lying on a bed fully dressed, as if after just coming in from the street, with a towel twisted around her neck. The decomposition was well advanced, as she had been dead for three days. The autopsy showed some scratches on the right cheek and a dozen about the neck, all superficial. The blood was fluid throughout the body; no organs showed any ecchymoses, except the tongue, in which there was a slight wound made by the teeth. The membrane of the larynx was congested all the way down, the bloodvessels in the region of the neck were normal, and there was, save the scratches, no evidence of applied violence. The liver was full of little holes, gas cysts, the result of the *Bacillus aerogenes capsulatus*, and there was an abundant formation of gas in the tissues, which was most striking. Surely all the signs of asphyxia by strangulation were present, although decomposition was far advanced, with no history of violent suffocation. A question of legal importance arose to be decided by the legal gentlemen, as to how the deceased came to her death, but surely not by a medical man, considering the absence of complete history, which could possibly have been supplied by the lover of the woman only, who has not yet been found.

The distance a human being may travel after the external carotid is severed is not stated in any of the textbooks, although it may become a matter of importance.

L. S., a Chinaman, twenty-five years old, was killed by a shot in a quarrel in front of No. 25 Pell Street, New York city. The bullet, of .38 calibre, passed through the neck, severing the left external carotid artery, passed through the trachea below the first ring, fractured the right clavicle, and emerged just about the point of insertion of the deltoid. When L. was shot he fell like a log to the pavement, but jumped up and ran a distance of twenty feet to a doorway and then dropped dead.

During a period of less than two months six men have died as a result of the bends or caisson disease. The autopsies, four of which Dr. John H. Larkin, of Columbia University, and myself made, and two of which Dr. Larkin and coroner's physician Timothy Lehane made, showed air embolism. The men were employed in excavating for the tunnel under the East River, at Thirty-fourth Street, in New York city.

A superintendent at the works with whom I spoke told me that he himself had experienced slight attacks of the bends. He said that in coming up the locks into the medical air lock he had terrible pains in his arms and legs, also in his abdomen, but that was as far as the trouble in his case went. He is a tall, lean man of rather phlegmatic temperament. He said the men work in cylinders into which the compressed air is driven. Whilst these operations are maintained in accord with the physical laws, the condition under which the men are working is unnatural, and consequently with no small risk to the workmen. Persons employed are told to remain a few minutes in each lock going down and coming up, and it is the disregard of this instruction that results in death.

To those who are employed for the first time "compression" is often very disagreeable. Because of the rise of pressure inside of the air lock, the ear drum is violently forced in, and as a result dizziness, earache, and headache ensue. Some men can by swallowing air prevent this. By diverting some of the air up through the Eustachian tube the middle ear receives the air and acting as a cushion stops the very great depression of the tympanic membrane. Often it happens that the drum of the ear has ruptured. It is said that during "compression" the blood continues taking up the gases in the air until the tension becomes equal to that in the compressed air. The blood seems to take care of a certain amount of air, as it will also do of fat, and that it is only when the equilibrium is upset that bad results ensue. The men work for three or four hours without much trouble or inconvenience, and do not seem to be as tired in this atmosphere as they are in the open air.

At the end of the shift the men enter the air lock, closing the door. The pressure in the lock is the same for a moment as in the caisson, but by turning a valve air slowly escapes into the external atmosphere, which action results in the fall of pressure, the workers undergo "decompression," and it is at this time that accidents often happen, as the air in the lock is very cool, and when the door is opened it appears as if the men are in a fog. The amount of air per man per hour should be from 4,000 to 8,000 cubic feet. In all the autopsies made on the bodies of men who have died of caisson disease the blood is frothy, air bubbles may be seen in almost all the veins The heart, the brain, the spinal cord, and the vena cava in one patient were markedly distended with air. The lungs show marked congestion, as do also the kidneys.

It is said oxygen breathed under increased high pressure produces a toxæmia, and that, as the hæmoglobin of the blood cannot take up carbon dioxide and eliminate it the oxygen imprisons the nitrogen, and that it is this gas which escapes into the veins. The air bubbles may be seen on the inside of the capillary vessels, bubbles after bubbles appear, and fill the vessel, thus causing the circulation to cease, and to produce air emboli in the vessels. The whole action is a mechanical cause of death.

In two cases coming under my observation there was a marked general emphysema beneath the skin. A microscopical examination of the organs taken from the men has been made by Dr. John H. Larkin, the result of which he assures me will be read before the Pathological Society.

There is one thing certain and that is that the health department ought to create an ordinance setting forth the proper decompression period for men doing this work, and that in two atmospheres

of four hours' shift the period of depression should be at least one hour. That a most careful rigid examination should be made, that no alcoholic should be allowed to go to work, nor any one with old pleuritic adhesions, as was done with a lad eighteen years old, whose body was examined at the New York Hospital. Negroes are seldom victims of the bends, so I was informed by the superintendent, and it seems the employment of this race would be beneficial.

In all cases of illuminating gas poisoning, where the patient is in coma from five to twenty-one days, there is softening of the lenticular nucleus. The case of one patient whom I saw at one of the larger hospitals, having been diagnosticated as alcoholism, showed these lesions.

121 WEST NINETY-FIFTH STREET.

Our Readers' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LVI.—How do you treat sciatica? (Closed November 15, 1906.)

LVII.—How do you use mercury in syphilis? (Answers due not later than December 15, 1906.)

LVIII.—How do you treat acute synovitis? (Answers due not later than January 15, 1907.)

Whoever answers one of these questions in the manner most satisfactory to the editors and their advisors will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short; if practicable, no one answer to contain more than six hundred words.*

All persons will be entitled to compete under the regulations laid down by the postal authorities. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL.

The prize of $25 for the best essay submitted in answer to question LV has been awarded to Dr. Leigh F. Watson, of New York, whose article appears below.

PRIZE QUESTION NO. LV.

THE TREATMENT OF ACUTE ARTICULAR RHEUMATISM.

BY LEIGH F. WATSON, M. D.,
New York.

The patient who suffers from acute articular rheumatism should have a quiet room of equable temperature, free from draughts. Chilling of the body surface is harmful; he should therefore be clothed entirely in flannels and put to bed. Do not allow him to make any muscular exertion whatever, not even to feed himself or move about in bed. As the object of the rest is to minimize the work of the heart, friends and all forms of excitement must be excluded from the patient's room. The affected joints should be wrapped in wadding and put at absolute rest, preferably by the use of a splint. For acute symptoms and to induce quiet the first two days, opiates are to be used. A lead and opium dressing is often useful.

Do not allow too much water, as it increases the work of the heart, and prohibit all forms of stimulants unless absolutely indicated. The diet should be light and easy of digestion, such as milk, buttermilk, broths, bouillon, egg albumen, chicken jelly. Small feedings at frequent intervals are to be preferred.

The treatment is to be commenced by administering a good purgative and securing free catharsis. Order sodium salicylate 20 to 30 grains, every four hours, until pain ceases or symptoms appear. After the acute symptoms have subsided continue the salicylates with diminishing dosage at increasing intervals, being guided by the tolerance of the patient and the severity of the attack. When the salicylates are ineffectual combine with an equal amount of potassium bicarbonate to alkalinize the secretions. The salicylates prevent the multiplication of the specific organisms in the body. Give sodium iodide for absorption of the fluid around the heart. When sodium salicylate cannot be borne or is unsatisfactory use strontium salicylate 7½ to 15 grains, or aspirin (acetylsalicylic acid) 5 to 10 grains combined with caffeine for depression. Sometimes salol, salicin, or oil of gaultheria proves beneficial in obstinate cases.

After the acute symptoms have subsided use unguentum ichthyolei, twenty-five to fifty per cent., over the affected joints combined with a pressure bandage to hasten absorption.

Two or three small blisters about 1 inch in diameter used in the left axilla or over the nipple will stimulate the heart reflexly through the intercostal nerves. Larger blisters above and below the affected joints are useful to relieve the pain. Hot air at 200 to 250° F. is useful, allowing fifteen to twenty minutes for each application, the joint to be well wrapped in bandages to absorb the sweat and prevent blistering.

The salicylates must be continued two to three weeks, and the rest in bed ten to fourteen days after all symptoms have disappeared, so as to avoid relapse and secure a normal heart.

LYING-IN HOSPITAL, SEVENTEENTH STREET AND SECOND AVENUE.

Dr. Maximilian Schulman, of New York, writes:

The treatment of acute articular rheumatism is: 1, Prophylactic; 2, that of the attack in its active stage; 3, that during convalescence.

1. Prophylactic treatment is applicable to patients who have had previous attacks and especially to children whose antecedents were rheumatic or who have themselves already had rheumatism. Prophylaxis requires that patients be clad in woolen underwear and stockings all year around; that they avoid wettings and dampness; that if possible they have indoor occupations; and that they avoid use of alcohol and excessive amounts of carbohydrates in their diet. When the means permit, it is desirable for such patients to reside in a warm, dry climate, particularly during the winter and spring months. Prophylaxis is of greater importance to children than to adults,

because of the greater frequency of heart complications in the former.

2. In the active stage of an attack of acute articular rheumatism, the measure of greatest importance is absolute rest. The patient should be put to bed, and kept there as long as there is any elevation of temperature. He should wear a flannel gown which fits loosely and is easily removed, for the local applications to the joints and the profuse acid sweats necessitate a frequent change of clothing, which should be accomplished with the least possible disturbance of the patient. It is also well for the patient to rest between light woolen blankets rather than cotton sheets. The affected joints should be kept at rest by the application of well padded splints, held in place by light bandages. The diet should consist of milk, plain or diluted with Vichy water. If milk is not well borne, broth may be substituted. Thirst should be satisfied by allowing plenty of Vichy water or lemonade, the latter being made with little sugar.

The medicinal treatment is local and constitutional. The best local application is methyl salicylate, or the natural oil of wintergreen. The former is just as efficient, while it has the advantage of being cheaper. When the joints are very painful, use the methyl salicylate diluted with an equal part of olive oil. This should be heated before using, and poured on to cotton batting or flannel (not absorbent cotton), and wrapped around the joint or joints; and over this goes the splint. The application should be renewed twice a day, remaining in place all the interval. When the swelling and pain become less intense, so that the joints will tolerate light rubbing, substitute for the fifty per cent. preparation, undiluted methyl salicylate, also used twice daily, but now rubbed in, instead of being applied on flannel, etc. This local treatment should be kept up as long as there is any swelling and pain in the joints.

The internal treatment in the active stage also consists of wintergreen oil or its derivatives. The best preparation to use is sodium salicylate, in full doses. An adult requires 20 grains, four times a day. This may be given in capsules, powders, or the following mxture:

℞ Sod. salicylatis,.....gr. xx;
Mist. rhei et sodæ.....q. s. ad ℥ii.
M. f. Sig. This, one dose, to be repeated four times a day.

If the stomach rebels against sodium salicylate, 20 minims of the oil of wintergreen, in milk, may be used four times a day, or the sodium salicylate made from natural oil of wintergreen, or best of all, 10 grain capsules of aspirin (acetylsalicylic acid), three or four times a day. For children use the same preparations in proportional doses. Should the toxic effects of salicylic acid manifest themselves, the use of the drug should be suspended rather than to reduce dosage, for small doses are ineffective.

In addition to the salicylates, alkalies are indicated, in doses sufficiently large to render the concentrated highly acid urine slightly alkaline. For this purpose 30 grain doses may be used, three times a day, of sodium bicarbonate, potassium bicarbonate, potassium citrate, etc., or the following combination:

℞ Potas. et sod. tart,.....ʒi;
Sod. bicarbonatis, } .....āā ʒss;
Potas. acetatis, }
Aq. destil.,.....q. s. ad ℥ss.
M. f. Mist. Sig. This, one dose, to be given t. i. d.

In some cases the pain is so severe that patients are very restless and cannot sleep nights. These patients require, in addition, morphine, gr. ⅛, every four hours, or sometimes only one dose—gr. ⅛ or gr. ¼ at night. Sometimes it must be given hypodermatically. Again, some patients are best to be quieted by antipyrine, acetanilide, or phenacetine (acetphenetidine).

3. During convalescence and for some weeks after, tonic treatment is indicated. Adults should get iron in some form, and often 10 grain doses of potassium iodide after meals. Children should get syrup of iodide of iron, in doses of 5 to 20 minims, according to age, and, except in the summer, cod liver oil.

In all cases, but especially in children, the heart must be carefully watched, an examination being made daily. The observance of absolute rest is the most important factor in the prevention of cardiac complications, while the combined use of salicylates and alkaline treatment are further preventive measures.

The consideration of the treatment of cardiac complications is irrelevant here.

Dr. John B. Talmage, of New York, says:

The practical treatment of acute articular rheumatism resolves itself into three parts: Symptomatic, constitutional, prophylactic.

Taking the treatment in this order, the first thing for the patient is rest in bed. The affected joint should be well sprinkled with the pure oleum gaultheriæ, and wrapped in a layer of nonabsorbent cotton. Over this a piece of oiled silk is placed; the whole to be held in place by a snug bandage. The limb should be placed in an easy and comfortable position. The pain will disappear in from two to four hours. The dressing should be applied every night and morning, as besides being analgetic it helps in keeping the joint quiet. After three days of this treatment, the joint should receive thorough massage and passive motion three times a day, and in the intervals be covered with the following ointment and wrapped in flannel:

℞ Ichthyol, }
Lanolin, } .....āā ʒii;
Oil of gaultheria,.....ʒi.
M.

A general alcohol sponge, of ninety-five per cent. alcohol and tepid water equal parts, should be given, three times a day, to relieve nervous irritation, reduce rise of temperature, and remove the odoriferous sweat peculiar to the disease.

Constitutional Treatment.—Salicylic acid and its salts are considered specifics. But to be of advantage the salicylic acid should be in a nascent condition, as it works best, when in this state; besides this, the "already prepared" preparations on the chemists' shelves are old, discolored, and contain impurities, viz., orthocreosotic,

metacreosotic, and paracreosotic acids, which are irritants to the stomach, cortical cells of the cerebrum, and heart. Irritation of the last named organ leads to the dreaded complication, endocarditis. And it is the presence of these irritants in the prescriptions as compounded by most chemists which is a great factor in the prevalence of heart complications. Therefore, the following preparation should be used:

℞ Ac. salicylici, ... grs.xl;
Sod. bicarb., ... ʒiss;
Glycerini, ... ʒiii;
Aquæ gaultheriæ, ... q. s. ℥ii.
M. Allow to effervesce and filter.
Sig. One teaspoonfull every three hours.

Have this prescription made up fresh every other day. Some people, however, are so susceptible to salicylic acid as to require the accompanying sedative:

℞ Ammon. bromidi, ... grs. v;
Pulv. Doveri, ... grs. iii.
Ft. Pulv. I.,
Sig. One powder every three hours.

If the patient's stomach is very rebellious to any form of salicylate, it will often be found to be able to retain the natural oleum gaultheriæ. This ought to be made from the leaves of the *Gaultheria procumbens;* but as this is for the most part unobtainable, the next best is the so called natural oleum gaultheriæ, made from the sweet birch (*Betula lenta*). This oil should be given in capsules, which can be filled at the bedside with a medicine dropper, and thus the dose be increased or diminished as desired:

℞ Ol. gaultheriæ, ... ♏ iii.
Ft. Cap. I.
Sig. One capsule every three hours.

In case of children the oil can be dropped on a lump of sugar and given as wintergreen candy.

The patient should also receive eliminative treatment. Calomel tablets, 0.1 grain, every fifteen minutes, for ten doses, and followed two hours after the last tablet by a glass of magnesium citrate. Every morning the patient should receive a powder:

℞ Sod. phosphate, ... ʒi;
Sod. benzoate, ... grs. v;
Sod. bicarbonate, ... grs. x.
Ft. Pulv. I.
Sig. One powder every morning in a glass of hot water.

This will open the bowels, keep the liver active, increase the activity of the kidneys, render the urine less acid, and eliminate the toxines.

The diet should be entirely of milk. With every half glass of milk there should be a drachm of lime water and a half glass of Vichy. After each feeding the patient should receive a thorough cleansing of the mouth with a solution of sodium bicarbonate, one half teaspoonful to a glass of water. This prevents the patients tasting the milk after ingestion, and overcomes the objection of many patients to a milk diet. The daily toilet of the mouth should be rigidly enforced. When the temperature has subsided the diet may be increased by degrees, with eggs, fish, "above ground" vegetables, chicken, and veal in the order named.

The anæmia, subsequent to an attack of this disease, must receive especial attention. Tincture ferri chlor. m.v, after meals, should be taken in water with the aid of a glass syphon. Fowler's solution, m.iii, three times a day, should also be given, together with a course of "above ground" vegetables.

Complications should be treated as they arise: The initial tonsillitis requires, beside the constitutional treatment, a throat spray; hyperpyrexia and delirium should receive alcohol, sponges, ice cap to the head, and sedatives. Iritis requires the instillation of atropine, hot applications to the eye an hour on and an hour off, exclusion of light, and complete rest. Endocarditis with or without acute dilatation and insufficiency requires absolute rest, to steady, slow, and regulate the heart action, tinctura digitalis. The dose is, of course, regulated by symptoms and physical signs. If a nurse is on the case I prefer the hypodermatic administration of the drug in the beginning. Pericarditis requires an ice bag over the præcordial area, rest, constitutional treatment, and tinctura digitalis when the heart evinces weakening action.

Prophylaxis against future attacks: Bodily resistance must be kept up by personal hygiene. Exposure to cold and moisture and dampness is to be avoided by proper woolen clothing, dry apparel, and, if necessary, change of climate. The emunctories of the system must be kept in perfect condition. The stomach should be carefully guarded. A so called bilious attack is often the forerunner of an acute attack of rheumatism. Sweets, pies, pastries, and confections must be avoided; also "under ground" vegetables, red meats, alcohol, etc., and the patient must be made to understand that in his hands and not in his physician's is placed the responsibility of warding off future attacks.

(*To be continued.*)

Therapeutical Notes.

Sodium Sulphate for Vomiting of Infants.—In the case of an infant suffering with uncontrollable vomiting while nursing, Variot (*Le Progrès médical*, October 20, 1906) substituted sterilized milk and added sodium sulphate, which stopped the vomiting. Variot distinguishes two kinds of obstinate vomiting in children. One form is merely regurgitation attributable to irritability of the stomach from any cause whatever. These cases are usually subdued by giving the child sodium citrate just before nursing. The other form appears to be connected with the milk, and is only checked by changing the nurse, or giving sterilized milk with a little sodium sulphate. In some of these cases the mother's milk seems to act like a toxic agent.

Carbon Disulphide for the Destruction of Wasps.—To destroy wasps, cyanide is the usual and the effective chemical to place at the mouth of their nests. But there are obvious objections to laying it about, and there is also the minor one that it renders the larvæ poisonous and conse-

quently unfit for use as fishing bait, for which in some parts they are much sought after. Carbon disulphide is fully as effective. A good method of employing it, especially when the nest is not in a vertical line with the opening, is to cover the mouth of the nest with a big handful of cotton wool, and heavily saturate that with the liquid, says the *Chemist and Druggist*. The vapor descends and permeates all the crevices. It is hardly necessary to add that the destroyer must steal upon his victims in the night season.—*American Druggist and Pharmaceutical Record*, October 29, 1906.

Thyreoid Implantations for Myxœdema.—A patient, who at the age of seventeen years, had survived a total removal of her thyreoid gland, but after the operation the symptoms of myxœdema, for which it had been performed, had become more accentuated. For several years she was treated for this condition by eating fresh thyreoid gland of the sheep, and her health became good, while taking from 1 to 1.50 gramme daily. Less than this quantity caused the reappearance of œdema and nervous symptoms. Becoming tired of the treatment she demanded a substitute. Charrin and Christiani, who reported the case to the Académie des sciences (*Le Bulletin médical*, July 11, 1906), then inserted portions of a sheep's thyreoid gland in a series of grafts under her skin on two occasions three and a half months apart. The thyreoid feeding was gradually diminished until it was reduced to a few drops a day of a liquid extract. About six months after the second transplantation the patient was delivered at term of a well developed healthy infant. It was observed that during the latter months of her pregnancy the grafts became enlarged, evidently from congestion, being affected like the normal thyreoid by the pregnancy. The successful termination of the pregnancy was ascribed in great part to the thyreoid treatment, and especially the implantation of the functionally active thyreoid under the skin. Professor Launelongue, in a case of a myxœdematous infant, had previously implanted the first fragment of a sheep's thyreoid in the human subject. The child's condition appeared improved, and the development of the disease became a little less active.

The Treatment of Primary Syphilis of the Nose and Nasopharynx.—Mackenzie, in the *American Journal of Dermatology* for October, says that the treatment is general and local. The former should, of course, be resorted to without delay, and the seat of the ulcer and its surroundings should be kept scrupulously clean by means of suitable douches, nebulæ, powders, and other modes of cleansing and disinfection. Whether there be any inherent value or virtue in direct medication of the ulcer itself or not, in the interest of its possible favorable modification by this means, it can do no harm to resort to this method of procedure. Among the many topical applications to the chancre may be mentioned silver nitrate (either in solution or solid stick) or one of its various substitutes, iodoform or its equivalents, calomel in powder, and, finally various ointments (e. g., unguentum zinci oxidi) and acids (chromic, glacialacetic and monochloracetic). In using acids within the nasal passages, care should be taken to strictly limit their area of application, lest destruction of the cartilage and consequent perforation should follow. In view of the possibility of such an occurrence nitric acid should never be employed, as its action is often exceedingly difficult to control. While glacialacetic and monochloracetic acid are both perfectly free from danger, perhaps the safest and most satisfactory is chromic, for, as Squibb originally pointed out, when a molecule of chromic acid comes in contact with a molecule of organic matter it is at once converted into an insoluble, innocuous oxide of chromium. Monochloracetic acid derives its main value from the fact observed by Andrew H. Smith, that the eschar, after its use remains attached until cicatrization has taken place beneath it, a property which safeguards against possible adhesion in contracted cavities, such as the nasal meatuses.

Unna on the Treatment of Leprosy.—At the International Medical Congress recently held at Lisbon, Professor Unna, of Hamburg, read a communication on the Pathology and Therapeutics of Leprosy. With regard to the treatment, he observed that it should not be the same for all cases, it should be varied according to the conditions existing in each individual case, and even it may require modification at different periods in the same patient. The difficulties in the way of successful treatment are due to different causes. In the front rank are the hypertrophy and the torpid state of the tissues, which prevent the medicaments deposited upon the surface of the skin in the leprous areas from exercising their action upon the bacilli, which are buried in the deeper parts. To this is to be added the obstruction of the lymph channels by the lepra bacilli, which also interfere with the action of the same remedies at a distance. In order to overcome these difficulties, he recommends local heat, compression, and massage. These, either alone or combined, afford an excellent means of disengaging the lepra bacilli from the layers of tissue which surround them. The local heat may be best applied by "baths of ink" (solution of sulphate of iron and tannin) at 30° (86° F.); these baths are especially useful in lepra attended by extensive paræsthesia. Heat and compression may be combined by ironing the effected areas with a hot flat iron, the skin being protected by three or four layers of flannel. This application should be made once every day for a long period of time. Massage may be used with prudence and local compression may be made with the roller bandage and compresses. When by these means the bacilli have been dislodged, they may be attacked by bactericidal agents, such as pyrogallol, resorcin, phenol, chrysarobin sulphur, and ichthyol. For internal remedies, injections of ichthyol and of camphor are worthy of mention. The agent which best merits the title of the specific for lepra is chaulmoogra oil, which can be taken internally, without danger to the stomach, in the form of pills made with hard soap. It can also be administered in enemata, but should not be given hypodermically on account of the pain which is caused by its injection under the skin.—*La Clinique*, May 18, 1906.

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A FURTHER CONTRIBUTION TO THE APHASIA PROBLEM.

In our issue for October 6th we spoke of a noteworthy contribution by Pierre Marie to the subject of aphasia. It may be recalled that in this preliminary notice—the detailed observations which served for its foundation not yet being published—Marie made a radical inroad into our most cherished notions regarding this affection. Wernicke's sensory aphasia was entirely eliminated, motor aphasia was reduced to an intelligence defect plus anarthria, and it was denied that the third frontal convolution was a cortical centre of language. In a still more recent publication (*Semaine médicale*, October 17th), Marie returns to the subject and makes further remarkable reductions. He maintains with renewed emphasis and striking example that the aphasia explanations are premature hypotheses lacking true anatomical foundation, and he breaks a lance, not this time with a master who cannot defend his ideas, but with a living compatriot.

Marie denies the existence of any centre for word images, which had been erected more or less by Déjerine, and says that word blindness is a pure myth. He has never seen a case, and doubts if any one else has. He says there are good reasons why such a belief must be untenable. Pure word deafness is characterized by Déjerine as follows: The word deafness is total and absolutely comparable to that which one observes in ordinary sensory aphasia. The patient cannot understand anything said to him in a loud voice, and cannot repeat words or write to dictation. Spontaneous speech is perfect, reading aloud is normal, and mental reading is intact and remains the sole means of entering into communication with the patient. Spontaneous writing and copying present no alterations. Intelligence is intact. According to Déjerine, the cause of this form of subcortical aphasia is a bilateral lesion of the temporal lobes.

Marie denies absolutely the possibility of the clinical picture of pure word deafness with conservation of intelligence, of the power of reading and writing, and of an intact auditory apparatus, and introduces a severe critique of the published cases, particularly those of Déjerine and Serieux. Pure word blindness also suffers from Marie's critique. He says that while it is clinically well shown that there may be a difficulty in reading, perhaps not absolutely isolated, yet at least fairly well circumscribed, at the same time the facts are capable of an entirely different explanation from that which has heretofore been considered orthodox. Déjerine has been an earnest supporter of the pure word blindness type of aphasia, and has located the lesion in the angular gyrus, in which portion of the brain, according to Marie, he would postulate a special centre for the images of written words. Such a centre Marie believes has no existence. This is rendered probable, he thinks, on evolutionary grounds alone, for the time that has elapsed since written signs have served as word images has been too short to evolve a special centre for the recognition of such highly specialized images. How long it does take for the brain to evolve a specialized function no one knows, but it seems highly improbable that the few thousand years during which written symbols have been mediums of communication are far too short a time to permit of the growth of a centre in the sense required by the subcortical aphasia hypothesis. A centre for language is readily conceded, but not for writing and reading.

As for the explanation of the phenomena of speech modifications which are well recognized, Marie asserts that one has to do with a pure alexia, or one that is "nearly pure," and he says that the lesion is one that is induced not by an involvement of the Sylvian territory, as is the case with the aphasias of Wernicke and Broca, but by a hæmorrhage involving the posterior cerebral artery. This lesion must interfere not only with the fibres coming from the visual areas, but also with the white substance of the zone of language or the fibres coming from it. A lesion on the inferior surface of the brain involving the lingual

and fusiform lobes would produce this result. Marie further discusses the question of the pure subcortical motor aphasia of Lichtheim, but we leave this aspect of the subject for a future time when we may be able to present some of the more recent criticisms of Marie's views.

"NORMAL," OR "RESIDUAL," TYPHOID FEVER.

Apparently the new filtration plant provided for the city of Washington, which has now been in operation for rather more than a year, has effected no material reduction of the prevalence of typhoid fever in the national capital. Indeed, the disease seems to have prevailed somewhat in excess of its incidence during the year preceding the completion of the filter. This disappointing state of things has furnished the carpers with a pretext of which they have not been slow to take advantage, proclaiming in effect that filtration of water supplies is but a useless source of expense. It has seemed necessary, therefore, to investigate the facts, and the *Engineering News* has undertaken the task in a preliminary way, at the same time informing its readers concerning the pending investigation at the hands of the Public Health and Marine Hospital Service. A long editorial article on the subject appears in that journal for November 8th, together with the report of its special commissioner, Mr. Theodore Horton, consulting engineer of the New York State Department of Health, and comments upon Mr. Horton's report and its subject by Professor William V. Sedgwick, of the Massachusetts Institute of Technology.

Both Mr. Horton and Professor Sedgwick agree that the Washington filtration plant is unexcelled by any other in existence, and that it is operated skilfully. To what, then, are we to attribute the continued prevalence of typhoid fever, which had been gradually falling for three or four years before the completion of the filter? Sedimentation had been more successfully employed than before, says Mr. Horton, and that, he is doubtless quite right in implying, reduced the typhoid morbidity to a point lower than it would have reached had no new measures been adopted—a point below which filtration could hardly be expected to reduce it materially. At least that is what he seems to imply, though he lays the chief stress on the rather uncommon continuance in Washington of other sources of infection than the drinking water, causing what he denominates the "normal" typhoid fever rate. Professor Sedgwick, who entirely agrees with Mr. Horton, revives his own use of the term "residual" to include cases that are not directly water borne. It is not easy to see why the causes of such cases should be more operative in Washington than in our other towns of about the same size, though it must be recognized that the continued existence of box privies to the number of twelve thousand or more is fraught with a menace that hardly hangs over any other similar community. It is to be hoped that the investigation instituted by the Public Health and Marine Hospital Service will soon reach completion.

THE RELATION OF GLOSSINA PALPALIS TO TRYPANOSOMA GAMBIENSE.

Trypanosoma Lewisi, which is so common in rats, appears not to be pathogenic, and Minchin, Gray, and Tulloch (*Proceedings of the Royal Society*, lxxviii), in studying the relation of *Glossina palpalis* to the transmission of *Trypanosoma gambiense*, discovered two trypanosomes in the alimentary canals of the flies, *Trypanosoma Grayi* and *Trypanosoma Tullochii*, which also were not pathogenic. Their work was undertaken to determine the exact mode of infection by the tsetse fly, and from their experiments they conclude that the trypanosomes are transmitted from animal to animal by contamination of the proboscis of the fly. It was shown that freshly caught specimens of *Glossina palpalis* were capable of infecting animals with *Trypanosoma gambiense*, but the number of bites necessary to produce the infection are very variable indeed. The smallest number of flies with which infection was induced was 134. In the digestive tract of the fly *Trypanosoma gambiense* multiplies during the first twenty-four hours, and male and female forms may be found. During the next two days the organism gradually disappears, so that by the end of the fourth day it is very rare to find a single trypanosome. The disappearance of the parasite is considered to be due to its actual death and to digestion. There is no evidence that it passes into another organ of the fly or that it becomes so minute by rapid division as to escape detection. *Trypanosoma Grayi* and *Trypanosoma Tullochii* were frequently found in the midgut of freshly captured flies in the Victoria Nyanza region. The former was found in 1.47 per cent. and the latter in 0.17 per cent. of 3,000 flies examined.

The authors conclude that these two trypanosomes are not developmental stages of *Trypanosoma gambiense* and, further, that there is no connection between these fresh fly trypanosomes and sleeping sickness. In an uninhabited island, for example, in the Victoria Nyanza region, seven per cent. of the flies caught contained these or-

ganisms; while at Entebbe, a place of numerous population and where sleeping sickness is common, only 1.7 per cent. of the flies contained similar parasites. The authors, however, have not so far been able to establish the vertebrate host of these parasites.

The method of distinguishing between *Trypanosoma gambiense* and other trypanosomes by morphological characters and by measurements is not of the easiest. An additional mode of diagnosticating between these protozoa has been suggested by Minchin, Gray, and Tulloch. A large number of freshly caught flies were fed on a native goat. On dissection of 500 of these flies, no trypanosomes were found. On the other hand, other flies caught at the same time, in the same district, and fed on other experimental animals, contained the usual percentage of trypanosomes. When a drop of this goat's serum was added to a preparation of *Trypanosoma gambiense* from an infected rat, and a preparation of *Trypanosoma Grayi* teased from the intestine of one of the flies, the former organism remained active while the latter rapidly became immobile and died off.

RENAL TROUBLES IN ECZEMATOUS CHILDREN.

The old tradition that it is sometimes dangerous to cure a disease of the skin, since then the morbid process may "strike in," is not likely to be revived. Indeed, several recent observers have seen a source of internal trouble in the persistence of open cutaneous lesions. Among them are Guinon and Pater, who contribute an article on the subject to the November number of the *Revue mensuelle des maladies de l'enfance.* These gentlemen report several cases, some of which were observed by themselves, in which, as they think, nephritis in young children took its origin in bacterial infection through an open eczematous or impetiginous surface or through fissures or scratches incident to an acute affection of the skin.

In the cases cited the skin trouble did not generally affect an extensive surface, being for the most part limited to the scalp, so that there can have been no analogy to the occurrence of visceral disease as the result of burns implicating a great extent of skin. The authors intimate that the debility which often accompanies eczematous affections in young children works such a reduction of the natural protective forces that infection finds a ready lodgment. Fortunately the nephritis is not usually severe or very persistent, though one of the authors' cases proved fatal. It is of importance, they think, to cure the skin trouble, for otherwise repeated infections may take place. But only mild applications should be used, since there is reason to suspect that in one of the cases reported injury may have resulted from the employment of Alibour's solution (of copper sulphate and zinc sulphate) insufficiently diluted or kept applied for too long a time.

The urine of an eczematous child should be carefully watched, and when albumin is found in it, or when it is turbid or sanguinolent, complete rest must be enforced and a strict milk diet imposed. The condition of the skin will often interfere with the use of warm baths, but much may be gained by restoring the digestion to its normal state.

FANATICISM AND THE SENSE OF HUMOR.

A recent news item from England announces that the International Antivivisection Council has erected at Battersea an expensive granite drinking fountain, which is said to have cost considerably more than £100, to the memory of a little brown terrier. A statue of the dog surmounts the fountain, which bears the following inscription: "Died February, 1903, after having endured vivisection extending over more than two months and having been handed over from one vivisectionist to another until death came to his release." It is needless to say that the people who erected this could not have the slightest sense of humor. We understand, however, from recent London papers that, owing to threats, real or supposed, on the part of medical students that they would destroy the memorial, it was for a time at least, at the request of the members of the International Antivivisection Council, guarded by a special police detail. If these threats have any real foundation, the younger generation of medical men in England have not much more sense of humor than their antivivisection opponents. A monument of this kind is the best possible evidence to all sensible people of the lack of common sense and of the true proportions of things that must exist in the minds of antivivisectors. To destroy such a monument or deface it in any way would surely be to ruin the beneficent effect that it will inevitably have if it is allowed to remain. Besides, any damage to the monument will only seem like persecution, and persecution always increases the rancor of fanaticism in any line of thought and usually adds to the number of adherents of a cause, because, in the English speaking world especially, there is a feeling of sympathy sure to be aroused for those who may be the subjects of persecution in any way.

FORMALDEHYDE AS A DISINFECTANT OF ROOMS.

Passed Assistant Surgeon Thomas B. McClintic, of the Public Health and Marine Hospital Service, has made a very careful experimental study of the value of formaldehyde as a germicide in closed rooms, as a sick room would be fumigated after the death or recovery of a patient with infectious disease, and with special reference to the disinfection of railway sleeping cars. His account of his researches has been published in the form of *Bulletin No. 27* of the Hygienic Laboratory of the service. Dr. McClintic finds that formaldehyde is a trustworthy disinfectant of smooth surfaces, but decidedly deficient in penetrating power. Its germicidal activity is much enhanced by a high temperature and especially by an atmospheric humidity of not less than sixty-five per cent. In air that is dry and cool it is almost worthless. In the case of sleeping cars an exposure of about two hours suffices for the full operation of the agent, but in dwellings, where a room can be more completely sealed, a somewhat longer exposure may be of advantage. A very convenient and efficient method of setting the gas free is that of pouring a forty per cent. solution of it upon crystals of potassium permanganate, in the proportion of a hundred cubic centimetres of the solution to fifty grammes of the crystals. The evolution of the gas, which begins within a few seconds, is energetic.

THE COMMERCIAL VALUE OF A NOSE.

The nose is so prominent a feature that its disfigurement is universally recognized as something deplorable. It is generally realized, too, that an intact nose, even if it does not happen to be a handsome one, is an asset, and that whoever disfigures a person's nose, either by design or by negligence, is liable to a suit for damages. Such suits are not very uncommon, and it is gratifying to believe that juries are often disposed to show enlightened discrimination in their valuation of noses. Other things being equal, a woman stands a better chance of getting substantial remuneration for the loss or disfigurement of her nose than a man would obtain for a like injury to his nose. This is as it should be, for we all know how valuable comeliness is to a woman.

The *Presse médicale* for October 10th quotes from *La Nature* an account of certain instances that support this statement. Two of them occurred in England. In one of these the sum of £500 was awarded to a young woman whose nose had been broken, while an electrical engineer received only £15 to console him for a similar injury. And it seems that in France the courts are no less gallant. A poor man whose nose had been smashed by a blow of the fist recovered only 800 francs, though an artists' model, described as *une aimable personne*, was allowed 3,000 francs for far less injury to her nose in an omnibus accident. In this instance the person's occupation perhaps operated as much in her favor as her sex, for, says the account, a cracked nose is not highly esteemed by painters or sculptors.

MEDICINE IN PICTORIAL ART.

It is not always he who proclaims himself an instructor that satisfies his audience; he who modestly professes no more than entertainment often captivates his hearers. So it was that on Thursday of last week Professor Roswell Park, of Buffalo, charmed the ladies and gentlemen who attended the anniversary meeting of the New York Academy of Medicine. With a running commentary, he showed screen pictures that reproduced many paintings and drawings, by famous artists, bearing upon the teaching of anatomy and the practice of medicine, ranging from the ghastly to the grotesque. It is true that our French brethren have long been treated to this sort of entertainment in the pages of the *Nouvelle iconographie de la Salpêtrière*, but it must have been new to most of the men and women who were present on the occasion specified.

ERRATUM.

We regret the necessity of calling attention to an error in Dr. Piffard's article as published in our last issue. In Fig. 3 the direction of the arrow should be reversed. On consulting the original manuscript we find that it was correctly shown there.

Obituary.

CHARLES GARDNER JENKINS FINN, M. D.,

OF HEMPSTEAD, N. Y.

Dr. Finn, who died of apoplexy at his home on Saturday morning, November 3rd, was born in Brooklyn, January 29, 1855. He was prepared for college at Pennington Seminary, was graduated from Princeton College, and received his medical degree from the Bellevue Hospital Medical College in 1876. After a year of practice in New York, when he was an assistant of Dr. Lewis A. Sayre's, he settled in Hempstead, where he built up an extensive and lucrative practice, and held the esteem and respect of a wide circle of friends, both in and out of the profession. He was for some years a member of the board of education of his village, and freely gave his services for the advancement of the educational interests of the community.

News Items.

NEW YORK CITY AND STATE.

The Rochester, N. Y., Academy of Medicine.—The programme for a meeting held on Wednesday, November 21st, included a paper on Leucocytosis in Surgical Infections, by Dr. Charles O. Boswell.

The Harvey Society Lectures.—The fourth lecture in the Harvey Society course will be delivered at the New York Academy of Medicine, on Saturday evening, December 1st, by Professor J. G. Adami, of Montreal. Subject: The Myelins and Potential Fluid Crystals of the Body.

Changes of Address.—Dr. J. H. Bainton, to 166 West Eighty-fifth Street, New York. Dr. William Studenbord, to 53 West Seventy-first Street, New York. Dr. S. J. Woolley, from Long Branch, N. J., to 113 West Eighty-fifth Street, New York.

The Medical Society of the County of Otsego, N. Y.—The annual meeting of this society will be held at Oneonta, on Tuesday, December 11th. There is to be an election of officers (the first since the amalgamation of the two State bodies) and a symposium on Headache, from three different standpoints.

The Syracuse Academy of Medicine.—The programme for a meeting of this academy, held on Tuesday evening, November 20th, consisted of an illustrated lecture on Epilepsy and Epileptic Seizures, illustrated with the biograph, by Dr. William P. Spratling, Medical Superintendent Craig Colony for Epileptics.

Personal.—Dr. M. Boland, of the Long Island State Hospital, has been appointed from the Civil Service eligible list as junior assistant physician at the Hudson River State Hospital, at Poughkeepsie.

Dr. Spencer L. Higgins, assistant surgeon in the hospital of the Soldiers' Home, at Bath, N. Y., has resigned to accept the appointment of assistant surgeon in the navy.

The Medical Society of the County of Cayuga, N. Y., held a meeting at Auburn, on Thursday, November 8th, and elected the following officers: Dr. A. H. Brown, of Auburn, president; Dr. Seth Thomas, of Moravia, vice-president; Dr. F. A. Lewis, of Auburn, secretary; Dr. F. D. Putman, of Auburn, treasurer; censors, Dr. S. E. Austin, Auburn; Dr. B. I. Buckland, Fleming; Dr. D. F. Armstrong, Auburn; Dr. C. L. Lang, Cato.

The New York Neurological Society.—A special meeting of this society will be held at the New York Academy of Medicine, on Wednesday evening, November 28th. The programme includes the following papers: Dr. H. S. Frenkel, of Heiden, Switzerland, On the Mechanical Treatment of Nervous Diseases; Professor Pierre Janet, of Paris, Disturbances of Vision in a Hysterical Patient, Produced by Exaggeration of Binocular Association. (Will be read in French.)

The Manhattan Tuberculosis Clinic.—There are a number of vacancies in the staff of attending physicians and laryngologists of the Manhattan Tuberculosis Clinic of the Department of Health. Classes are held three times a week—in the morning, afternoon, and evening. The Department of Health hopes in the near future to remunerate the clinic physicians for their services. Those desiring to apply for the above mentioned positions should call at the office of the Division of Communicable Diseases, Department of Health, Fifty-fifth Street and Sixth Avenue, New York, N. Y.

The Clinical Society of the New York Postgraduate Medical School and Hospital.—The following programme was arranged for a meeting of this society, held on Friday, November 16th: Presentation of patients. A Case of Gastroenterostomy for Gastric Ulcer, by Professor W. Peterson. Reports of Cases. A symposium on Diseases of the Stomach divided as follows: The Surgical Treatment of Malignant Disease of the Stomach, Professor Robert T. Morris; The Medical Treatment of Malignant Disease of the Stomach, Professor Max Einhorn; Symptomatology and Diagnosis of Cancer of the Stomach, Dr. John E. Mackenty; discussion to be opened by Professor Porter and continued by Professor Meyer, Professor Sondern, Professor Lloyd, and Professor Halsey and Dr. Wells, Dr. Cairns, and others.

Charitable Bequests.—By the will of Mrs. Caroline H. Polhemus, of Brooklyn, about $405,000 is left to charity. Among the beneficiaries are the Brooklyn Eye and Ear Hospital, which receives $10,000; Dr. Trudeau's Adirondack Cottage Sanitarium, which receives $10,000; and the Polhemus Memorial Clinic, which receives $250,000 as an endowment fund for its maintenance and $50,000 additional to maintain the building. The Polhemus Memorial Clinic, which was founded by the testatrix at a cost of $500,000, was dedicated about eight years ago in memory of her husband, who for many years was a regent of the Long Island College Hospital, to which institution the clinic was turned over at the time it was dedicated.

The Sanitary Officers' Association of the County of Ontario.—The first regular meeting of this association was held at the court house, in Canandaigua, on October 30th, and the following officers were elected: President, Dr. O. J. Hallenbeck, of Canandaigua; vice-president, Dr. D. S. Allen, of Seneca; secretary and treasurer, Dr. D. A. Eiseline, of Shortsville. These officers constitute the executive committee, and have in charge the supervision of the new laboratory given and equipped by Mrs. F. F. Thompson for the benefit of the citizens of Ontario county. Through a special act of the legislature the supervisors of the county are enabled to furnish funds for the employment of a competent pathologist, and Dr. Howard Davenport, of Syracuse, was selected for that position. The laboratory is now completed and equipped with the most modern appliances for bacteriological examinations. It is also prepared to analyze water, milk, and other commodities liable to contamination. All physicians of the county, through their local health officer, are to have the privileges of the laboratory free, in cases involving the public health.

The Public Health Defence League Organized.—At a meeting, held in the Hudson Theatre in this city, on Thursday afternoon, November 15th, attended by delegates representing various organizations interested in matters pertaining to public health and morals, an organization was effected under the name of the Public Health Defence League, which is intended to coordinate the efforts of the various local and national bodies covering special fields of work. The meeting was called as a result of an address delivered by Champe N. Andrews, Esq., counsel for the Medical Society of the County of New York, before the Society of Medical Jurisprudence, of Philadelphia, some time ago. The meeting was called to order by Dr. Floyd M. Crandall, president of the Medical Society of the County of New York, and Dr. Frank Van Fleet was nominated as permanent chairman, but declined in favor of Mr. Austen G. Fox. The speakers included Mgr. Lavelle, of St. Patrick's Cathedral; Mrs. Martha M. Allen, of the W. C. T. U.; Dr. C. A. L. Reed, of Cincinnati, who spoke as a delegate from the American Medical Association; and Charles F. Stuart, reporter on the *Cleveland News*, who had been active in the exposure of quacks in that city. The general purpose of the organization is to actively combat quackery of all sorts, the adulteration of foods, child labor, and such public evils.

A Proposed Second Institution for Dependent Epileptics in New York State.—The Seventh New York State Conference of Charities and Corrections, held at Rochester on November 13th-15th last, was a great success. The attendance was large. More than three hundred and fifty delegates registered on the first day. Among other matters discussed was the urgent need for an institution for epileptics of a low grade of mentality, reserving the Craig Colony for Epileptics, at Sonyea, for a class whose minds have been but little or not at all impaired as a result of their disease. There are 16,000 epileptics in New York State, and we understand that there are at present about 1,000 applications on file at Sonyea from patients who cannot be admitted into the colony because there is no room. The census of the colony now is 1,050. Nearly three hundred delegates to the Rochester conference visited the colony, at Sonyea, by special train, on November 16th, where they were provided with luncheon in Sonyea Hall, and where they later listened to addresses by Mr. Daniel B. Murphy, of Rochester, N. Y., the newly elected president of the conference; by the Hon. James W. Wadsworth, Jr., Speaker of the Assembly; and Dr. W. P. Spratling, of the colony. All were especially pleased to hear the speaker of the assembly declare himself forcibly in favor of a second institution in this State for low grade epileptics, and he promised in case a bill to that end should be introduced into the legislature, to do what he

could to secure such an institution within reasonable proximity to New York city. There are sixteen great State hospitals for the insane; why not more colonies, or institutions, for epileptics?

The Hospital Conference of the City of New York.—At a meeting held at the Academy of Medicine on October 30th, a resolution was adopted by the conference providing for the appointment of a committee of investigtaion to consist of ten members. This committee will be subdivided into committees of one, to each of whom will be assigned one or more of the following subjects for investigation and report: (a) Hospital expenditure; (b) Uniform accounting; (c) State inspection and municipal aid; (d) The distribution and classification of hospitals and hospital beds in relation to the needs of the community; (e) Ambulance service; (f) Dispensaries; (g) Medical organization and medical education; (h) Paying patients; (i) Cooperation of hospitals with each other and with other relief agencies; (j) The treatment of patients in their own homes. It is provided that the committee of investigation shall have the right to offer reports and to make recommendations to the conference as a body, but each member of the committee shall have the right to present to the conference at any regular meeting a report on the subject especially assigned to him, and the reading of such reports shall constitute part of the regular order of business of the conference. The substance of any report made to the conference by an individual member of the committee of investigation may be published by him unofficially as a personal document; but no report shall be published as an official document of the conference unless it shall have been adopted by the conference by vote, and unless, following its adoption, its publication is ordered by the conference on the recommendation of the executive committee.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending November 17, 1906:

	November 17.		November 10.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	108	14	138	20
Smallpox	1	..	..	..
Varicella	46	..	36	..
Measles	72	3	57	2
Scarlet fever	115	5	84	3
Whooping cough	90	8	31	6
Diphtheria	253	36	290	39
Tuberculosis pulmonalis	373	176	319	163
Cerebrospinal meningitis	21	8	10	10
Totals	1,079	250	965	243

Society Meetings for the Coming Week:

MONDAY, *November 26th.*—Medical Society of the County of New York; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement; Baltimore Medical Association.

TUESDAY, *November 27th.*—New York Dermatological Society (private); Metropolitan Medical Society of New York (private); New York Otological Society (private); New York Medical Union (private); Buffalo Academy of Medicine (Section in Obstetrics and Gynæcology); Richmond, Va., Academy of Medicine and Surgery; Rome, N. Y., Medical Society; Boston Society of Medical Sciences (private).

WEDNESDAY, *November 28th.*—New York Academy of Medicine (Section in Laryngology and Rhinology); New York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Philadelphia County Medical Society; Auburn, N. Y., City Medical Association; Berkshire, Mass., District Medical Society (Pittsfield).

SATURDAY, *December 1st.*—Manhattan Medical and Surgical Society, New York (private); Miller's River, Mass., Medical Society.

PHILADELPHIA AND THE MIDDLE STATES.

The Pennsylvania Hospital has awarded a contract for the erection of an addition to its nurses' home.

The Frankford Hospital is about to erect a new ward on its grounds at Franklin and Wakeling Streets.

The Germantown Hospital will hold Donation Day on November 29th. The board of lady managers will serve tea.

The Mary M. Packer Hospital, of Sunbury, Pa., will receive $2,000 from the Ladies' Aid Society, toward the fund for a new building.

The Hospital of the University of Pennsylvania will hold Donation Day on Monday afternoon, November 26th. The hospital will be open for inspection and the board of women visitors will serve tea.

Jefferson Medical College.—A rumor that Princeton University was about to make Jefferson Medical College of Philadelphia its official department of medicine has been officially denied by representatives of both institutions.

Hospital for Carbondale.—Dr. W. F. Dixon is endeavoring to arouse enough enthusiasm among the physicians of the northern part of Lackawanna County, Pa., to establish a hospital at Carbondale.

The Cumberland County, New Jersey, Medical Society.—At the semiannual meeting of this society papers were read by Dr. C. W. Wilson, of Vineland, and Dr. E. S. Fogg, of Bridgeton.

The Mercer County, New Jersey, Medical Society held its annual banquet at Trenton, on Tuesday, November 13. An address on Surgical Tuberculosis was given by Dr. James K. Young.

The Clinical Society of the Elizabeth (N. J.) General Hospital.—At a meeting of this society, held on Tuesday, November 20th, Dr. R. B. Whitehead read a paper on Intestinal Parasites.

The Orange Mountain (N. J.) Medical Society.—At a meeting of this society, held at Orange, on Friday, November 16th, Dr. M. Runyon read a paper on Obstipation and Its Treatment by Clamps Producing Sloughing Through the Rectal Valves.

Franklin Institute.—At the section meeting of the Franklin Institute, held on November 15th, Mr. R. E. Doolittle, chief of the food inspection laboratory of the United States Department of Agriculture, described the methods of inspection of imported foods adopted by the Government.

The Mutter Lecture on Surgical Pathology, College of Physicians of Philadelphia.—The Mütter lecture for 1906 will be delivered in the hall of the College of Physicians, on Tuesday, December 4th, at 8.30 p.m., by Dr. William J. Mayo, Surgeon to St. Mary's Hospital, Rochester, Minn. Subject: The Principles Underlying Surgery of the Stomach and Associated Viscera.

Philadelphia Personal.—Dr. Ernest M. Dorsett and Dr. Milton F. Percival have passed the Civil Service examination for the position of resident physician at the Municipal Hospital, Philadelphia.

Dr. B. R. Tucker, of Richmond, Va.; Dr. Clifford E. Kaucher, of Reynoldsville, Pa.; and Dr. Edward M. Williams, of Wayne, Pa., are registered at the Philadelphia Polyclinic and College for Graduates in Medicine.

Scientific Society Meetings in Philadelphia for the Week Ending December 1, 1906.—*Monday, November 26th,* Mineralogical and Geological Section, Academy of Natural Sciences; Society of Normal and Pathological Physiology, University of Pennsylvania. *Tuesday, November 27th,* Philadelphia Neurological Society. *Wednesday, November 28th,* Philadelphia County Medical Society. *Thursday, November 29th,* Section on Medical History, College of Physicians.

The University of Pennsylvania Medical Society.—At the regular meeting of the University of Pennsylvania Medical Society, held at Dr. David Riesman's office, 1624 Spruce Street, November 16th, Dr. George W. Norris read a paper on the Study of Cardiac Disease from Simultaneous Tracings of the Arterial and Venous Pulses. Dr. George E. de Schweinitz read a paper concerning the Value of the Visual Field Phenomena in the Investigation of Certain Psychoses and Neuroses. Dr. J. P. Crozer Griffith read a paper on the Value of a Fat Free Diet in Indigestion in Infancy.

Sir William Perkin's Visit to Philadelphia.—Sir William Perkin, the father of the chemistry of the coal tar products, visited Philadelphia on Friday, Saturday, Sunday, and Monday, 9th to 12th. On Friday, the 9th, Sir William was the guest of the University of Pennsylvania, and was entertained at luncheon in Houston Hall. On Monday, the 12th, he was entertained by the Philadelphia Section of the American Chemical Society, which gave a smoker in his honor at the University Club. During his stay in Balti-

more. Sir William was awarded the honorary degree of LL. D. by Johns Hopkins University.

Philadelphia Hospital for the Insane.—The city council of Philadelphia, on Thursday, November 15th, passed a bill authorizing the city to purchase a site on the outskirts of, but within the limits of, Philadelphia County for a new hospital for the insane. The price to be paid is $261,000, which is at the rate of $300 an acre. The mayor signed the bill on the following day. The condition of the insane poor in Philadelphia has long been anything but hygienic, and it is to be hoped that now that the city has bought a satisfactory piece of ground, work will be begun immediately on the necessary buildings, and that they will be erected without delay and without scandal.

Philadelphia Branch of the American Pharmaceutical Society.—The regular meeting of the Philadelphia branch of the American Pharmaceutical Society was held at the College of Physicians on Tuesday, November 6th. Professor S. P. Sadtler opened a discussion on the work of the council on pharmacy and chemistry of the American Medical Association by reading a paper on the work of the council. Dr. Alfred Stengel read a paper entitled The Endorsement of the Council by the Medical Profession. Professor Charles H. LaWal spoke on The Effect of Publicity on the Standing and the Use of Nostrums, and Professor L. W. A. Puckner spoke on the needs of the council.

Charitable Bequests.—By the will of Samuel W. Goodman, the Jewish Hospital will receive $2,000; the Jewish Foster Home and Orphan Asylum will receive $1,000; the National Farm School at Doylestown, Pa., will receive $500; and the Jewish Maternity Hospital will receive $300, upon the decease of the testator's wife. The Jewish Hospital Association and the Jewish Foster Home and Orphan Asylum are also residuary legatees. By the will of Sarah Lewis the Children's Hospital receives $5,000. By the will of Jane Hutchinson the Medicochirurgical Hospital receives $3,000 for the establishment of a free bed to be known as the John Hutchinson Fay Free Bed. The Home for Incurables and the Home of the Merciful Savior for Crippled Children receive $500 each.

Philadelphia Pædiatric Society.—The following programme was presented at the regular meeting of the Pædiatric Society, held on November 13th: Dr. H. Lowenberg and Dr. G. F. Pfahler exhibited a case of cretinism and a case showing cretinoid features. Dr. Eleanor C. Jones exhibited a case of congenital heart disease. Dr. C. H. Weber exhibited two children upon whom Edebohls's operation had been performed. Dr. M. H. Fussell read a paper on the Artificial Feeding of Infants in General Practice. Dr. Theodore LeBoutillier reported a case of hysteroepilepsy. Dr. D. J. Milton Miller and Dr. C. Y. White exhibited a case of congenital hydronephrosis, dilated ureters, and hypertrophied bladder from a child six weeks old.

Philadelphia County Medical Society.—At the meeting of the Philadelphia County Medical Society, held on Wednesday, November 14th, Dr. Francis X. Dercum read a paper on the Diagnosis and Treatment of Multiple Neuritis. Dr. William Pickett read a paper on the Polyneuritic Psychosis (Korsakoff's Disease). Dr. James Hendrie Lloyd read a paper on Peroneal Palsy Following Childbirth. Dr. William G. Spiller read a paper on the Diagnosis of Lesions, Especially Tumors, of the Conus and Cauda Equina. Dr. T. H. Weisenberg read a paper on Klumpke's Brachial Sympathetic Paralysis. Dr. Arnold Lorand read a paper on Senility. The discussion was opened by Dr. C. W. Burr and continued by Dr. Wharton Sinkler, Dr. Charles S. Potts, Dr. D. J. McCarthy, Dr. Alfred Gordon, and Dr. Charles K. Mills.

The Health of Philadelphia.—During the week ending November 10, 1906, the following cases of transmissible diseases were reported to the Bureau of Health:

	Cases.	Deaths.
Malarial fever	1	0
Typhoid fever	123	16
Scarlet fever	31	0
Chickenpox	22	0
Diphtheria	82	19
Cerebrospinal meningitis	6	2
Measles	35	4
Whooping cough	7	3
Tuberculosis of the lungs	86	56
Pneumonia	53	45
Erysipelas	3	1
Septicæmia	1	0
Cancer	13	15
Anthrax	1	0
Mumps	3	0

The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 38; diarrhœa and enteritis, under two years of age, 22; dysentery, 1. The total deaths for the week were 474, in an estimated population of 1,469,126, corresponding to an annual death rate of 16.78 in a thousand population. The total infant mortality was 96; under one year of age, 82; between one and two years of age, 14. There were 29 still births, 17 males and 12 females. No unusual meteorological phenomena were recorded by the Weather Bureau.

BOSTON AND NEW ENGLAND.

Yale Medical School.—At a meeting of the Yale Corporation, held on Monday, November 19th, a gift of $50,000 from an anonymous donor for the endowment of a professorship in medicine in the Yale Medical School in memory of Dr. John Slade Ely, who died last spring, was announced. An important advance was decided upon in connection with admission to the medical school, to go into effect in September, 1909. Candidates must present testimonials of moral character and must fulfil certain educational requirements.

The Mortality of Connecticut.—According to the State Board of Health's *Monthly Bulletin* for October, 1906, the total number of deaths during the month was 1,273. This was 69 less than in September, and 107 more than in October of last year, and 143 more than the average number of deaths during October for the five years preceding. The death rate was 15.2 for the large towns, for the small towns 15.3, and for the whole State 15.2. The deaths reported from infectious diseases were 225, being 17.6 per cent. of the total mortality.

The Annual Conference of the Health Officials of Connecticut, which for the past three years has been held under the auspices of the State Board of Health, will be omitted this year, owing to lack of funds at the disposal of the board for defraying the expenses of such a conference. For the same reason it was impossible to publish the proceedings of the third annual conference held in New Haven last December. The State Board of Health appreciates the value of these annual gatherings of health officials, and hopes that another year its finances will be such as to permit of their continuance.

The Windham County (Conn.) Medical Association.—The programme arranged for the semiannual meeting of this society, held at Danielson, on Thursday, November 8th, included the address by the president, Dr. Robert C. White, of Willimantic, on The Diagnostic Value of Inspection and Palpation in Diseases of the Stomach and Intestine, and the following papers: Flat Foot and the Fitting of Shoes, by Dr. Ansel G. Cook, Hartford; Some Points of Contact Between Otology and General Medicine, with Illustrative Cases, by Dr. Frank B. Sprague, Providence, R. I.

BALTIMORE AND THE SOUTH.

The Tri State Medical Association, of Mississippi, Arkansas, and Tennessee, held its twenty-third annual meeting at Memphis, on Tuesday, Wednesday, and Thursday, November 20th, 21st, and 22nd, under the presidency of Dr. Allen E. Cox, of Helena, Ark.

The Memphis and Shelby County (Tenn.) Medical Society.—The following programme was arranged for a meeting, held on Tuesday, November 20th: The Prescribing of Proprietaries, Fred Weiss, Ph. G.; Pharmaceuticals *vs.* Proprietaries, J. H. Furman, Ph. G., Ph. D.

The Mecklenburg County, Va., Medical Society was recently organized at Chase City, Va. The officers elected were as follows: President, Dr. John R. Leigh, of Clarksville; vice-president, Dr. D. Hunter Marrow, of Union Level; secretary and treasurer, Dr. J. C. Walton, of Chase City.

The Richmond (Va.) Academy of Medicine and Surgery.—The programme presented at a meeting of this academy, held on Tuesday, November 13th, was as follows: Fraternalism Between Doctors and Druggists, by Dr. W. A. Andrews, of Baltimore; Flat Foot, by Dr. W. P. Mathews; Benign Structure of the Rectum, by Dr. M. E. Nuckols.

The Washington County (Md.) Medical Society.—At a meeting of this society, held at Hagerstown, on Thursday, November 8th, officers were elected as follows: Dr. Edwin M. Schindel, president; Dr. S. M. Wagaman, vice-president; Dr. Victor D. Miller, Jr., secretary; Dr. H. K. Derr, treas-

urer; Dr. J. Walker Humrichouse, delegate to the Medical and Chirurgical Faculty of Maryland; Dr. V. M. Reichard, Dr. J. McPherson Scott, and Dr. D. C. R. Miller, board of censors.

The Southern Surgical and Gynæcological Association.—The nineteenth annual meeting of this association will be held at Baltimore on Tuesday, Wednesday, and Thursday, December 11th, 12th, and 13th. The officers of the association are: Dr. George H. Noble, Atlanta, Ga., president; Dr. Stuart McGuire, Richmond, Va., and Dr. E. Denegre Martin, New Orleans, La., vice-presidents; Dr. William D. Haggard, Nashville, Tenn., secretary; Dr. Charles M. Rosser, Dallas, Texas, treasurer. Dr. Howard A. Kelly, Baltimore, is chairman of the committee of arrangements.

The Frederick County, Maryland, Medical Society.—The annual meeting of this society was held at Frederick, on Wednesday, November 14th. The following officers were elected: President, Dr. J. W. Downey, Newmarket; vice-presidents, Dr. William Crawford Johnson, Frederick, and Dr. Joseph H. Leib, Mount Pleasant; secretary, Dr. Ira C. McCurdy, Frederick; treasurer, Dr. Wilson A. Long, Frederick; delegate, Dr. Franklin B. Smith, Frederick; board of censors, Dr. C. F. Goodell, Dr. F. B. Smith, and Dr. William H. Wagner.

The Mortality of Baltimore.—The report of the Health Department for the week ending November 10th, showed a total of 189 deaths, as compared with 221 the corresponding week of last year, 193 in 1904, and 190 in 1903. The annual death rate in a thousand of population was: Whole, 16.87; white, 14.83; colored, 27.77. The principal causes of death were:

Typhoid fever	3	Pneumonia	7
Whooping cough	5	Diarrhœa (under 2 years of age)	3
Diphtheria	3	Bright's disease	14
Membranous croup	1	Congenital debility	20
Consumption	31	Lack of care	2
Cancer	10	Old age	6
Apoplexy	3	Suicides	1
Organic heart diseases	14	Accidents, etc.	11
Bronchitis	5		

The nativity of those who died was: United States, 104; foreign, 32; colored, 44; unknown, 9. Ten deaths occurred at Bayview Asylum, 22 in hospitals, and 9 in other institutions. Twenty-four coroners' inquests were held. The births reported were: Total, 227; white, 212; colored, 15; males, 114; females, 113. The following number of cases of infectious diseases were reported, as compared with the corresponding week of last year:

	1905.	1906.		1905.	1906.
Diphtheria	22	37	Mumps		2
Scarlet fever	16	12	Whooping cough	5	7
Typhoid fever	24	20	Consumption	13	17
Measles	1	6			

CHICAGO AND THE WEST.

The Physicians' Club, of Omaha.—At a recent meeting held by a number of the younger physicians of Omaha, a club was organized with Dr. LeRoy Crummer, president; Dr. Charles O'N. Rich, vice-president; and Dr. Frederick W. Lake, secretary.

A Consolidation of Medical Journals.—It is announced by the publisher, Mr. E. G. Swift, that on January 1, 1907, the *Therapeutic Gazette* will incorporate the *Medical Age* and *Medicine*. The title of the consolidated journals will be *The Therapeutic Gazette*, incorporating *Medicine* and the *Medical Age*, and will be under the editorship of Dr. Hobart A. Hare and Dr. Edward Martin.

The Union Medical Association of the Sixth, Ohio, Councilor District, held a joint meeting with the *Fifth Councilor District*, at Ravenna, Ohio, on Tuesday, November 13th. Papers were presented by the following named physicians: Dr. Hunter Robb, Cleveland; Dr. E. J. March, Canton; Dr. C. C. Booth, Youngstown; Dr. W. G. Smith, Ravenna; Dr. A. B. Campbell, Orrville; Dr. John K. Tressel, Alliance; Dr. Frank E. Bunts, Cleveland; Dr. T. M. Sabin, Warren; Dr. C. T. Hill, Akron; Dr. John P. Sawyer, Cleveland; Dr. H. I. Cozad, Cuyahoga Falls.

The Wabash Railway Surgical Association.—At the twenty-fifth annual meeting of this association, held at St. Louis, Mo., on Thursday, November 8th, the election of officers resulted as follows: President, Dr. Clifford Kirkpatrick, Adrian, Mich.; vice-president, Dr. W. M. Pritchett, Glasgow, Mo.; secretary, Dr. C. B. Stemen, Fort Wayne, Ind., reelected. At the banquet, Dr. Stemen, who has been the secretary of the association since its organization, received a silver loving cup as a token of esteem. The presentation speech was made by Dr. W. A. McCandless, of St. Louis.

Statement of Mortality of Chicago for the Week Ending November 10, 1906, compared with the preceding week and with the corresponding week of 1905. Death rates computed on United States Census Bureau's figures of midyear populations, 2,049,185 for 1906; 1,990,750 for 1905:

	Nov. 10, 1906.	Nov. 3, 1906.	Nov. 11, 1905.
Total deaths, all causes	514	482	469
Annual death rate in 1,000	13.08	12.26	12.28
Sexes—			
Males	292	297	285
Females	222	185	184
Ages—			
Under 1 year of age	96	98	83
Between 1 and 5 years of age	54	36	41
Between 5 and 20 years of age	26	40	30
Between 20 and 60 years of age	237	207	188
Over 60 years of age	101	101	127
Important causes of death—			
Apoplexy	9	10	10
Bright's disease	35	36	45
Bronchitis	10	12	17
Consumption	66	54	49
Cancer	22	21	28
Convulsions	13	6	8
Diphtheria	19	12	17
Heart diseases	36	46	40
Influenza	1	1	0
Intestinal diseases, acute	34	31	28
Measles	3	1	0
Nervous diseases	24	23	17
Pneumonia	68	75	63
Scarlet fever	6	4	2
Suicide	6	8	7
Typhoid fever	10	6	8
Violence (other than suicide)	32	27	28
Whooping cough	3	4	1
All other causes	117	105	101

GENERAL.

The Health of the Americans in the Canal Zone.—According to the report of the Department of Health of the Isthmian Canal Commission for the month of September, 1906, seven white men out of a total of 5,000 died, two of disease and five from violence. Both of the white men died of pneumonia; one was a Greek and the other a Jamaican, and both had been on the Isthmus for eight months. There are about 4,800 Americans on the Isthmus, and Dr. Gorgas says: "I think it is worthy of remark that 5,000 Americans recently from a temperate zone should have been able to pass two months during the height of the rainy season, their work extending forty miles through a tropical jungle, without a single death from disease of any kind. The figures with regard to employees are absolute. We get the actual number of employees from our pay rolls, and the deaths from the hospital reports and the cemetery reports." There are about 1,000 women and children, wives and families of the American employees on the Isthmus, and none of these died of disease during August and September.

The Ohio Valley Medical Association.—The eighth annual meeting of this association was held at Louisville, Ky., on November 14th and 15th. Dr. D. M. Griffith, of Owensboro, president of the association, was chosen president of the Kentucky State Medical Society at the recent meeting of that organization. The other officers of the association are as follows: First vice-president, Dr. Brooks F. Beebe, of Cincinnati; second vice-president, Dr. H. P. Sights, of Paducah; third vice-president, Dr. Curran Pope, of Louisville; secretary and treasurer, Dr. Benjamin L. W. Floyd, of Evansville, Ind. The local committee of arrangements for this meeting of the association was composed of Dr. J. Garland Sherrill, chairman; Dr. John R. Wathen, Dr. Charles G. Lucas, Dr. J. J. Moren, and Dr. Adolph O. Pfingst. Among those who were to contribute to the programme were: Dr. J. H. Kellogg, of Battle Creek, Mich.; Dr. T. D. Crothers, of Hartford, Conn.; Dr. Warren S. Bickham, New York City; Dr. John Y. Brown, St. Louis; Dr. Charles A. L. Read, Cincinnati; Dr. Thomas B. Eastman, Indianapolis; Dr. C. R. Holmes, Cincinnati, and Dr. Charles H. Mayo, Rochester, Minn. The election of officers resulted as follows: Dr. Brooks F. Beebee, of Cincinnati, president; Dr. J. L. Wiggins, of East St. Louis, first vice-president; Dr. Curran Pope, of Louisville, second vice-president; Dr. A. E. Sterns, of Indianapolis, third vice-president; and Dr. B. L. W. Floyd, of Evansville, Ind., secretary-treasurer, reelected.

Pith of Current Literature.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

November 17, 1906.

1. The Utilization of the Broad Ligaments in Complete Descent of the Uterus, Hysteromyomectomy and Removal of the Uterine Appendages, By E. C. DUDLEY.
2. Milk in Infectious Diseases, By W. F. CHURCH.
3. The Quantitative Estimation of Diet in Private Practice, By A. L. BENEDICT.
4. The Diet in Albuminuria. A Clinical Experimental Study, By HEINRICH STERN.
5. Nostrums and Fraudulent Methods of Exploitation (*Concluded*), By L. F. KEBLER.
6. The Cure of Psoriasis, with a Study of Five Hundred Cases of the Disease Observed in Private Practice, By L. DUNCAN BULKLEY.
7. Unilateral Ascending Paralysis and Unilateral Descending Paralysis. Their Clinical Varieties and Their Pathological Causes, By CHARLES K. MILLS.
8. Technics in the After Care of the Radical Mastoid Operation, By PHILIP HAMMOND.
9. Anastomosis of Blood Vessels by the Patching Method of Transplantation of the Kidney, By ALEXIS CARREL and C. C. GUTHRIE.

1. **The Utilization of the Broad Ligaments in Complete Descent of the Uterus, Hysteromyomectomy and Removal of Uterine Appendages.**—Dudley proposes, in place of vaginal hysterectomy and other operations so often performed for complete descent of the uterus, a new operation, the essential factor of which is the utilization of the broad ligaments as supports of the pelvic floor without removal of the uterus. After describing the mechanism of descent of the uterus he speaks of the reasons for failure of the former operations, and describes his end to end approximation of the broad ligament in supravaginal and complete hysteromyomectomy. The advantages of his operation he gives as follows: 1. The broad ligaments, in the anatomical sense, take the place of the excised uterus and form a pouch posteriorly like the cul-de-sac of Douglas, and anteriorly a depression that answers to the uterovesical pouch, thus conforming to the normal anatomy. 2. The broad ligaments, thus united, together with adjacent structures, hold up the rectum, bladder, vagina, and other parts of the pelvic floor, and in so doing prevent the descent of these organs which so commonly results from hysterectomy as ordinarily performed. 3. The broad ligaments and adjacent structures, in occupying the space left by complete hysterectomy, prevent the intimate union of the rectum and bladder, a union which would leave only a thin wall between them, through which infection might pass from one to the other. 4. The operation is performed more easily and quickly by this method than by that of transverse suturing of the wounded ligaments. 5. There is, after closure, much less intraperitoneal traumatism and consequently less danger of sepsis, adhesions, and secondary hæmorrhage. 6. The mortality of the operation in his own cases during the last four years has not risen above 1 per cent.

2. **Milk in Infectious Diseases.**—Church does not advocate an exclusive milk diet, but claims that milk should be made the principal food substance in infectious diseases. Other valuable foods, such as the albumen of eggs or the juice of beef, which contains 6 per cent. of protein, may be used for alternate feeding or as adjuvants. Occasionally a patient has an extreme repugnance to milk and must be nourished by other foods. Greater attention is probably paid to diet in typhoid than in any other infection, because of the intestinal lesions, and yet it has been claimed that less than one fourth of the deaths are due to hæmorrhage or perforation, while nearly one half died from the severity of the infection. In other diseases, like pneumonia or variola, it is the severity of the infection that is the chief cause of death. Hence the great need in all severe diseases of maintaining the strength of the patient by proper nutrition. Lack of attention to feeding has undoubtedly been the cause of many deaths. For the system to win in a severe fight with the agents of death it must be fully and continuously supported. The indigestible curd is the chief objection, but the author does not think it a valid one.

3. **The Quantitative Estimation of Diet in Private Practice.**—Benedict suggests the following plan: The patient or nurse should prepare for the physician a diet sheet in which the meals and days are clearly lined off from one another. For each meal there should be placed at the left the names of the articles eaten and drunk, then their quantities, then in three other columns, the amount of proteid, fat, and carbohydrate contained, as shown by food analyses obtained from any standard textbook. The physician can easily add the grammes of the three organic nutrients, taken by the patient, get their totals for the day, and suggest additions or omissions necessary to make the diet conform to the desired standard for the particular case.

4. **The Diet in Albuminuria.**—Stern has made a series of clinical experimental studies concerning the influence of diet on the degree of intensity of albuminuria. The albumin determinations were made in all instances with the twenty-four hours' urine, and were started forty-eight hours after instituting the diet, and by means of Esbach's albuminometer, which, although inexact, is accurate enough to point out the fluctuations of the degree of the albuminuria. The substances tested were proteids in the form of milk, eggs, and meats; the commonly employed carbohydrates and fats; and water.

6. **The Cure of Psoriasis, with a Study of Five Hundred Cases of the Disease Observed in Private Practice.**—Bulkley deducts the following conclusions from his observations: Psoriasis is not a purely local disease of the skin, but has constitutional relations which are most important. It is not a parasitic disease of the skin, in the usual acceptation of the term; it is not contagious, nor has it a definite microorganism. But probably the immediate lesions on the skin are caused by the growth of some of the ordinary microorganisms usually found on the skin, which take on a pathogenetic action when the soil is suitable. It cannot be cured permanently by local treatment alone, although when properly directed this is commonly capable of removing existing lesions, which are likely to return. Heredity influence is a relatively unimportant factor, and it is not a late manifestation of syphilis. There is no one tangible internal cause of psoriasis, though faulty metabolic changes are probably at the bottom of every case, and these may be induced in many ways. The repeated and thorough volumetric analysis of the urine is a most valuable aid in determining the line of proper treatment in different cases and at different times. There is no one internal remedy universally of value in psoriasis, although arsenic is the single agent of most service in the greater number of instances. Arsenic is safe, if properly used, and may be taken for a long time with only beneficial results; but it commonly requires to be employed in conjunction with other internal measures, or alternated with them. In acutely developing psoriasis it often acts badly, increasing the eruption. In a large share of cases alkalies, if properly used, are of the greatest value in psoriasis. The avoidance of meat, or an absolutely vegetarian diet, is a most valuable aid in treatment, and sometimes will be attended with freedom from the eruption. Local treatment is of the greatest value in the removal of the eruption present, but its temporary success should not interfere with the persistence in proper internal measures for a length of time, even when no eruption exists. The eruption can also disappear under the strictest

proper internal treatment, without the aid of any local measures. The x ray is a most valuable adjunct to local therapeusis, and is sometimes capable of removing chronic lesions even by means of a single application.

7. **Unilateral Ascending Paralysis and Unilateral Descending Paralysis.**—Mills writes that in December, 1899, he presented a paper to the Philadelphia Neurological Society in which he called attention to a new clinical type which he designated as unilateral progressive ascending paralysis. Somewhat similar cases have since been described under such terms as progressively developing hemiplegia, chronic progressive hemiplegia, and ascending unilateral paralysis. Unilateral ascending paralysis is probably the simplest and, therefore, the best designation for the symptom complex. Unilateral ascending paralysis due to degeneration of the pyramidal tracts, or to this and some added condition of degeneration, is the more common form of progressively developing hemiplegia, but an affection essentially the same sometimes takes a reversed order, so far as the limbs or as the face and limbs are concerned, giving us an unilateral descending paralysis or a progressively descending hemiplegia.

9. **Anastomosis of Bloodvessels by the Patching Method and Transplantation of the Kidney.**—Carrel and Guthrie define the expression "patching method" as a closing of an opening in the wall of a vessel by fitting and sewing to its edges a flap taken from another vessel or from some other structure such as the peritonæum. For example, a portion of the wall of a carotid artery may be removed and the opening thus produced closed by a patch taken from the external jugular vein. The anastomosis by the patching method consists of extirpating a vessel together with an area or patch from the vessel of origin, the patch being so cut that the mouth of the extirpated vessel is situated in the centre of the patch. The edges of the patch are then fixed to the edges of a suitable opening made in the wall of another vessel. For example, a spermatic artery of a dog was dissected and removed with a triangular patch of the wall of the aorta surrounding its mouth. The edges of this patch were then sutured to the edges of a suitable opening made in one of the femoral arteries. The spermatic artery was thus anastomosed to the wall of the femoral artery. The authors conclude that by the patching method, the terminolateral anastomosis of bloodvessels is more safely performed than by the other methods. It prevents the occurrence of gangrene after the transplantation of organs even in case of slight infection. The circulation of a kidney, transplanted with anastomosis of its vessels by the patching method, is excellent four months after the operation.

MEDICAL RECORD.

November 17, 1906.

1. Hereditary Chorea, By CLARENCE KING.
2. Man's Natural Protective Agencies Against Tuberculosis, By SILVIO VON RUCK.
3. A Plea for Early Surgical Interference in Pelvic Infections, By J. C. TAYLOR.
4. Results in Röntgen Therapy, By CHARLES LESTER LEONARD.
5. Report of a Case of Cerebrospinal Fever, By W. O. WILKES.
6. When to Use Medicines in Pneumonia, By DUDLEY MORGAN.

1. **Hereditary Chorea.**—King reminds the reader that hereditary chorea differs widely from the ordinary form of chorea and suggests an altogether different pathology. It is only within the last twenty or twenty-five years that the disease has been generally recognized by neurologists, and in still less time that an attempt has been made at careful study of its pathology. That hereditary chorea is a rare disease no one will deny, many neurologists in all parts of the world never having seen a case, unless on exhibition as a curiosity. At present the number of cases reported in this country probably does not exceed one hundred and fifty or two hundred, in spite of the fact that it is here the disease has been longest known. Of the ætiology of the disease little is known beyond the very positive influence of heredity. The duration of the disease is generally about twenty or twenty-five years. A few cases have been reported which were more rapid in their course, but acute cases of a few weeks' or a few months' time are unknown. The diagnosis must be from Sydenham's chorea, athetosis, the ataxia of paresis, and of disseminated and combined sclerosis, and from simple, chronic adult or senile chorea. Ordinarily the diagnosis is easy on account of the history of chorea in a parent or grandparent; in fact, the patient and his friends are watching with fear for the expected development of the disease. It is most apt to be mistaken for the simple chronic form of adult chorea, but it can generally be readily differentiated by its absence of known cause, as pregnancy, hysteria, or serious disease of the heart or bloodvessels, by its very slow onset, and by its history of well marked heredity. The treatment of hereditary chorea marks a sad chapter in therapeutics. Nothing as yet has been found of permanent benefit, and our only success comes from treating intercurrent complications as they arise. Arsenic, hyoscine, galvanism, and prolonged rest have been tried, but without favorable results, and the only effect of bromides is to hasten mental decay. Not a single case of cure is known in literature, nor is it possible to even hold in check or abate the severity of the movements except for a brief time.

2. **Man's Natural Protective Agencies Against Tuberculosis.**—Von Ruck takes up the different parts of the body which may be attacked by the tubercle bacillus, and says that the human organism is indeed well supplied with a host of protective agencies against tuberculosis. The efficiency of these numerous agencies, depending as it does upon their integrity, is not always of the same degree. Through impairment of their function or by its destruction the protection afforded is often temporarily or permanently lost. Thus given the opportunity for tuberculous infection with this or that avenue unguarded, the bacillus may enter and become localized in the tissues. That this happens far more frequently than clinical observations of tuberculosis would indicate is well known, autopsy findings in persons who have died from other causes having revealed healed or latent processes, according to different observers, in from 40 to 90 per cent. That such lesions have not led to active and progressive disease during the life of the individual is, owing chiefly to internal provisions for defense which constitute the natural resistance of the organism, a subject which I may not discuss at this time. Under ordinary conditions, however, of vigorous adult health and vitality it is perhaps not presumptuous to regard the natural and uninjured protective agencies as quite effectual, unless the elements of infection gain entrance in extraordinary numbers.

4. **Results in Roentgen Therapy.**—Leonard states that one result clearly demonstrated of Röntgen treatment is the conversion of the lymphatic channels into solid cords. This destruction of the lymphatics means the isolation of the foci of disease, the destruction of the paths through which metastasis or the spread of the disease could take place. Palliative value should not be overlooked either. Malignant disease too frequently comes for treatment too late, or incomplete operation results in recurrence. In fact, cures by whatever means are only too rare. The value of a method which certainly retards the progress of the disease, prevents external ulceration, and relieves pain is un-

doubted. To every patient suffering from inoperable malignant disease this agent offers a promise of palliation that cannot justly be ignored.

5. **Report of a Case of Cerebrospinal Fever.**—Wilkes says that he does not believe that iodide, bromide, bichloride, or gelsemium have any beneficial effect whatever, and, in fact, he thinks, are harmful. Ergot may have a limited usefulness, chiefly to aid the quieting effect of the morphine and as a heart stimulant. Blistering is worse than useless, and adds an element of irritation and pain, if not weakness, to a sufferer who already has a grievous burden of each to bear. The chief indications are morphine hypodermically and ice bags to the head and spine. Of course the beginning of treatment should be prefaced by a good calomel purge. Possibly small doses of chloral by the bowel or internally will help if the morphine does not produce sleep. Spinal punctures for diagnostic purposes and to relieve pressure symptoms are beneficial. Nourish with albumen, water, and solutions of peptones; milk, if well borne; later use stimulants freely, as indicated, strychnine, or alcohol, if the heart seems to need support. The thing to do is to relieve pain, support the patient, relieve pressure if possible, and trust in the *vis medicatrix naturæ*. The author's contention is that there is no more reason for quarantining cerebrospinal meningitis than pneumonia, erysipelas, influenza, or any other infectious disease. The evidence as to the contagiousness of pneumonia is immensely greater than that of meningitis, and the susceptibility of the human family to pneumonic infection is still greater.

BRITISH MEDICAL JOURNAL.

November 3, 1906.

1. Remarks on the Influence of Rainy Winds on Phthisis in Twenty-Three Parishes of North Devon During the Forty-Five Years, 1860 to 1904, By W. GORDON and J. R. HARPER.
2. The Causes, Sequelæ, and Treatment of Pericolic Inflammation, By D. A. POWER.
3. A Case of Appendicitis: Removal of a Stercolith: Passage of an Ascaris Lumbricoides Fourteen Days Later, By O. W. ANDREWS.

(Seventy-Fourth Annual Meeting of the British Medical Association.)

Section of Obstetrics and Gynæcology.

4. Concealed Accidental Hæmorrhage, By A. H. WRIGHT.
5. Chronic Uretritis and Arteriosclerotic Uterus, By W. GARDNER and J. R. GOODALL.
6. A Study of One Hundred and Forty-Six Consecutive Cases of Ventrifixation of the Uterus, By A. E. GILES.
7. Changes in Uterine Fibroids After the Menopause Considered with Reference to Operation, By C. H. L. REED.
8. Indications for Cæsarean Section Other than Pelvic Deformities or Tumors, By H. L. REDDY.
9. Uterine Abscess: Uretritis Dessicans, By J. W. WALLACE.
10. The Treatment of Eclampsia, By D. J. EVANS.
11. The Surgical and Serum Treatment of Puerperal Sepsis, By L. S. MCMURTRY.
12. A Study of Seventy Cases of Ectopic Gestation, By J. F. W. ROSS.
13. Ectopic Pregnancy, By M. CAMERON.

1. **Rainy Winds and Phthisis.**—Gordon and Harper have continued their investigations as to the influence of rainy winds on phthisis. They have studied the climatic conditions obtaining in twenty-three parishes of Devon, and divide them into three classes: 1. Sheltered. 2. Exposed to northwest winds. 3. Exposed to west and southwest winds. Compiling now the death rates from phthisis for the last forty-five years, they find that class one had an annual death rate of 0.99 per 1,000, class two a rate of 1.33, and class three a rate of 1.38. So that their results bear out the experience of former investigations that the death rate from phthisis of populations exposed to strong prevalent rainy winds is greater than that of populations sheltered from them.

2. **Pericolitis.**—Power sums up his conclusions in the following propositions: 1. Pricolitis is not very rare, although it is one of the less common forms of local peritonitis. 2. It occurs in connection with the ascending as well as with the descending colon, but has not been observed in the neighborhood of the transverse colon. 3. The cause of pericolitis may be found within the colon as a result of chronic constipation, in the walls of the colon from ulceration of the mucous membrane or from the perforation of foreign bodies, outside the colon as a result of injury. 4. Pericolitis ends in resolution, in chronic inflammation sometimes with extensive thickening of the colon, or in suppuration which is usually retropertioneal. 5. The treatment consists in an attempt to prevent the inflammation becoming chronic, and in the early opening of any abscess which may be formed.

5. **Arteriosclerotic Uterus.**—Gardner and Goodall, from a study of nine cases of chronic metritis and arteriosclerotic uterus, have come to the following conclusions: 1. Uretritis may be classified as simple (without participation of the other pelvic organs), and complicated (with participation of other organs). 2. Pathologically simple metritis may be divided into (a) those arising from infection, subinvolution, etc., where there is a degeneration of the nature of an inflammatory deposit; (b) those of true arteriosclerotic origin; characterized by fibrosis of the uterine wall and changes in the vessels. 3. Cases of arteriosclerotic origin are not due to infection. 4. Subinvolution, from whatever cause, is the most frequent cause of chronic metritis. 5. In all cases of chronic metritis not arisng from arterosclerosis there is hypertrophy of the muscle, as well as of the noncontractile element, and such muscle hypertrophy is either due to incomplete involution or it is a result of congestion. 6. In the arteriosclerotic cases there may or may not be associated muscular hypertrophy. 7. Changes in the endometrium in the nature of endometritis are found in cases of septic origin, but can never be primary in the arteriosclerotic cases except by the association of two distinct diseases. 8. The hæmorrhages are not due to endometritic changes, but endometrial involvement may accentuate the flow. 9. Menorrhagia and metrorrhagia are due to muscular insufficiency in the infective cases. 10. Such insufficiency is due to the increase in noncontractile tissue. 11. Hæmorrhage in arteriosclerotic uteri is due to pelvic congestion and high arterial tension with lack of contractility of the vessels. 12. The lumina of the vessels do not suffer from the proliferation of the intima; the changes is one of compensation.

6. **Ventrifixation.**—Giles holds that the operation of ventrifixation is indicated in cases of movable retroversion of the uterus when pessaries have been tried without success, where the retroverted utrus is held down by adhesions, where there is complicating disease of the appendages, and in cases of prolapse and total procidentia. Coexistent abnormal conditions should be treated whenever possible. When pregnancy follows ventrifixation there is a slightly increased risk of abortion, and the position of the uterus is slightly disturbed. The operation leads to marked improvement in the patient's general condition in about ninety per cent. of the cases.

7. **Fibroids.**—Reed states that the only safe place for a fibroid of the uterus, however small or large, soft or hard, recent or old, is outside the patient's body. The menopause is a poor surgeon. The only cases in which the expediency of operation may be questioned are those in which the tumor does not cause hæmorrhage or exert pressure, or present evidences of either infection or malignancy, or that has ceased to grow and in which some condition, not connected with the

tumor itself, makes operation the more dangerous policy.

11. **Treatment of Puerperal Sepsis.**—McMurtry holds that in puerperal sepsis the best results follow the simplest treatment, avoiding radical surgical intervention, and facilitating drainage and elimination. Cleansing the uterine cavity by irrigation should be given preference over curettage whenever practicable. On account of our inability to accurately measure the character of infection and the extent of tissue invasion in the early stage of puerperal sepsis, hysterectomy as an abortive measure of treatment is impracticable. Antistreptococcic serum is without value in the treatment of this disease. Puerperal infection being identical with ordinary wound infection should be considered from the standpoint of prophylaxis, and as sepsis has been eliminated from modern operative surgery, so should puerperal sepsis be reduced to the accident standard by the application of refined surgical technics.

LANCET.

November 3, 1906.

1. Gastrostaxis, or Oozing of Blood From the Mucous Membrane of the Stomach, By W. H. White.
2. Acute Duodenæ Perforation, By D. A. Power.
3. The Saccular Theory of Hernia and the Radical Operation, By R. H. Russell.
4. So Called Virulent Syphilis and Its Treatment, By F. J. Lambkin.
5. Interstitial Nephritis and Cirrhosis of the Suprarenal Capsules in an Infant Five Years Old, By G. Carpenter.
6. The Diagnosis and Localization of the Tumors of the Frontal Regions of the Brain, By T. G. Stewart.
7. Infantile Mortality and Goats' Milk, By W. Wright.
8. A Case of Actinomycosis of the Cheek Cured by Potassium Iodide, with Suggestions as to the Possible Means of Infection and Spread of the Disease, By R. Knox.
9. The Spa Treatment of Cardiac Dilatation, By W. B. Jones.

1. **Gastrostaxis.**—White discusses the oozing of blood from the mucous membrane of the stomach, to which he gives the name "gastrostaxis." It occurs chiefly, but not solely, in women, and by older writers was thought to be due to vicarious menstruation. In the fatal cases the stomach and intestine show no lesion from which the blood came. The patients are usually thought to be suffering from gastric ulcer and are treated accordingly. It is not a disease of childhood nor of the later half of life; it is rarely fatal, and it usually gets well of its own accord. The chief symptoms are hæmatemesis, vomiting apart from the hæmatemesis, and pain in the region of the stomach. Its cause is very obscure. It is certainly not due to vicarious menstruation. It has been thought to be due to chlorosis; but two of the writer's patients were men, and several of the women showed no symptoms or signs of chlorosis. It is of comparatively frequent occurrence; so much so, that it may account for the generally accepted view that ulcer of the stomach is more common in women than in men. The prognosis is good. Of 7,500 post mortem examinations, only three were due to hæmatemesis from gastric oozing. The differential diagnosis from other causes of hæmatemesis, such as cirrhosis, heart disease, or cancer, is easy, but it is often very difficult or impossible to separate these cases from gastric ulcer unless the gastric ulcer has led to hourglass stomach, dilatation, tetany, or thickening. Sufferers from gastric ulcer are more apt to be wasted than those with gastrostaxis. The dyspeptic symptoms are probably less severe in cases of oozing. Operation should never be performed during the actual hæmorrhage, and it certainly should not be performed when there is no bleeding if the diagnosis of oozing is certain. While hæmorrhage is going on and for a short time afterwards, the patient should be kept in bed and given ice to suck. Transfusion is probably of little service, and the same is true of adrenalin. Ergot should never be given. The author gives iron perchloride in half drachm doses in glycerin. Calcium chloride may be given to increase the coagulability of the blood. In conclusion the author cites abstracts of twenty-nine illustrative cases.

2. **Acute Duodenal Perforation.**—Power reports a case of acute duodenal perforation and contrasts it with a case of acute indigestion. In both there is violent pain and vomiting, but in the latter there are no signs of collapse and the abdominal walls move freely with respiration, while in the former they are rigid and board-like. The prognosis in cases of duodenal perforation is bad and the average mortality is higher than that of perforation of the stomach. But where immediate operation is possible, recovery takes place in most instances. To wait means certain death for the patient. The cases are usually thought to be due to appendicitis, but there is often a tender spot with resistance high up over the site of the duodenum.

3. **Saccular Theory of Hernia.**—Russell is a firm believer in the saccular theory of hernia which rejects the view that hernia can ever be "acquired" in a pathological sense, and maintains that the presence of a developmental peritoneal diverticulum or sac is a necessary antecedent condition in every case of ordinary abdominal hernia. The acceptance of this theory has as natural results: (1) A single ætiology, with a fixed principle of treatment; (2) a single operation, the removal of the sac; (3) certainty of good result provided the operation has been performed faultlessly; (4) the recognition that if recurrence takes place it will be the result of an operative defect; and (5) the abolition of the truss except in cases in which operation is contraindicated or declined. It promises practically perfect results, but it imposes the three following conditions: 1. The surgeon shall concern himself with the peritoneofascial layer of the abdominal wall alone. 2. He shall be prepared for the recognition of any and every variety of hernial sac, and be ready with the appropriate measures for dealing with each. 3. He shall recognize that in the event of recurrence the fault lies with himself and not in the weakness of the patient's muscles.

4. **Virulent Syphilis.**—Lambkin holds that in the majority of cases of so called virulent syphilis there is present some well marked cause which influences the course of the disease for the worse. The following conditions, either singly or together, will generally be found to be associated in such cases: (1) Poor physique; (2) living under bad hygienic and generally debilitating circumstances; (3) malaria; (4) the presence of any organic disease, especially renal; (5) alcoholism; and (6) delayed or inefficient treatment. The most important of these conditions is probably the last. The author is strongly opposed to the view that mercury should not be given until the secondary symptoms have made their appearance. He obtains most excellent results from weekly intramuscular injections of either pure mercury or calomel. Most cases also require the most nourishing diet, and tonics of all sorts, especially sarsaparilla.

6. **Frontal Brain Tumors.**—Stewart tells us that in diagnosticating a tumor of the frontal region we have to rely on (a) the presence of the general symptoms of intracranial growth; (b) the presence of mental symptoms; and (c) the absence of focal signs pertaining to other regions of the brain. For localization we must study the nature of any convulsions which occur and be guided by the following signs: 1. Those homolateral to the tumor; (a) the earlier development and greater intensity of the optic neuritis; (b) the presence of a fine vibratory tremor in the extended limbs; (c) the presence of focal cranial nerve symptoms; and (d) the presence of local external signs. 2. Those contra-

lateral to the tumor; (a) diminution or loss of the superficial abdominal or epigastric reflexes; (b) the presence of an extensor or indefinite plantar response with increase of the deep reflexes; and (c) hemiparesis. Though one or more of the signs may be absent, yet the majority of cases of tumor of the frontal lobe can be accurately diagnosticated and localized, and there is no other region of the brain, except perhaps the cerebellum, in which surgical interference can be advised with a greater prospect of success, and with so little danger subsequently to the patient.

LA PRESSE MEDICALE.

October 27, 1906.

1. Examination of the Liver, By MAURICE LETULLE.
2. Hygiene of Light. Open Spaces; the Public Road; the Yard, By A. AUGUSTINE REY.

1. Examination of the Liver.—Letulle's article, which is abundantly illustrated, divides examination of the liver into four parts, inspection, palpation, percussion, and auscultation. Each of these forms a separate subject for consideration. By inspection is recognized changes of form on one or the other side of the body, by palpation is determined the consistence, form, and sensitiveness of the liver, by percussion its topography is marked out, and by auscultation the condition of the adjacent pleura and lung is learned. In difficult, or abnormal, cases radiography may be employed.

October 31, 1906.

1. Inundation of the Peritonæum in the Course of a Tubal Abortion, By LOUIS BAZY.
2. Some Preparations of Hammamelis Virginica, By ALFRED MARTINET.
3. Do the Lymphatic Glands Form a Means of Defense for the Organism? By R. ROMME.

1. Inundation of the Peritonæum in the Course of a Tubal Abortion.—Bazy reports a case of tubal pregnancy which ruptured and flooded the abdominal cavity with blood without rupture of the tube. This he calls a tubal abortion. From a clinical point of view an early diagnosis of tubal pregnancy in such a case is difficult if not impossible, because of an absence of symptoms, until the sudden onset of an intraperitoneal hæmorrhage, which calls for surgical intervention. Anatomically very slight changes indeed are induced in the tube by the development of such a pregnancy, and from the pathogenic point of view it is probable that the part played by infection is to favor hæmorrhage and to maintain the absence of contractility of the muscular tunic.

2. Hammamelis Virginica.—The tonic, astringent, hæmostatic, antiseptic, and vascular sedative properties of this drug are exemplified by Martinet in a series of prescriptions, recommended by different authors for various purposes.

LA SEMAINE MEDICALE.

October 31, 1906.

Appendicitis or Typhoid Fever? By F. LEJARS.

Appendicitis or Typhoid Fever?—Lejars points out how difficult, and at times impossible, it may be to make a differential diagnosis between these two diseases, and at the same time of what serious importance it is that the correct diagnosis should be made. He uses for his text a case in which he operated for appendicitis at the request of a very conscientious physician, and then discovered it to be one of typhoid.

MUENCHENER MEDIZINISCHE WOCHENSCHRIFT.

October 30, 1906.

1. Intravenous Treatment with Digitalis and Strophanthin, By VELDEN.
2. Digalen (*Digitoxinum Solubile, Cloetta*), By VEIEL.
3. The Biological Signification of the Photoactivity of the Blood and Its Relation to the Vital Action of Light and Heat, By SCHLÄPFER.
4. Components of Tetanus Toxine by Application of Anhydrous Hydrochloric Acid Gas at the Temperature of Fluid Air, By WOLFF-EISNER.
5. The Influence of the X Rays on the Ovaries and Pregnant Uterus of Guinea Pigs, By LENGFELLNER.
6. The Early Diagnosis of Typhus, By MEYERSTEIN.
7. Proteolytic Action of Intracellular Ferments, By BÄR.
8. Contribution to the Use of Alcohol in Pneumonia, By FOCK.
9. Apparent Stenosis of the Pylorus by a Chronic Suprapapillar Ulcer of the Duodenum; Postoperative Parotitis, By ECKERSDORFF.
10. Aneurysm of the Posterior Wall of the Left Ventricle, By RIEHL.
11. The Work of the Station for the Observation of Cholera at Cüstrin During September, October, and November, 1905, By PETERS.
12. Critical Examination of the Protozoalike Microorganisms Found According to O. Schmidt in Malignant Tumors, By SCHUBERG.
13. Are the Coal Mines the Disseminators of Cerebrospinal Meningitis? By LINDEMANN.

2. Digalen.—Veiel records a number of cases in which he has employed digalen with satisfaction, and declares that when given intravenously it is a very valuable remedy in acute weakness of the heart, the use of which should not be neglected. It has also the great advantage that it can be given immediately before the crisis in infectious diseases.

4. Components of Tetanus Toxine.—Wolff-Eisner finds by experiment that by treating tetanus toxine with anhydrous hydrochloric acid gas at the temperature of liquid air, its fatal action can be separated from its spasm producing action. This is a matter of the greatest importance with regard to the immunization of the body without doing harm.

5. The Influence of the X Rays on the Ovaries and Pregnant Uterus of Guinea Pigs.—Lengfellner has shown that prolonged exposure to the x rays is fatal to the fœtus of a guinea pig a few days before it should be born, and that short exposures have a distinct influence on its viability. He also found changes produced in the ovaries of the female guinea pigs, not only in those which were pregnant, but also in those which were not. From these facts he deduces the proposition that a pregnant woman runs a great danger of destroying the life of her child when she is exposed to the x rays either once for a long time, or repeatedly during short sittings, and that a woman who is not pregnant runs a similar danger of being rendered either temporarily or permanently sterile.

8. Use of Alcohol in Pneumonia.—Fock says that systematic observations in regard to the benefit or the reverse obtained from the use of alcohol in pneumonia have not been made. Many patients recover who have used alcohol during the disease, or during convalescence, or both, and on the other hand, many recover who have not used it at all. The two extreme views held are that alcohol is not only unnecessary, but always harmful, and that while it may not be absolutely necessary the patients do better when it is used. The golden mean between these two extreme views has not yet been determined, and it can be ascertained only by a systematic statistical investigation of a great number of cases.

9. Apparent Stenosis of the Pylorus Due to a Chronic Suprapapillar Ulcer of the Duodenum; Postoperative Parotitis.—Eckersdorff records a case of this nature. An exploratory laparotomy failed to reveal the cause of the pyloric stenosis, although gastroenterostomy was performed. Recovery from the operation was complicated by the occurrence of acute parotitis, putrid bronchitis, and commencement of gangrene of both lungs which caused the death of the patient in a few days. At autopsy an old cicatricial ulcer was found at the beginning of the duodenum, where it had occasioned the stenosis. There was a retention cyst of the pancreatic duct, partial subacute peritonitis, putrid

bronchitis, and commencing gangrene of both lungs, acute purulent parotitis on one side, chronic catarrh of the stomach and intestine, old healed tuberculosis at the apices of the lungs, cicatricial kidneys, and embolic infarcts of the spleen and pleura.

12. **Critical Examination of the Protozoalike Microorganisms Found by O. Schmidt in Malignant Tumors.**—Schuberg is unable to confirm the theory advanced by Schmidt that malignant tumors are produced by these protozoa.

13. **Are the Coal Mines the Disseminators of Cerebrospinal Meningitis?**—Lindemann advances arguments in opposition to the ground taken recently by Dr. Jehle that the coal mines are the breeding grounds of this disease. The points taken refer mainly to local conditions in certain mines. One is the small number of young miners who are attacked.

ZENTRALBLATT FUER GYNAEKOLOGIE

October 27, 1906.

1. Gonococcus Peritonitis in the Puerperium; Laparotomy; Drainage; Recovery, By G. Leopold.
2. Puerperal Fever in 1905, By T. Thies.
3. Röntgen Ray Treatment for Severe Menorrhagia Due to Myomata, By Görl.

1. **Gonococcus Peritonitis.**—Leopold records the case of a multiparous woman who was normally delivered. Immediately after labor, the abdomen was extremely sensitive to pressure, although uterine contraction was good. Gonococci were demonstrated in the secretions of the urethra and of the vagina. On the sixth day, there was a sudden rise of temperature, with the physical signs of a beginning peritonitis. Laparotomy was performed, and a large quantity of turbid fluid came from the depths. This fluid contained a pure culture of gonococci. The peritonitis disappeared within twenty-four hours, and the patient made a good recovery. Following the operation, for several days, the peritoneal cavity was washed out through the drainage tube with normal salt solution, until the fluid finally came away clear.

3. **Roentgen Rays for Menorrhagia.**—Görl considers the effect of the Röntgen ray upon uterine myomata which cause excessive menorrhagia. A patient of his, forty years of age, was subject to large losses of blood at each menstrual period. She had myomata of the uterus and was also a bleeder so that operative intervention was out of the question. She was treated with the Röntgen rays, four to five times weekly for four weeks, with a most satisfactory result. The author considers that symptoms of the menopause induced by the rays offer no objection to a case of this kind, since surgical measures would bring about this condition any way.

ROUSSKY VRATCH.

October 7, 1906.

1. The Minute Structure of the Brain in Animals. A New Stain, By V. E. Larionoff.
2. On the Primary Atrophies of the Liver, By S. P. Schueninoff.
3. Some Data on the Cryoscopy of the Urine in Diabetes (*Concluded*), By G. S. Zimnitzki.
4. Experimental and Clinical Data on a Specific Antituberculous Serum, By S. D. Neporozhni.
5. Thrombosis of the Portal Vein, By G. N. Magakian.

1. **Method of Preparing Specimens of the Brain.**—Larionoff says that the schemes showing the minute structure of the brain which were published by Meynert, Ranion y Cajal, Betz, etc., are not correct, and that the actual structure is far more complex. Different stains bring out different structures, and various chemicals used in preparing microscopical sections hurt the tissues, alter the cells, and in some cases destroy them. Thus alcohol which is used for dehydrating and xylol which serves to dissolve Canada balsam are both injurious, as are the various essential oils used for clearing. He recommends the following simplified Golgi's method: The freshly removed brain is placed in ten per cent. formalin. After three or four days the convolution which is wanted is removed, with its pia mater—or an entire hemisphere of the brain of the cat or dog can be taken—and is placed in a smaller jar with a solution of from one half to two per cent. of potassium bichromate, in which it is kept in a thermostat at 27° or 30° C. for from four to seven days. The weaker solutions of bichromate are better. The fluid is now poured off and in its place the jar is filled with a three per cent. solution of silver nitrate. The jar is again kept in the thermostat at the same temperature for a similar length of time. The specimen is now removed, blotted in filter paper and is wrapped in paper in the microtome, where it is cut in seventy or ninety per cent. alcohol. The preparation should not be washed in water during any of these steps. The specimen can also be kept longer in fresh silver solution; for several days, at ordinary temperature. If it has become overstained, it should be placed in two or three per cent. of formalin. To stain the white matter the process must be prolonged, for twenty days, at 25° to 30° C., and Müller's fluid should be added to the bichromate. From these specimens large sections of brain may be prepared by imbedding in sandarac varnish and in xylol balsam between two glass plates.

3. **Cryoscopy of the Urine in Diabetes.**—Zimnitzki records some interesting observations on the urine of diabetic patients. He studied nine cases of diabetes, in seven of which there was a marked polyuria. In eight cases of the nine the cryoscopic figure was unusually high, while the difference between the total molecules excreted and the molecules of sodium chloride excreted was considerable. This showed that there was an excessive number of metabolic molecules elaborated by the kidneys, and that the renal epithelium was under a strain of overwork. This is necessary in view of the overproduction of effete materials in diabetes. In some cases the work of the kidneys as measured by cryoscopy was found to be four or five times the normal standard. The marked hypertrophy is of course referable to the increased labor performed by the kidneys. Another interesting result of his observations was that so long as the relation between the freezing point of the urine and the blood remained the same, the patient's condition was fairly good. When the strain on the kidneys began to tell and when the concentration of the blood began to become more marked, the patient became comatose and did badly.

4. **Antituberculosis Serum.**—Neporozhni presents a preliminary report upon an antituberculosis serum which he has been preparing for the past two and a half years by immunizing dogs. The method which he used at first consisted in evoking in these animals an artificial mononuclear leucocytosis, following Metchnikoff's idea that the mononuclear leucocytes are the most powerful foes of the tubercle bacillus to be found in the normal body. He found, however, that the mononucleosis which was thus induced did not help much in immunizing the animals, and has come back to the injection of an "endotoxine" of the tubercle bacillus, the method of obtaining which he does not give. By injecting this endotoxine he was able both to immunize and to cure tuberculosis in guinea pigs and in dogs. The serum is now used in man in two sanatoria in Russia. Thus far the results show that the serum is harmless in man; that the patients improve after the injections, increase in weight, etc. Their catarrhal symptoms improve or disappear; their fever falls when the injections are used, and returns when the treatment is interrupted. Patients with lupus and with tuberculous glands do especially well.

5. **Thrombosis of the Portal Vein.**—Magakian presents a complete analysis of this affection, citing two

cases of his own and collecting twenty-four cases from literature. In four cases the cause was syphilis; in three, chronic peritonitis; in one, gallstone disease; in one, enlarged glands in the portal region. Most of these act by compressing the vein. Many cases show no definite ætiology. In a number of cases, including one of the two reported in this article, there was so much thickening in the walls of the vein, that the cause lay probably in a primary disease of the vessel. The disease resembles gastric ulcer, often setting in with pain in the epigastrium, with hæmatemesis, and with bloody stools, but further observation clears up the case. Thrombosis of the portal vein also resembles hepatic cirrhosis, but the onset is sudden, the ascites comes on rapidly, and recurs frequently. The prognosis is bad, save when there is a syphilitic process (gumma). Collateral channels are formed, and thus sufficient portal circulation is secured. Talma's operation can be performed for this purpose.

Letters to the Editors.

THE WORD PHRENITIS.

126 EAST TWENTY-NINTH STREET,
NEW YORK, *October 27*, 1906.

To the Editors: Dr. B. M. Randolph's letter, in your issue of October 27th, reminds me of attacks I had to contend with many years ago when I began to call attention to corruptions in medical onomatology. These attacks afforded opportunity to demonstrate the more emphatically errors which had caused confusion in our literature.

I have never proposed and should never propose to make "modern Greek" the basis of a reformed medical nomenclature, for the simple reason that there exists nothing modern in the scientific onomatology of our Greek brethren. They have retained all the classical terms, and when new formations for new conceptions had to be created they have always been most scrupulous to form them from classical Greek. Nothing is more detestable to Greek men of science than, for instance, to employ words in scientific language which originated in the Byzantine, or Græco-Roman, period. I should be thankful to Dr. Randolph for pointing out a single exception to this rule.

Dr. Randolph calls Herodotus the prototype of Münchhausen (not Münchausen, as it is spelled in the correspondence). Every classical scholar—and others are not well able to judge—I presume will agree with me that Herodotus's work, the work of the oldest Greek historian, belongs to the most precious monuments of ancient literature, and that his writings are full of sublimity and grace, of powerful and noble simplicity which we have to admire. The faithfulness and exactness with which he wrote history without glittering ornamentation has secured for him up to the present time the highest esteem of the scholars of the whole civilized world. I should be very much obliged to Dr. Randolph if he could quote a *serious* writer who has judged otherwise. *Es liebt die Welt das Strahlende zu schwärzen und das Erhabne in den Staub zu ziehn!* says Schiller.

What Dr. Randolph says about phren as having been the name for diaphragm and the statement that the diaphragm was thought to be the seat of the soul can be found in the lexicon. It was Homer's poetical term for mind, soul, heart, and will power, and also for viscera in general, exactly as other ancient writers—as we learn in the recently published beautiful book of William H. Thomson's *Brain and Personality*—spoke of the kidneys in the same sense. Diaphragma is Attic, the only *anatomical* name in Greek for diaphragm since Attic became the national language. I may add that splanchnon in poetical language meant in the remotest periods as well as it means at present all that was meant by phren or its plural, phrenes.

Phrenitis is used by Hippocrates, not only in the sense of an acute inflammation of the brain, but also for delirium, for frenzy. Dr. Randolph quotes Hooper, Dunglison, Gould, Quain, but not Foster, whose dictionary has been spoken of by Dr. Leonardos, the director of the Museum of Inscriptions of Athens, a graduate in medicine of a German university, as the most complete and most reliable of all the dictionaries ever published in any country. A higher authority, I think, cannot be found to judge a medical lexicon than Dr. Leonardos. According to Foster, phrenitis is: 1, Encephalitis; 2, meningitis; 3, frenzy, acute delirium. And we shall see why it can mean all this when we come to speak on the suffix "itis." I am quite familiar with the French language, and will challenge Dr. Randolph to contradict me, if he can, when I say that phrenitis can only be translated: frénésie, délire, démence, folie furieuse, when scientific language is employed. If, however, French physicians understand by phrénite inflammation of the diaphragm, they are unscientific and cause confusion, for phren is—these two thousand and four hundred years—not the anatomical name for diaphragm any more. Habeant sibi!

I did not trust my eyes when I read in the *New York Medical Journal*, edited these twenty-seven years by Dr. Foster, that—according to Dr. Randolph—the termination "itis" should mean inflammation. I had the honor of being connected with the latest edition of a German medical lexicon. One of the editors was a distinguished professor of medicine of a German university, another a distinguished professor of philology of another German university. Dr. Leonardos and myself were collaborators. In this dictionary is given an exhaustive treatise on the suffix "itis," in which are mentioned 400 words in which the suffix "itis" would not possibly signify inflammation. It would require more than two columns of this journal to give the whole etymology, but this is not required, since Dr. Foster himself has explained distinctly that "itis" is not attached to mean inflammation, although it can under certain circumstances mean inflammation. To be brief, it means an exaggerated participation of the conception expressed in the word to which it is attached. If itis meant inflammation, ammitis would be an inflamed sand stone and hæmatitis inflamed blood. Dr. Randolph will admit how corrupt interpretation must lead to ridiculous and also to serious consequences. If some of the American, of the German, of the French physicians have, as Dr. Randolph says, accepted this suffix as meaning inflammation, they are unscientific as regards nomenclature. Habeant sibi.

Dr. Randolph says: "I hope I shall see the day when the only scientists using it (the word phrenitis) will be the phrenologists." Does Dr. Randolph mean a new specialty, diaphragm doctors?

But to conclude, I beg to ask Dr. Randolph to give us his interpretation of the word psychosis, which I can translate in true scientific way only with action to animate, to enliven, or animation, inspiration, infatuation.

A. ROSE.

Proceedings of Societies.

MORRISTOWN (N. J.) MEDICAL CLUB.

Meeting of June, 1906.
Dr. A. A. LEWIS in the Chair.

The Insanity of Adolescence.—Dr. C. C. BELING read a paper with this title (see page 1024, November 24, 1906).

Dr. B. D. EVANS said that the paper dealt with a form of mental derangement which must necessarily come under the observation, sooner or later, of every practi-

tioner of medicine. For that reason it was an extremely interesting subject to those who were in general practice. One could not very well avoid the responsibility which fell upon him when a case of dementia præcox, or adolescent insanity, came to his notice as family physician.

In the early evolution of the cases the patients were not the proper ones to be suddenly rushed off to a sanatorium or to a State institution for the insane. They presented nervous peculiarities which the family had a right to expect the physician to treat intelligently. He was naturally in possession of facts which enabled him to lend valuable assistance and often to give that relief which would make it unnecessary to place upon the family the stigma of committing a person so afflicted to an institution. He said the "stigma" because, in spite of all our efforts, in spite of all that we did constantly to impress upon the public that insanity was a disease, as typhoid fever was a disease, as pneumonia was a disease, there still obtained in the public mind a feeling that insanity was something that reflected seriously upon the family in which it presented itself. It was unfortunate and unfair, but it was a fact. Gradually, through educational forces, this feeling was growing less, but it had not been dissipated.

Few physicians escaped having presented to them for care and treatment young men or young women, or girls of twelve to sixteen years of age, or boys of fifteen to twenty-one, who had suddenly shown mental peculiarities, mental irregularities amounting to mental derangement. Some might say: "I think the boy gets it naturally, because there is mental trouble in the family, either on the father's or mother's side or both; we must have an expert or put him in an institution for the insane." It was scarcely right for the speaker to advise against getting experts, but he deemed it consistent to advise against putting a young man or a young woman so afflicted in an institution when one might render very valuable aid himself and tide the patient safely over the sickness.

In the paper there had been mention of dementia præcox and adolescent insanity. Now, the English writers called it adolescent insanity, because it occurred in the adolescent or pubescent period of life, when the boy or girl was merging from boyhood or girlhood into manhood or womanhood. When such an individual was taking on new responsibility of a nervous character, of a physical character, and of a mental character, just as the bud came out from a protecting bulb, that which had protected it from the snowstorms of winter and the hail and rain storms of spring, it opened up with greater beauty, but with special susceptibility to adverse or opposing conditions. This stage of development carried with it dangers and pitfalls, and meant that the individual was in a developmental or critical evolutional period and taking on a radically different phase of life, and was more susceptible to the influence of environment, more susceptible to mental overwork, and especially in that critical evolutional period when the boy or girl was evolving out of a comparatively inactive period to take on a new aspect of life with that of sexual development, the function of procreation, demanding a new order of mind, higher order of mental elaboration, and the exhibitive characteristics of mind such as made us men and women in the true sense. At the same time they hurried us on to new responsibilities and dangers such as we must constantly remember to be incidental to the evolution or development of the sexual functions. It was a critical period for the boy, and the very children in which the highest order of mental activity was presented were those that were, under hereditary psychopathia, most susceptible to mental breakdown. So the term dementia præcox, which seemed to have been taken up and used most acceptably by Kraepelin, was a term signifying a precocious dementia characterized by a rapid evolution or development of the higher mental faculties which yielded or broke down under strain because of the hereditary taint which had interfered with the establishment of a substantial organization. It made no difference whether we called it the adolescent insanity of the English school, the sensory insanity of the Italian school, or the dementia præcox of Kraepelin's teaching. So far as the speaker was concerned, he thought the term adolescent insanity was a good one. The term dementia præcox did not appear to him an improvement; it was said to be a convenient term simply because certain other forms of mental disorder might and did develop during the adolescent period.

In a number of these cases of adolescent insanity menstruation ceased. The mothers as a rule put it down as positively the cause of the mental trouble and gave information usually after this manner: "Now, this girl has menstruated so many months or years and suddenly it stopped, and we all think it is a rush of blood to the head." These were common explanations with the laity. Mothers and friends had told every physician that they thought naturally that the amount of blood thrown off through menstruation had, upon the cessation of the menses, rushed to the head and caused an abnormal condition of mind. Now, the fact of the matter was that menstruation was in a large sense a nervous function, and while it came along with the physical development, it came especially with the nervous development. It exhibited itself as a nervous development of the function of reproduction and coincident with the unfolding of the higher order of mental operations and possibilities.

In a disease which manifested itself by a lack of nervous tone, as in neurasthenic cases and in adolescent cases, there was the dominating influence of that particular function which was seriously attacked, and the function naturally ceased. When one built up the physical and the nervous elements in the patient the function was resumed. It was not the cessation of the function that caused mental derangement; it was the mental disturbance and loss of nerve tone that had caused the cessation of the function.

So far as the speaker's personal observations went, he believed that 95 per cent., if not 99.9 per cent., of all the cases of adolescent insanity had an hereditary basis. He did not mean that every case of adolescent insanity signified that the father or mother of the patient was insane, but he did mean to say that there had been, in some form, in the direct line of transmission in the family on the father's side or on the mother's side, disease which had caused a weakened nervous organization in the offspring, which weakened nervous organization broke down under the critical ordeals which were incidental to the transition of the person from boyhood or girlhood into maturity and into the more mature qualifications for carrying on the function of reproduction. Numerous diseases in the parents later manifested themselves in the form of mental or nervous derangement in the offspring. It might be epilepsy, it might be tuberculous disease, or it might be chorea or neurasthenia with which the parents at the time of the conception were suffering; thus in the direct line of transmission a weakened nervous organization became the inheritance of the offspring.

In a court case with which he had beeen connected in the capacity of an expert witness, he had had to consider the case of a woman whose mother had epilepsy, whose father was an habitual drunkard, and whose grandparents exhibited nervous peculiarities. She exhibited in the period of puberty and adolescence mental peculiarities which placed her clearly along with the adolescent insanity group. She had what Dr. Beling had spoken of—a limited field of vision, hemianæsthesia, and later on hallucinations and delusions,

cases of his own and collecting twenty-four cases from literature. In four cases the cause was syphilis; in three, chronic peritonitis; in one, gallstone disease; in one, enlarged glands in the portal region. Most of these act by compressing the vein. Many cases show no definite ætiology. In a number of cases, including one of the two reported in this article, there was so much thickening in the walls of the vein, that the cause lay probably in a primary disease of the vessel. The disease resembles gastric ulcer, often setting in with pain in the epigastrium, with hæmatemesis, and with bloody stools, but further observation clears up the case. Thrombosis of the portal vein also resembles hepatic cirrhosis, but the onset is sudden, the ascites comes on rapidly, and recurs frequently. The prognosis is bad, save when there is a syphilitic process (gumma). Collateral channels are formed, and thus sufficient portal circulation is secured. Talma's operation can be performed for this purpose.

Letters to the Editors.

THE WORD PHRENITIS.

126 EAST TWENTY-NINTH STREET,
NEW YORK, *October 27*, 1906.

To the Editors: Dr. B. M. Randolph's letter, in your issue of October 27th, reminds me of attacks I had to contend with many years ago when I began to call attention to corruptions in medical onomatology. These attacks afforded opportunity to demonstrate the more emphatically errors which had caused confusion in our literature.

I have never proposed and should never propose to make "modern Greek" the basis of a reformed medical nomenclature, for the simple reason that there exists nothing modern in the scientific onomatology of our Greek brethren. They have retained all the classical terms, and when new formations for new conceptions had to be created they have always been most scrupulous to form them from classical Greek. Nothing is more detestable to Greek men of science than, for instance, to employ words in scientific language which originated in the Byzantine, or Græco-Roman, period. I should be thankful to Dr. Randolph for pointing out a single exception to this rule.

Dr. Randolph calls Herodotus the prototype of Münchhausen (not Münchausen, as it is spelled in the correspondence). Every classical scholar—and others are not well able to judge—I presume will agree with me that Herodotus's work, the work of the oldest Greek historian, belongs to the most precious monuments of ancient literature, and that his writings are full of sublimity and grace, of powerful and noble simplicity which we have to admire. The faithfulness and exactness with which he wrote history without glittering ornamentation has secured for him up to the present time the highest esteem of the scholars of the whole civilized world. I should be very much obliged to Dr. Randolph if he could quote a *serious* writer who has judged otherwise. *Es liebt die Welt das Strahlende zu schwärzen und das Erhabne in den Staub zu ziehn!* says Schiller.

What Dr. Randolph says about phren as having been the name for diaphragm and the statement that the diaphragm was thought to be the seat of the soul can be found in the lexicon. It was Homer's poetical term for mind, soul, heart, and will power, and also for viscera in general, exactly as other ancient writers—as we learn in the recently published beautiful book of William H. Thomson's *Brain and Personality*—spoke of the kidneys in the same sense. Diaphragma is Attic, the only *anatomical* name in Greek for diaphragm since Attic became the national language. I may add that splanchnon in poetical language meant in the remotest periods as well as it means at present all that was meant by phren or its plural, phrenes.

Phrenitis is used by Hippocrates, not only in the sense of an acute inflammation of the brain, but also for delirium, for frenzy. Dr. Randolph quotes Hooper, Dunglison, Gould, Quain, but not Foster, whose dictionary has been spoken of by Dr. Leonardos, the director of the Museum of Inscriptions of Athens, a graduate in medicine of a German university, as the most complete and most reliable of all the dictionaries ever published in any country. A higher authority, I think, cannot be found to judge a medical lexicon than Dr. Leonardos. According to Foster, phrenitis is: 1, Encephalitis; 2, meningitis; 3, frenzy, acute delirium. And we shall see why it can mean all this when we come to speak on the suffix "itis." I am quite familiar with the French language, and will challenge Dr. Randolph to contradict me, if he can, when I say that phrenitis can only be translated: frénésie, délire, démence, folie furieuse, when scientific language is employed. If, however, French physicians understand by phrénite inflammation of the diaphragm, they are unscientific and cause confusion, for phren is—these two thousand and four hundred years—not the anatomical name for diaphragm any more. Habeant sibi!

I did not trust my eyes when I read in the *New York Medical Journal*, edited these twenty-seven years by Dr. Foster, that—according to Dr. Randolph—the termination "itis" should mean inflammation. I had the honor of being connected with the latest edition of a German medical lexicon. One of the editors was a distinguished professor of medicine of a German university, another a distinguished professor of philology of another German university. Dr. Leonardos and myself were collaborators. In this dictionary is given an exhaustive treatise on the suffix "itis," in which are mentioned 400 words in which the suffix "itis" would not possibly signify inflammation. It would require more than two columns of this journal to give the whole etymology, but this is not required, since Dr. Foster himself has explained distinctly that "itis" is not attached to mean inflammation, although it can under certain circumstances mean inflammation. To be brief, it means an exaggerated participation of the conception expressed in the word to which it is attached. If itis meant inflammation, ammitis would be an inflamed sand stone and hæmatitis inflamed blood. Dr. Randolph will admit how corrupt interpretation must lead to ridiculous and also to serious consequences. If some of the American, of the German, of the French physicians have, as Dr. Randolph says, accepted this suffix as meaning inflammation, they are unscientific as regards nomenclature. Habeant sibi.

Dr. Randolph says: "I hope I shall see the day when the only scientists using it (the word phrenitis) will be the phrenologists." Does Dr. Randolph mean a new specialty, diaphragm doctors?

But to conclude, I beg to ask Dr. Randolph to give us his interpretation of the word psychosis, which I can translate in true scientific way only with action to animate, to enliven, or animation, inspiration, infatuation.

A. ROSE.

Proceedings of Societies.

MORRISTOWN (N. J.) MEDICAL CLUB.

Meeting of June, 1906.
Dr. A. A. LEWIS in the Chair.

The Insanity of Adolescence.—Dr. C. C. BELING read a paper with this title (see page 1024, November 24, 1906).

Dr. B. D. EVANS said that the paper dealt with a form of mental derangement which must necessarily come under the observation, sooner or later, of every practi-

tioner of medicine. For that reason it was an extremely interesting subject to those who were in general practice. One could not very well avoid the responsibility which fell upon him when a case of dementia præcox, or adolescent insanity, came to his notice as family physician.

In the early evolution of the cases the patients were not the proper ones to be suddenly rushed off to a sanatorium or to a State institution for the insane. They presented nervous peculiarities which the family had a right to expect the physician to treat intelligently. He was naturally in possession of facts which enabled him to lend valuable assistance and often to give that relief which would make it unnecessary to place upon the family the stigma of committing a person so afflicted to an institution. He said the "stigma" because, in spite of all our efforts, in spite of all that we did constantly to impress upon the public that insanity was a disease, as typhoid fever was a disease, as pneumonia was a disease, there still obtained in the public mind a feeling that insanity was something that reflected seriously upon the family in which it presented itself. It was unfortunate and unfair, but it was a fact. Gradually, through educational forces, this feeling was growing less, but it had not been dissipated.

Few physicians escaped having presented to them for care and treatment young men or young women, or girls of twelve to sixteen years of age, or boys of fifteen to twenty-one, who had suddenly shown mental peculiarities, mental irregularities amounting to mental derangement. Some might say: "I think the boy gets it naturally, because there is mental trouble in the family, either on the father's or mother's side or both; we must have an expert or put him in an institution for the insane." It was scarcely right for the speaker to advise against getting experts, but he deemed it consistent to advise against putting a young man or a young woman so afflicted in an institution when one might render very valuable aid himself and tide the patient safely over the sickness.

In the paper there had been mention of dementia præcox and adolescent insanity. Now, the English writers called it adolescent insanity, because it occurred in the adolescent or pubescent period of life, when the boy or girl was merging from boyhood or girlhood into manhood or womanhood. When such an individual was taking on new responsibility of a nervous character, of a physical character, and of a mental character, just as the bud came out from a protecting bulb, that which had protected it from the snowstorms of winter and the hail and rain storms of spring, it opened up with greater beauty, but with special susceptibility to adverse or opposing conditions. This stage of development carried with it dangers and pitfalls, and meant that the individual was in a developmental or critical evolutional period and taking on a radically different phase of life, and was more susceptible to the influence of environment, more susceptible to mental overwork, and especially in that critical evolutional period when the boy or girl was evolving out of a comparatively inactive period to take on a new aspect of life with that of sexual development, the function of procreation, demanding a new order of mind, higher order of mental elaboration, and the exhibitive characteristics of mind such as made us men and women in the true sense. At the same time they hurried us on to new responsibilities and dangers such as we must constantly remember to be incidental to the evolution or development of the sexual functions. It was a critical period for the boy, and the very children in which the highest order of mental activity was presented were those that were, under hereditary psychopathia, most susceptible to mental breakdown. So the term dementia præcox, which seemed to have been taken up and used most acceptably by Kraepelin, was a term signifying a precocious dementia characterized by a rapid evolution or development of the higher mental faculties which yielded or broke down under strain because of the hereditary taint which had interfered with the establishment of a substantial organization. It made no difference whether we called it the adolescent insanity of the English school, the sensory insanity of the Italian school, or the dementia præcox of Kraepelin's teaching. So far as the speaker was concerned, he thought the term adolescent insanity was a good one. The term dementia præcox did not appear to him an improvement; it was said to be a convenient term simply because certain other forms of mental disorder might and did develop during the adolescent period.

In a number of these cases of adolescent insanity menstruation ceased. The mothers as a rule put it down as positively the cause of the mental trouble and gave information usually after this manner: "Now, this girl has menstruated so many months or years and suddenly it stopped, and we all think it is a rush of blood to the head." These were common explanations with the laity. Mothers and friends had told every physician that they thought naturally that the amount of blood thrown off through menstruation had, upon the cessation of the menses, rushed to the head and caused an abnormal condition of mind. Now, the fact of the matter was that menstruation was in a large sense a nervous function, and while it came along with the physical development, it came especially with the nervous development. It exhibited itself as a nervous development of the function of reproduction and coincident with the unfolding of the higher order of mental operations and possibilities.

In a disease which manifested itself by a lack of nervous tone, as in neurasthenic cases and in adolescent cases, there was the dominating influence of that particular function which was seriously attacked, and the function naturally ceased. When one built up the physical and the nervous elements in the patient the function was resumed. It was not the cessation of the function that caused mental derangement; it was the mental disturbance and loss of nerve tone that had caused the cessation of the function.

So far as the speaker's personal observations went, he believed that 95 per cent., if not 99.9 per cent., of all the cases of adolescent insanity had an hereditary basis. He did not mean that every case of adolescent insanity signified that the father or mother of the patient was insane, but he did mean to say that there had been, in some form, in the direct line of transmission in the family on the father's side or on the mother's side, disease which had caused a weakened nervous organization in the offspring, which weakened nervous organization broke down under the critical ordeals which were incidental to the transition of the person from boyhood or girlhood into maturity and into the more mature qualifications for carrying on the function of reproduction. Numerous diseases in the parents later manifested themselves in the form of mental or nervous derangement in the offspring. It might be epilepsy, it might be tuberculous disease, or it might be chorea or neurasthenia with which the parents at the time of the conception were suffering; thus in the direct line of transmission a weakened nervous organization became the inheritance of the offspring.

In a court case with which he had beeen connected in the capacity of an expert witness, he had had to consider the case of a woman whose mother had epilepsy, whose father was an habitual drunkard, and whose grandparents exhibited nervous peculiarities. She exhibited in the period of puberty and adolescence mental peculiarities which placed her clearly along with the adolescent insanity group. She had what Dr. Beling had spoken of—a limited field of vision, hemianæsthesia, and later on hallucinations and delusions,

and, suffering under great ordeals, she killed her uncle and aunt, was tried for murder, and was acquitted on the ground of insanity.

The term dementia præcox had, to the speaker's mind, been too readily accepted by the American writers, and some of them seemed nearly to have gone wild about it. I had been discussing it with Dr. Powell, of Georgia, who was at the head of a large institution of about 2,800 patients, and he had said dementia præcox included so many different cases that it indicated that we were trying to get them all in under one name, and, if so, why not call it a psychosis and be done with it? So we who studied these things were at times inclined to the opinion that Kraepelin's school, in its enthusiasm to get so many forms grouped under one head, had made the subject less easy to understand, like cross indexes, in which one could get so much indexed that there was complication rather than simplification.

Dr. Beling had spoken of the outdoor treatment, with sunshine and exercise. The speaker thought such was the correct line of treatment. If one took up the study of biographies of the great men of this nation, one would find that those of the most magnificent mental poise spent much of the early part of their lives upon farms, taking part in the honest toil of farm life and thus getting all the benefits which came from it. Men whose early life was spent in the open air on the farm, in the fields, and among the trees with the sheep and cows, being up at sunrise and going to bed at sunset, breathing the pure air and getting plenty of healthful sleep, built up the foundation for a strong mind in a strong body. He would further find proportionately less insanity in these families. The percentage was very much less in those people whose lives were spent outdoors in the open air, taking advantage of the sunlight and all that went with judicious outdoor exercise.

The general practitioner who ushered the little one into the world, who watched its evolution day by day, step by step, saw it when it had a trifling cough, a little influenza, a croup, or scarlet fever, who knew the father and mother before it and was familiar with the family peculiarities which he might have been called in from time to time to treat, was peculiarly well equipped to guard such a child when the critical developmental periods threatened the integrity of the nervous and mental organization. It was he who should faithfully, conscientiously, and with self assurance in the early stages look after such cases, encouraged and supported by the feeling that he had equipped himself as the general practitioner should. The family physician should not, however, lose sight of the important fact that, in many forms of insanity, improper treatment at home for too great a length of time made subsequent recovery impossible, even under the best institutional care and treatment, but he did think adolescent insanity ought to be better understood by the general practitioner. Dr. Beling's paper was an excellent presentation of the subject, and should be published, so that the medical profession might have the benefit of it.

Book Notices.

Grundriss und Atlas der allgemeinen Chirurgie. Von Professor Dr. Georg Marwedel. Mit 28 farbigen Tafeln und 171 schwarzen Abbildungen nach Originalen von Maler Arthur Schmitson. München: J. F. Lehmann, 1905. (From Paul B. Hoeber, New York.) Pp. xviii-414. (Price, $3.)

This book, or rather compendium, is well divided into six parts, with a handy alphabetical index. The six parts treat of antisepsis and asepsis, of general and local anæsthesia, of wounds, of surgical infections, of tumors, and of surgical diseases of the vessels. The book is written as a guide for medical students, and in their hands it can easily take the place of the too voluminous textbooks, but it will also be welcomed by the general practitioner who has not made surgery his specialty, but who is often, especially in the country, called upon to perform minor surgical operations or to diagnosticate cases. The illustrations are well executed.

Eczema. By Samuel Horton Brown, M. D., Assistant Dermatologist, Philadelphia Hospital, etc. Philadelphia: P. Blakiston's Son and Co., 1906. Pp. 105.

While this little book contains nothing new, and is not even an exhaustive study of the subject, it does give fairly well a statement of the generally accepted facts in regard to eczema. Notwithstanding the author's rather audacious statement in his preface, namely, that "the physician who consults these pages will be agreeably surprised to find explicit directions for the care of the case, a novel feature in books devoted to this subject," he who has any one of the recent textbooks on diseases of the skin will not need to go to this one for guidance.

The first twenty-eight pages of the book are given to an outline of what is commonly taught in regard to eczema. Then follow sixty-one pages, giving the treatment of the disease and bristling with formulæ, many of which are ascribed to the author's Philadelphia colleagues. The final pages of the book concern themselves with the subject of so called seborrhœal eczema, which the author seems to regard as largely due to intestinal derangements. To the doctor who wants a short account of eczema and many prescriptions to "try," this little book will appeal, and for the author's sake let us hope there will be many such.

BOOKS, PAMPHLETS, ETC., RECEIVED.

A Textbook of Genitourinary Diseases. Including Functional Sexual Disorders in Man. By Dr. Leopold Casper, Professor in the University of Berlin. Translated and edited by Charles W. Bonney, B. L., M. D., Assistant Demonstrator of Anatomy, Jefferson Medical College, etc. Philadelphia: P. Blakiston's Son & Co., 1906.

Essays in Pastoral Medicine. By Austin O'Malley, M. D., Ph. D., LL. D., Pathologist and Ophthalmologist to St. Agnes's Hospital, Philadelphia, and James J. Walsh, M. D., Ph. D., LL. D., Adjunct Professor of Medicine at the New York Polyclinic School for Graduates in Medicine, etc. New York: Longmans, Green & Co., 1906.

L'Ame et le système nerveux, hygiène et pathologie. Par Auguste Forel, ancien professeur de psychiatrie à l'université de Zurich. Paris: G. Steinheil, 1906.

Premier congrès de la Société internationale de chirurgie. Procès-verbaux, rapports et discussions. Publiés par le Dr. A. Depage, secrétaire général du Congrès. Bruxelles: Hayez, imprimeur des Académies royales de Belgique, 1906.

Upsala Läkareförenings Förhandlingar. Ny Följd Elfte Bandet. Supplement. Festskrift Tillegnad Olaf Hammarsten. Upsala: Akademiska Bokhandeln (C. J. Lundström), 1906.

Quarterly Bulletin of the Medical Department of Washington University, St, Louis, Mo. October, 1906. Pp. 80.

Transactions of the Obsterical Society of London. Vol. xlviii. Part 3. Edited by Herbert R. Spencer, M. D., and Robert Boxall, M. D., Senior Secretary.

Report on the Advancement of Pharmaceutical Chemistry and Therapeutics. By E. Merck. Volume xix. Darmstadt, 1906.

A Treatise on the Motor Apparatus of the Eyes. Embracing an Exposition of the Anomalies of the Ocular Adjustments and Their Treatment, with the Anatomy and Physiology of the Muscles and Their Accessories. By George T. Stevens, M. D., Ph. D. Philadelphia: F. A. Davis Company, 1906.

Die Tuberculose der menschlichen Gelenke sowie der Brustwand und des Schädels. Von Dr. Franz König. Berlin: August Hirschfeld, 1906.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending November 16, 1906:

Places.	Date.	Cases.	Deaths.
Smallpox—United States.			
Dist. of Columbia—Washington	Oct. 27-Nov. 3	1	
Illinois—Galesburg	Nov. 3-10	15	
Indiana—South Bend	Oct. 27-Nov. 10	16	
Iowa—Farley	Oct. 10-Nov. 10	14	
Louisiana—New Orleans	Nov. 3-10	5	
Maine—Bangor	Nov. 10	3	
Nebraska—Omaha	Oct. 24-31	1	
North Carolina—Greensboro	Oct. 27-Nov. 3	1	
Ohio—Findlay	Oct. 27-Nov. 3	1	imported
Wisconsin—Appleton	Oct. 27-Nov. 3	1	
Smallpox—Foreign.			
Africa—Cape Town	Sept. 22-Oct. 6	16	
Brazil—Bahia	Sept. 29-Oct. 13	5	
Brazil—Rio de Janeiro	Sept. 30-Oct. 14	3	
France—Paris	Oct. 13-27	6	
Greece—Athens	Oct. 6-13		1
India—Bombay	Oct. 9-16		2
India—Calcutta	Sept. 29-Oct. 6		4
Russia—Moscow	Oct. 6-20	4	1
Russia—Odessa	Oct. 6-20	12	1
Russia—St. Petersburg	Sept. 29-Oct. 13	6	2
Spain—Barcelona	Oct. 21-31		5
Spain—San Feliu de Guixols	Oct. 20-27		1
Turkey—Constantinople	Oct. 14-21		1
Yellow Fever—Foreign.			
Brazil—Rio de Janeiro	Sept. 30-Oct. 13	2	2
Cuba—Cruces	Nov. 12	3	
Cuba—Cuevitas	Nov. 7	1	
Cuba—Habana	Nov. 10-14	5	
Cuba—Santa Clara	Nov. 12	1	
Nicaragua—Managua	Oct. 6-13		1
Cholera—Foreign.			
India—Bombay	Oct. 9-16		6
India—Calcutta	Sept. 29-Oct. 6		20
India—Madras	Oct. 6-12		14
India—Rangoon	Sept. 29-Oct. 6		2
Plague—Foreign.			
Australia—Cairn	Sept. 8-15	2	
Austria—Trieste	Nov. 12		Present.
Brazil—Bahia	Sept. 29-Oct. 6	1	
Brazil—Rio de Janeiro	Sept. 30-Oct. 13	14	8
India—General	Sept. 29-Oct. 6	7,301	5,832
India—Bombay	Oct. 9-16		54
India—Calcutta	Sept. 29-Oct. 6		9
India—Rangoon	Sept. 15-Oct. 6		107

Public Health and Marine Hospital Service:

List of Changes of Stations and Duties of Commissioned and Noncommissioned Officers of the Public Health and Marine Hospital Service, for the seven days ending November 14, 1906:

AMESSE, J. W., Passed Assistant Surgeon. Granted extension of leave of absence for five days.

COFER, L. E., Passed Assistant Surgeon. Granted leave of absence for one month and eight days, from November 21, 1906.

FRICK, JOHN, Acting Assistant Surgeon. Granted leave of absence for thirty days, from December 1, 1906.

FROST, W. H., Assistant Surgeon. Granted leave of absence for one day, November 4, 1906.

GASSAWAY, J. M., Surgeon. Granted extension of leave of absence for five days.

GEDDINGS, H. D., Assistant Surgeon General. Directed to proceed to Ellis Island, N. Y., for special temporary duty, upon completion of which to rejoin his station.

GOLDBERGER, JOSEPH. Passed Assistant Surgeon. Granted leave of absence for twenty-one days, to be taken *en route* from Mexico City to Washington, D. C.

KEEN, WALTER H., Pharmacist. Granted leave of absence for thirty days, from December 1, 1906.

LONG, H. D., Assistant Surgeon. Temporarily relieved from duty at Ellis Island, N. Y., and directed to proceed to Washington, D. C., for temporary assignment to the Government Hospital for the Insane.

ROGERS, EDWARD, Pharmacist. Temporarily relieved from duty at Stapleton, N. Y., and directed to proceed to Washington, D. C., for temporary duty.

SAFFORD, M. V., Acting Assistant Surgeon. Granted leave of absence for ten days, from November 9, 1906.

SCOTT, E. B., Pharmacist. Granted leave of absence, without pay, for thirty days, from November 7, 1906.

SPRATT, R. D., Assistant Surgeon. Granted leave of absence for one month and ten days, from December 6, 1906.

STEGER, E. M., Assistant Surgeon. Directed to report to the Medical Officer in Command, Ellis Island, N. Y., for duty.

STONER, G. W., Surgeon. Granted leave of absence for three days, from November 7, 1906, under paragraph 189 of the Regulations.

STRAW, E. E., Acting Assistant Surgeon. Granted leave of absence for ten days, from October 15, 1906.

WALKER, R. T., Acting Assistant Surgeon. Granted leave of absence for five days, from November 25, 1906.

WALKER, T. DYSON, Acting Assistant Surgeon. Leave of absence granted Acting Assistant Surgeon Walker for ten days, from October 18, 1906, amended to read for eight days, from October 23, 1906.

WHITE, R. C., Acting Assistant Surgeon. Granted leave of absence for thirteen days, from September 28, 1906, on account of sickness.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, for the week ending November 17, 1906:

BAKER, DAVID, Captain and Assistant Surgeon. Ordered to proceed to Havana, Cuba, and report in person to the commanding general, Army of Cuban Pacification, for assignment to duty.

BARTLETT, C. J., First Lieutenant and Assistant Surgeon Granted fourteen days' leave of absence, beginning about November 2nd, with permission to visit the United States.

BEVANS, JAMES L., First Lieutenant and Assistant Surgeon. Detailed to duty with Provisional Government, Havana, Cuba.

CHURCH, JAMES R., Captain and Assistant Surgeon. Detailed to duty with Provisional Government, Havana, Cuba.

COWPER, H. W., First Lieutenant and Assistant Surgeon. Ordered to proceed from Camp Columbia to Caibarien, Cuba, for duty.

DUNCAN, WILLIAM A., First Lieutenant and Assistant Surgeon. On expiration of leave of absence, ordered to report to medical superintendent of Army Transport Service, San Francisco, Cal., for duty.

DUVAL, DOUGLAS F., Captain and Assistant Surgeon. Relieved from duty at Matanzas and ordered to Camp Columbia, Cuba, for duty.

EASTMAN, WILLIAM R., Captain and Assistant Surgeon. Relieved from duty at the Army General Hospital, Presidio, San Francisco, Cal., and ordered to Fort Lawton, Wash., for duty.

FOSTER, CHARLES L., First Lieutenant and Assistant Surgeon. Relieved from duty in the Army Transport Service, and ordered to report to the commanding general, Department of California, for assignment to duty at the Army General Hospital, Presidio, San Francisco, Cal.

GAPEN, NELSON, First Lieutenant and Assistant Surgeon. Left Columbus Barracks, Ohio, with troops to Presidio of Monterey, Cal.

GLENNAN, JAMES D., Major and Surgeon. Detailed as a member of the examining board at Fort Monroe, Va., during the absence on leave of Major W. Fitzhugh Carter, surgeon.

HALLOCK, H. M., Major and Surgeon. Left Madison Barracks, N. Y., *en route* to New York city for medical treatment.

HANSELL, H. S., First Lieutenant and Assistant Surgeon. Relieved from duty at Camp Columbia and ordered to Bejucal, Havana, for duty.

HESS, LOUIS T., Captain and Assistant Surgeon. Relieved from duty at Fort Lawton, Wash., and ordered to Fort Porter, N. Y., for duty.

JONES, HAROLD W., LOVE, ALBERT G., First Lieutenants and Assistant Surgeons. Relieved from temporary duty in

the Department of California and ordered to proceed on the first available transport sailing from San Francisco, Cal., to the Philippine Islands, and upon arrival at Manila, will report to the commanding general, Philippines Division, for assignment to duty.

LOVING, ROBERT C., First Lieutenant and Assistant Surgeon. Ordered to proceed from Newport News, Va., to West Point, N. Y., and report to the Superintendent of the U. S. Military Academy for duty.

MANLY, C. J., Captain and Assistant Surgeon. Ordered to proceed to Havana, Cuba, and report in person to the commanding general, Army of Cuban Pacification, for assignment to duty.

MILLER, E. W., First Lieutenant and Assistant Surgeon. Relieved from duty at Camp Columbia and ordered to Santa Clara, Cuba, for duty.

PATTERSON, R. U., First Lieutenant and Assistant Surgeon. In addition to his other duties will give medical attendance to the 2nd Battalion, Engineers, Camp Columbia, Havana, Cuba, during the illness of Captain Morrow, assistant surgeon.

RICHARDS, R. L., First Lieutenant and Assistant Surgeon. Relieved from duty at Caibarien and ordered to Santa Clara, Cuba, for duty.

RUSSELL, F. F., Captain and Assistant Surgeon. Relieved from duty at the Presidio of San Francisco, Cal., and ordered to repair to Washington, D. C., and report in person to the Surgeon General of the Army for temporary duty.

SMART, ROBERT, First Lieutenant and Assistant Surgeon. In addition to his other duties will give medical attention to the 17th and 18th Batteries, Field Artillery, during the absence of Captain Bartlett, assistant surgeon.

SNYDER, HENRY D., Major and Surgeon. Left Fort Sam Houston, Texas, on detached service with troops *en route* to Fort Reno, O. T.

STEER, SAMUEL L., Captain and Assistant Surgeon. Ordered to proceed to Havana, Cuba, and report in person to the commanding general, Army of Cuban Pacification, for assignment to duty.

STONE, JOHN H., Captain and Assistant Surgeon. Relieved from duty with the 11th Cavalry, Camp Columbia, and ordered to Matanzas, Cuba, for duty.

WEBB, WALTER D., Captain and Assistant Surgeon. Ordered to proceed from Camp Columbia to the United States and report in person to the Surgeon General of the U. S. Army.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending November 17, 1906:

ANGENY, G. L., Surgeon. Detached from the Naval Hospital, Naval Home, Philadelphia, and ordered to the Naval Station, Guam.

BROOKS, F. H., Assistant Surgeon. Ordered to the Naval Hospital, Mare Island, Cal.

CRANDALL, R. P., Surgeon. Detached from duty on the *Hancock* and ordered to the *Georgia*.

DE BRULER, J. P., Passed Assistant Surgeon. Detached from duty in the Bureau of Medicine and Surgery, Navy Department, and at the Naval Medical School Hospital, Washington, D. C., and ordered to the *Paducah*.

DE LANCY, C. H., Passed Assistant Surgeon. Detached from the *Paducah* and ordered to the *Hancock*, Navy Yard, N. Y.

EDGAR, J. M., Surgeon. Ordered to the *Wabash*, Navy Yard, Boston.

GARDNER, J. E., Medical Inspector. Detached from the *Wabash*, Navy Yard, Boston, and ordered home to await orders.

GEIGER, A. J., Passed Assistant Surgeon. Detached from the Naval Hospital, Mare Island, Cal., and ordered to the Naval Station, Guam.

JOHNSON, M. K., Surgeon. Detached from the *Iowa* and ordered home to await orders.

LEACH, PHILIP, Surgeon. When discharged from treatment at the Naval Hospital, New York, ordered to duty at the Naval Hospital, Mare Island, Cal.

MANCHESTER, J. D., Passed Assistant Surgeon. Detached from the *Hancock*, Navy Yard, New York, and ordered to the Naval Hospital, Naval Home, Philadelphia.

MEANS, V. C. B., Surgeon. Detached from duty at the Naval Recruiting Station, San Francisco, and ordered to duty at the Navy Yard, Mare Island, Cal.

SHOOK, F. M., Assistant Surgeon. Detached from duty at the Navy Yard, Mare Island, and ordered to duty at the Naval Hospital, Mare Island, Cal.

ZALESKY, W. J., Assistant Surgeon. Orders of October 31, 1906, modified; when detached from the *Newport*, ordered to the *Stringham*, for duty with the Third Torpedo Flotilla.

Births, Marriages, and Deaths.

Married.

ANDREWS—COOKE.—In Panama, on Monday, November 12th, Dr. Charles G. Andrews and Miss Mary F. Cooke.

BRONSON—SPEESE.—In New York, on Wednesday, August 8th, Dr. James Bronson, of Philadelphia, and Miss Helen Speese.

GOLDEN—VANNEMAN.—In Tioga, Pennsylvania, on Wednesday, November 14th, Dr. George Morris Golden and Miss Lovana Vanneman.

NEWLIN—SIMS.—In Philadelphia, on Wednesday, November 14th, Dr. Arthur Newlin and Miss Janet Cuyler Sims.

PADDOCK—PLUNKETT.—In Pittsfield, Massachusetts, on Thursday, November 8th, Dr. Bruce Whitman Paddock and Miss Elizabeth Kellogg Plunkett.

RANDOLPH—HARRISON.—In Philadelphia, on Wednesday, November 14th, Dr. Robert Carter Randolph, of Millwood, Virginia, and Miss Isabel W. Harrison.

SOMMERVILLE—KAESTNER.—In Philadelphia, on Saturday, November 10th, Dr. C. William Sommerville and Miss Flora V. Kaestner.

WARD—PRENTICE.—In Washington, D. C., on Thursday, July 19th, Dr. G. H. Ward, of New York, and Miss S. A. Prentice.

Died.

A'HERON.—In Hampton Junction, N. J., on Thursday, November 15th, Dr. Terence M. A'Heron, aged sixty years.

ALLEN.—In Youngstown, Ohio, on Monday, November 5th, Dr. George Edgar Allen, aged sixty-eight years.

ALLEN.—In Cuba, N. Y., on Thursday, November 8th, Dr. Otis Allen, aged sixty-eight years.

BALL.—In Toronto, Canada, on Saturday, November 3rd, Dr. William A. Ball, aged thirty-eight years.

BARRETT.—In Westboro, Massachusetts, on Wednesday, November 14th, Dr. William Marshall Barrett, aged eighty-four years.

BEACH.—In Santa Barbara, California, on Thursday, November 15th, Dr. Ferdinand Beach, of New York, aged sixty-nine years.

BRUNNER.—In New York, on Thursday, November 8th, Dr. William J. Brunner.

CRAIG.—In Atlantic City, N. J., on Wednesday, November 14th, Dr. Robert Craig, of Pittsburgh.

DAVIS.—In Augusta County, Virginia, on Friday, November 9th, Dr. T. Vanlear Davis, aged seventy-seven years.

ERMENTRAUT.—In Brooklyn, N. Y., on Wednesday, November 14th, Dr. John P. Ermentraut, aged sixty-eight years.

FRASER.—In Boston, on Monday, November 12th, Dr. Donald A. Fraser, aged fifty years.

GORDON.—In Newark, N. J., on Saturday, November 10th, Dr. Samuel H. Gordon, aged thirty-five years.

JENKINS.—In Plainfield, N. J., on Tuesday, November 13th, Dr. Olin L. Jenkins, aged sixty years.

LUCY.—In Buffalo, N. Y., on Monday, November 12th, Dr. Thomas F. Lucy.

RODMAN.—In Buffalo, N. Y., on Monday, November 12th, Dr. Harry Heth Rodman.

SMITH.—In Brooklyn, N. Y., on Saturday, November 3rd, Dr. Ellen Goodell Smith, aged seventy-one years.

WALL.—In Winchester, Virginia, on Saturday, November 10th, Dr. Asa Wall, aged seventy-six years.

New York Medical Journal

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Original Communications.

EXOPHTHALMIC GOITRE FROM THE STANDPOINT OF SERUM THERAPY.

BY JAMES EWING, M. D.,
New York,
(From the Department of Pathology, Cornell University Medical College.)

The attempt to favorably influence the action of the so called internal secretions of many organs, by organotherapy, instituted by Brown-Séquard, has in recent years been raised from an empirical to a scientific problem, through the applicaton of Ehrlich's theories of cellular physiology. Current literature abounds with reports of the action of organ extracts and cytotoxic sera of various degrees of specificity, with results in disease some favorable, more unfavorable or wholly negative. The indications that by the use of the nucleoproteids alone, which are known to differ in their chemical reactions in different organs, more specific antisera may be produced than by the use of all the proteids of the organ cells, seem to assure for this branch of experimental therapeutcs an extensve and logical progress. Especially the claim that a serum prepared against the nucleoproteid and globulin of the thyroid gland influences the course of Graves's disease in a striking manner, marks a definite step in this progress, and calls for a consideration of the pathological anatomy and pathogenesis of this malady, with a view to determine what scientific basis the facts of the disease may offer for such a claim, and what limitations must necessarily inhere in the serum therapy of exophthalmic goître. From this standpoint I propose to consider briefly the theories of the nature of Graves's disease, the pathological anatomy of the thyreoid gland, and the general pathology of the disorder.

Résumé of Theories of the Disease.

(1) The earlier observers, including Basedow, referred the disease to *an abnormal composition of the blood,* related on the one hand to scrofula, and on the other to chlorosis. This theory covered many of the clinical features, the anæmia, the swelling of the lymph nodes of the neck, the goître, the occurrence in women, and some of the vasomotor disturbances which resemble those of chlorosis. The theory of anæmic cachexia fell to the ground when it was pointed out by Trousseau that the disease occurs in full blooded males, in children, and many cases run an acute fatal course.

(2) The theory that the disease is *an affection of the cervical sympathetic* has been prominently considered ever since 1855 when it was first suggested by Koben, who pointed out the anatomical connections of the cervical sympathetic, the thyreoid, and the eyeball, and referred the nervous disturbance to pressure of the primarily enlarged gland on the nerve trunk. Von Graefe elaborated this theory, and from pressure on nerves, vessels, and trachea sought to explain the palpitation, dyspnœa, exophthalmos, and secondarily, the cachexia. This theory, in general, received important confirmation when Claude Bernard demonstrated that section of the cervical sympathetic was followed by dilatation of the vessels of the same side, while stimulation of the central end produced exophthalmos and dilatation of the pupil. Trousseau explained the simultaneous appearance of antagonistic actions of the sympathetic as the result of a peculiar neurosis, and Eulenburg pointed out that in certain forms of neuritis antagonistic phenomena were observed, such as motor paresis and hyperæsthesia, or loss of tactile with increase of pain sense. Geigel, however, recognized that antagonistic actions emanating simultaneously from the same nerve centre were impossible, and he referred those actions to paresis of the vasomotor and stimulation of the oculomotor spinal centres, which he located at some distance apart in the medulla and cervical cord.

Further study of the symptomatology of the disease seemed to require *an affection of the entire sympathetic system,* a conclusion accepted by Benedict, who located the essential lesion in a swelling of the cervical enlargement of the cord with secondary functional involvement of the sympathetic. Since a permanent state of nervous irritation is impossible and must result in paresis, Friedreich argued that the essential factor must be a paralysis of the vasomotor fibres of the sympathetic, and he located the disturbance in the cardiac nerves, from which the altered heart action gave rise more or less directly to all the various symptoms of the disease. This theory seemed to be supported by the experimental results of Boddaert and of Stilling, who succeeded in producing most of the ocular symptoms by ligation of the jugular veins and section of the sympathetic.

(3) *An affection of the vagus* was regarded as the essential nervous factor by Gros, who believed this nerve and the jugular veins to be compressed by the goître; by Wietfeld, on account of the excellent results of electrical treatment; by Mussy, who in three cases found the vagus apparently compressed by large cervical lymph nodes; and by Federn, who found the source of irritation in the effects

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of atony of the colon, the relief of which was followed by remission of all symptoms.

(4) *Both vagus and sympathetic* were included in the scope of the primary disturbance, by Sattler, who argued that the lesion must be located in the spinal centres. By the affection of the vagus centres he was able to explain the cardiac and intestinal symptoms, through the sympathetc the vasomotor, ocular, and thyreoid changes, while for minor symptoms he extended his hypothetical lesion to various other centres, chiefly in the medulla.

(5) That *a lesion involving the medulla* and especially the bulb lay at the bottom of the symptoms of Graves's disease was a conclusion first stated by Ballet, and adopted by many writers, especially the French and English schools. This conclusion resulted from (1) the inadequacy of previous theories, (2) the successful production of many of the symptoms by various experimental lesions of the medulla in animals, and (3) the rather frequent occurrence of anatomical lesions of the medulla in fatal cases of the disease in man.

Of experimental studies those of Filehne seemed to be most important. He made a superficial transverse incision in the corpora quadrigemina as closely as possible to the posterior edge of the vermiculus, and without injuring the floor of the fourth ventricle. He professed to be able in this way to produce the three cardinal symptoms of Graves's disease, tachycardia, exophthalmos, and hyperæmia of the thyreoid, but never more than two of the three symptoms at once. Durdufi and Bienfait repeated Filehne's experiments with success, and also by somewhat different procedures secured very similar results. The anatomical lesions which were noted in support of the medullary theory consisted in congestions (Barie), dilatation of vessels (Cheadle), and small hæmorrhages (Bruhl, Hale White), and scleroses (Barie, Cazal).

(6) The futility of attempting to explain all of the cardinal symptoms of Graves's diseases by any local nervous disorder led many prominent observers, including Bruck, Gros, Marie, Charcot, Möbius, Gauthier, and Buschan, to include *the entire nervous system* in the primary scope of the malady, and to regard the disease as essentially a general neurosis with predominance of psychical and vasomotor disturbances.

Buschan has supported this view in an elaborate argument. From an analysis of the literature he finds that the family history in Graves's disease discloses some neurosis of psychosis, hysteria, insanity, or epilepsy, in the reports of more than sixty writers, while more than one member of the family suffered from Graves's disease in thirty-seven reports, and in several striking cases several members of the same family were affected. He finds a very close similarity between the symptoms following psychical nervous shock and the early symptoms of Graves's disease. Nervous shock he finds to be the most definitely proved antecedent of the disease, and the cases arising after acute infectious diseases, overexertion, alcoholism, exposure to cold, pregnancy, and lactation, he traces to exhaustion of the nervous system. He therefore accepts the view that Graves's disease is a general neurosis arising in neuropathic individuals with predominant affection of the psychical and vasomotor cerebral centres, no one of which can be specially incriminated, but all of which are involved. In order to accommodate a large class of cases which seem to be clearly not of neurotic origin, Gauthier and Buschan distinguished between genuine, primary, idopathic cases, and secondary, symptomatic, pseudo-Graves's disease. The latter arises in the course of simple goître, after diseases of the nasal passages, sexual organs, and intestinal derangements, and in such cases the picture is much simpler and fails to show the complexity of nervous symptoms of the genune disease.

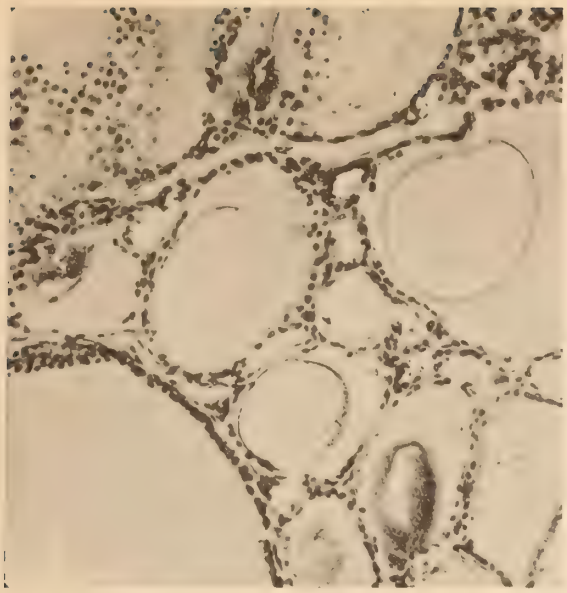
(7) That the essential factor in Graves's disease is an *intoxication by chemical agents* discharged from the thyreoid gland or arising indirectly through disturbance of its functions, is a view first clearly stated by Möbius.

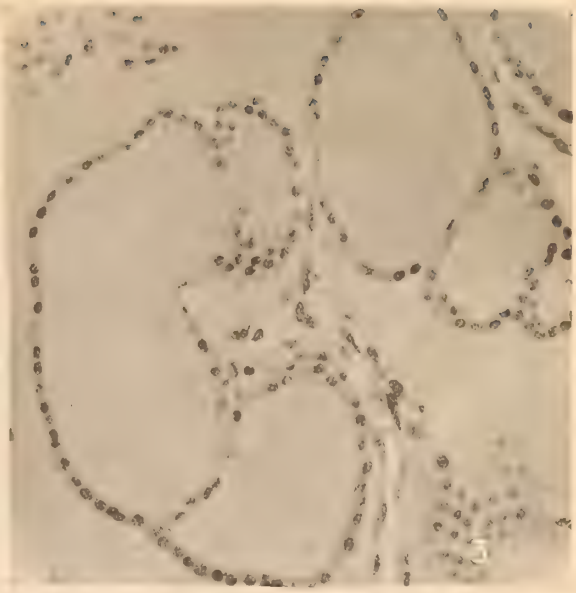
The main facts supporting this theory are the considerable number of cases of Graves's disease developing in the course of simple goître; the evident relation between anatomical changes in the thyreoid and the symptoms of myxœdema, and the occasional appearance of myxœdema in the course of Graves's disease; the therapeutical results of the removal of portions of the thyreoid gland in cases of exophthalmic goître, or the effects of its total extirpation in animals; the symptoms produced by overfeeding of thyreoid gland; increased knowledge of the physiological functions of the thyreoid, especially its influence on metabolism; and finally, histological and chemical studies of the thyreoid.

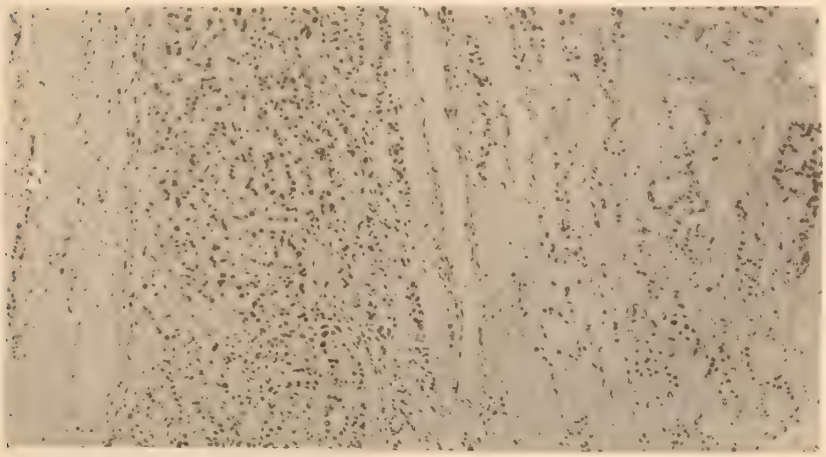
While the importance of the disturbed function of the thyreoid is now everywhere recognized, all authorities have not granted it a primary or essential importance. Gauthier, for example, holds that the malady is essentially a neurosis, while attributing to the disturbed action of the thyreoid the specific cachexia which develops. Nevertheless, in the last decade, the opinion has steadily gained ground that without disturbance of the function of the thyreoid gland the progressive disease does not exist.

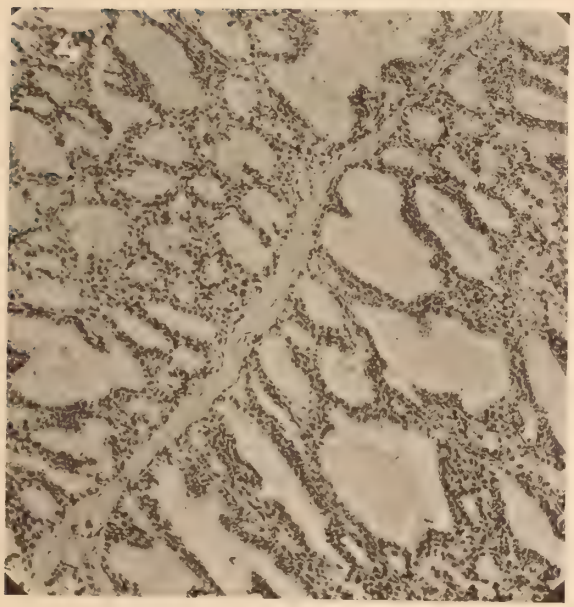
The chief arguments that tell against the chemical theory are, first, that in some cases the thyreoid is apparently not, or at least not primarily, diseased, while in many the only alteration in it is hyperæmia. Yet, it is certain that neither external examination nor even histological study are competent methods of determining the chemical functions of an organ, while prolonged hyperæmia must stand as presumptive evidence that some disturbance of function exists. At best, this argument merely shows that Graves's disease may exist for some time without very definite lesions in the thyreoid gland, but it does not prove that an excessive or abnormal activity of this gland is not the chief cause of the whole trouble.

Again, it is alleged that simple goître of large dimensions may exist for years without nervous symptoms, and that in localities where simple goître is common, Graves's disease is rare. Thus, Savage saw but one case of exophthalmos among one thousand goîtres in Cumberland, but other observers have found Graves's disease much more frequent sequela of goître, and Gauthier's case in which the nervous symptoms began twenty-five years after the goître indicates how long cases of









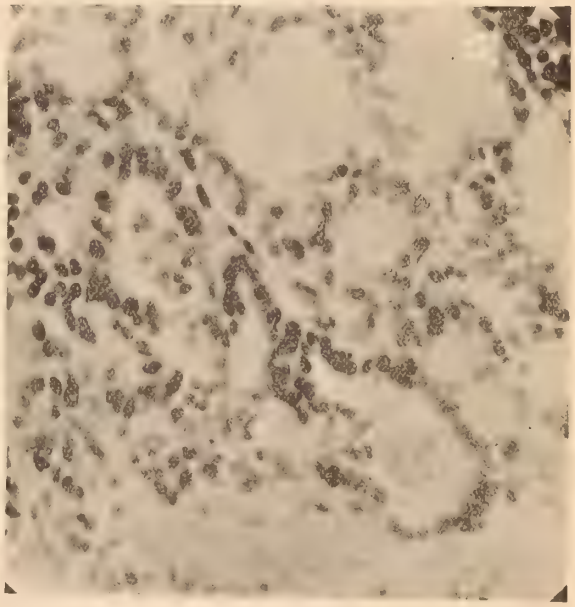
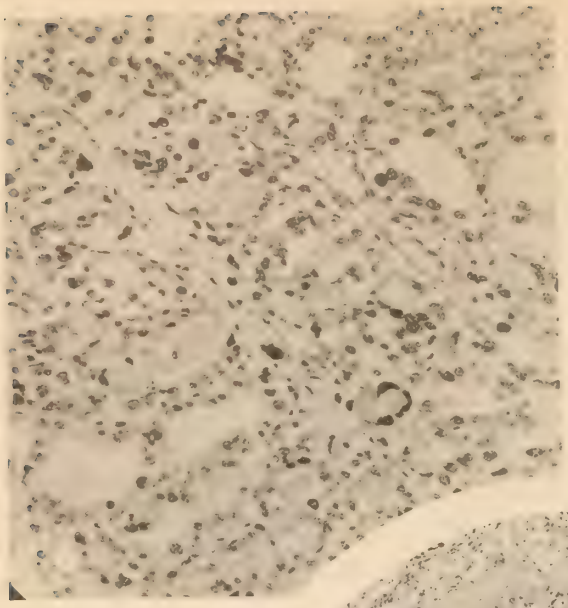
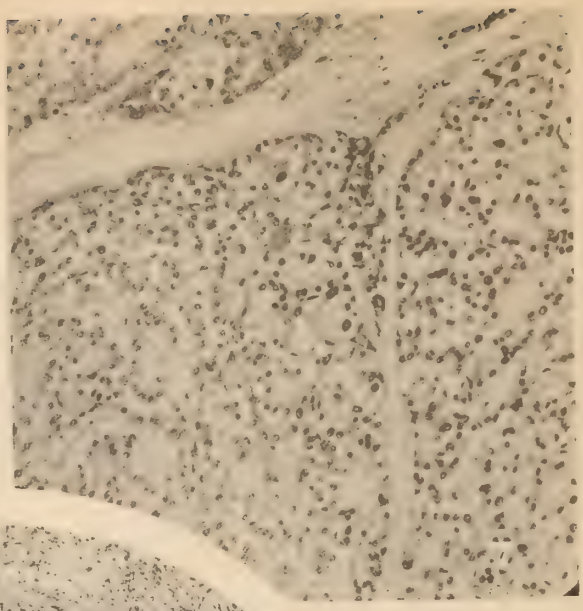
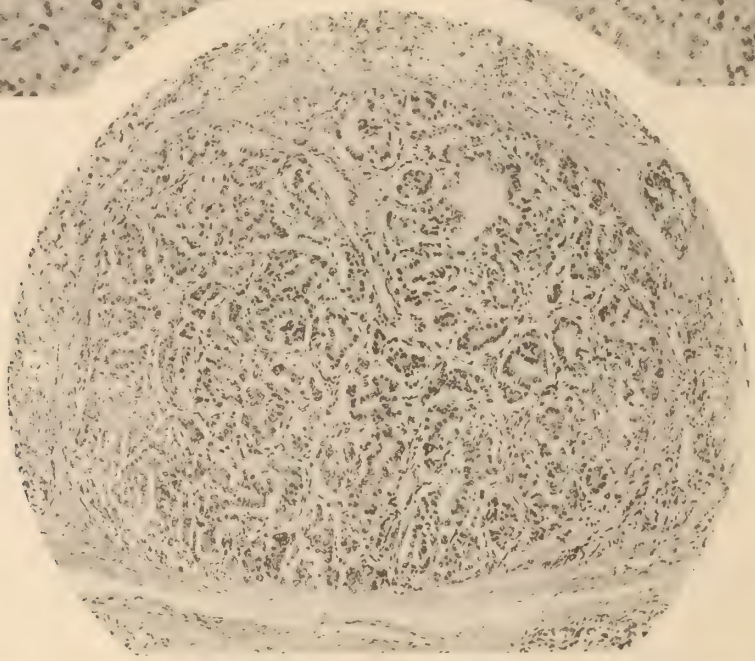


Fig. 1.—Simple goître, × 370. Increase of colloid. Slight increase in number of alveoli.
Fig. 2.—Cellular hyperplasia on edge of large simple goître.
Fig. 3.—Graves's disease, × 530. Early stage. Increase of soft colloid.
Fig. 4.—Graves's disease, × 200. Beginning cellular hyperplasia. Similar changes throughout the gland.
Fig. 5.—Acute Graves's disease, × 400. Cellular hyperplasia. Secondary alveoli.







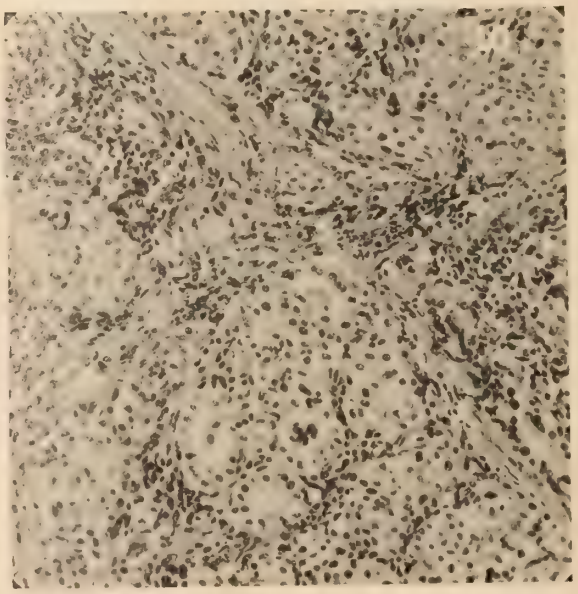


Fig. 6.—Acute fatal Graves's disease, × 370. Many new alveoli, lined by various types of cells. Diminished colloid.
Fig. 7.—Chronic fatal Graves's disease, × 370. Serum treatment. Cellular hyperplasia. Granular degeneration.
Fig. 8.—Acute Graves's disease, × 800. Cellular hyperplasia. Giant cells.
Fig. 9.—Fatal chronic Graves's disease, × 165. Miliary adenoid.
Fig. 10.—Graves's disease, × 370. Densely packed new alveoli. Interstitial thyreoiditis.

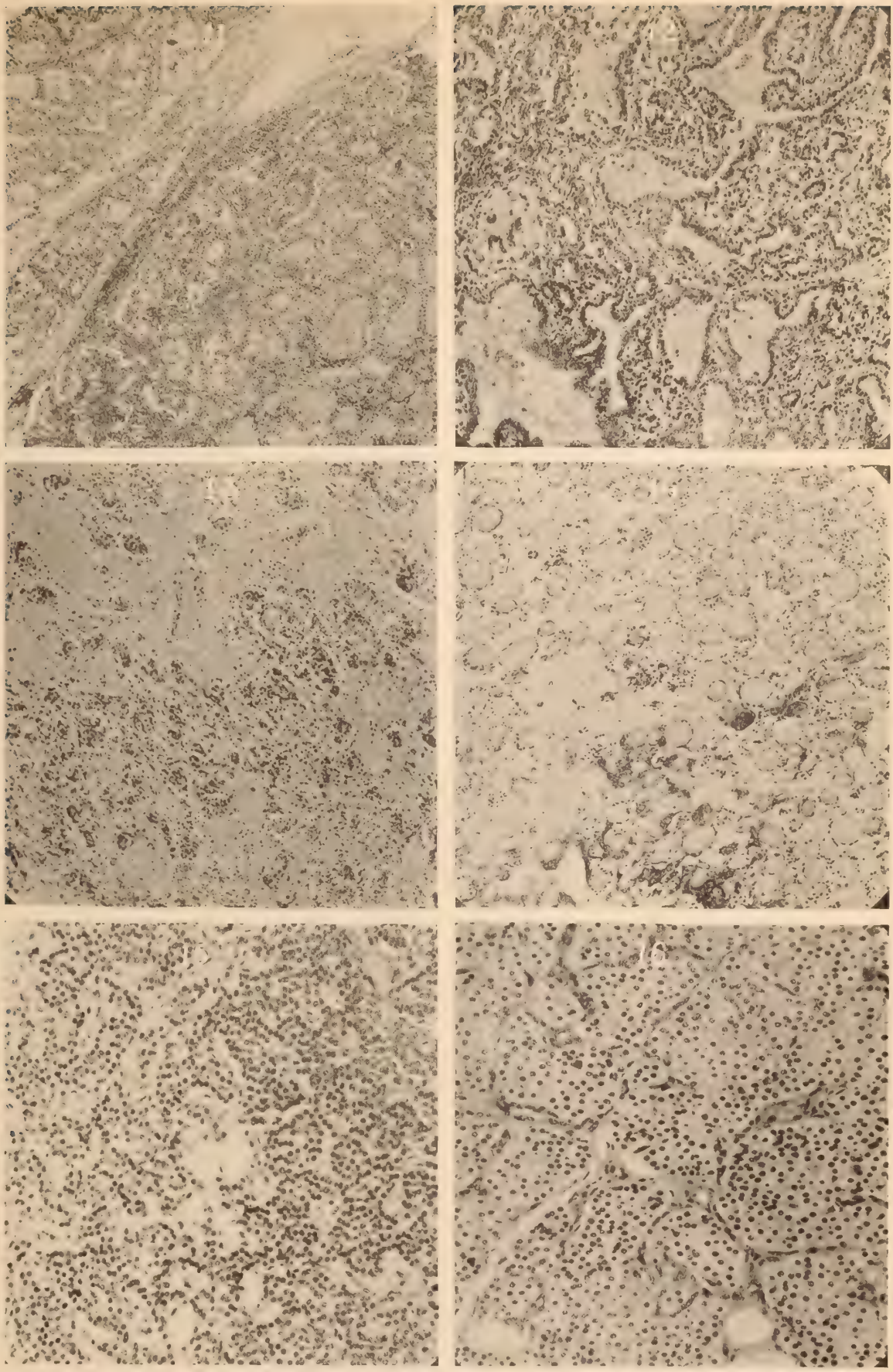


Fig. 11.—Graves's disease, × 140. Cellular hyperplasia. Diminished colloid. Active interstitial thyreoiditis.
Fig. 12.—Chronic Graves's disease, × 200. Cellular hyperplasia. Papillary projections into alveoli. Thickening of trabecular.
Fig. 13.—Chronic Graves's disease. × 200. Late stage. Hyaline stroma. Atrophy of alveoli.
Fig. 14.—Chronic Graves's disease, × 200. Symptoms of myxœdema supervening after fourteen years. Hyaline stroma, calcification. Atrophy of alveoli.
Fig. 15.—Fatal Graves's disease. Parathyreoid, × 370. Fat invasion.
Fig. 16.—Fatal acute Graves's disease. Parathyreoid, × 370. Swelling of cells.

goître must be observed before it can be said that they will not develop Graves's symptoms.

According to Möbius some symptoms of Graves's disease are occasionally seen with all types of simple goître, large and small, hard, soft, or cystic, and even with malignant tumors, and the fully developed disease is relatively frequent in regions where goître is endemic. In Jena, Passler saw fifty-eight cases of Basedow's disease among two thousand eight hundred cases of goître. In general, the clinical evidence seems to show that mild symptoms like those of Graves's disease exist in many cases of goître, and that the disease develops in pronounced forms in a moderate proportion of cases. Schranz found cardiac disturbance in forty-five cases of simple (?) goître, and Wölfler emphasizes the frequency of palpitation in the early stages of endemic goître.

In many respects the clinical distinctions between goître and Graves's disease are essentially arbitrary. If, as is the case in some localities, the goître persists long without other symptoms, the case is classed as simple goître; if the nervous symptoms develop after some years it is called simple goître followed by Graves's disease. In a large proportion of cases Graves's disease appears after the goître has existed only one to two years, or less, but these cases are not regarded as illustrating the passage of simple goître into Graves's disease, although such interpretation is legitimate. Möbius and Greenfield both assert that some enlargement of the thyreoid commonly precedes for years the appearance of the more rapid changes of Graves's disease. The size of the gland, moreover, is no criterion of its functional characteristics, and the importance of this argument from the long duration of simple goître depends on the value of the next objection.

Further, it has been urged that the thyreoid in exophthalmic goître shows no characteristic histological changes which distinguish it from simple goître. On this important question opinions have been at variance, but the most recent studies of the histology of the thyreoid by Greenfield, Farner, Hämig, and others, favor the view that the structure of the Graves's thyreoid is in many respects characteristic.

The Histology of the Thyreoid in Graves's Disease.

Although Möbius has stated that Basedow's symptoms may develop with all kinds of goître, yet in the great majority of well established cases the structure of the gland is essentially the same, and differs distinctly from that of the average simple goître. This fact was first pointed out by Greenfield, who in 1893 gave a clear description of the main features and claimed that they constituted a specific histology of Graves's disease. He states that as the earliest change, the cubical epithelium becomes columnar, with greatly increased proliferation similar to that in adenoma, papillary projections into the alveoli are common, and the colloid material is absorbed and replaced by a more mucous fluid mingled with many desquamated cells. The second change is an enormous production of new alveoli lined by cubical epithelium, resembling those in adenoma. The process is diffuse, however, while true adenoma is localized. In cases of long duration the proliferation of cells is liable to be followed by fibrous outgrowth, and the glandular structure may be obliterated. There is no increase of vascularity in this stage, but rather an diminution of vessels, although many new capillaries surround the new alveoli. This series of changes, which is the counterpart of that seen in myxœdema, signifies, according to Greenfield, increased functional activity.

Later histological studies have added many details to Greenfield's descriptions, but have not greatly widened the scope of his conclusions. Renaut likened the process to hypertrophic cirrhosis, finding the new alveoli chiefly in the centres of the lobules where the obstructed lymphatics, after the manner of occluded efferent ducts, lead to embryonal reversion of the glandular tissue. The colloid in such areas he describes as fœtal colloid, or thyromucin, which fails to stain with eosin, is not transformed into the normal thyreocollin, but is thrown into the veins and is the toxic agent of the disease.

Farner gives a minute description of the cell changes in ten goîtres of Basedow's disease, most of which seem to represent the earlier stages of the process. He divided the glands into those showing (1) diffuse and (2) nodular hyperplasia. The nodules were either (1) embryonal, one centimetre in diameter, with wide sæpta and vessels, or (2) hyperplastic, consisting of very cellular alveoli, with many fine capillaries, and containing colloid. He noted an abundance of lymphocytes in the stroma which he regarded as true lymph nodes and not as the result of inflammatory infiltration. Comparing the structure with that of six simple goîtres he finds the Graves's cases to be distinguished chiefly by (1) excess of deeply staining, large and small cells, first described by Langendorf, and regarded by him and others as the true secreting cells of the alveoli; (2) the presence of many foci where the cells of adjoining alveoli are coalescing after absorbtion of the intervening sæpta (Hürthle's *Schmelzungszellen*), and (3) the excess of colloid in the lymph vessels and its deficiency in alveoli. He finds no increase in the vessels, but a peculiar thickening of the intima, especially in the capsular vessels.

Hämig states the results of his comparison of simple with Basedow's goîtres as follows: (1) There is a form of Basedow's goître marked by a characteristic diffuse parenchymatous hyperplasia with peculiar changes in the cells, which in certain foci may lead, as in miasmatic goître, to nodular growths in the glands. To this is added a striking diminution of the colloid and the appearance of a thin abnormal secretion and a vacuolated appearance of the cells. (2) There is a form of Basedow's goître which has the appearance of the ordinary colloid goître with or without colloid or parenchymatous nodules. This type he was unable to distinguish from the ordinary miasamtic goître. (3) There are transitional forms between types 1 and 2.

L. R. Muller is more positive in his conclusions from the study of seventeen simple and four Basedow goîtres. As the chief characteristic of the Basedow goître he places the abundance and irregularity of arrangement of the cells; the formation of large, irregular masses of proliferating cells; the great deficiency of colloid; and the imperfect supply of small bloodvessels. Comparing the diffuse hyperplasia of Basedow's disease with the ordinary colloid struma, he says, the difference in structure is so marked as to require no discussion. From the parenchymatous simple struma, the Basedow goître differs in all of the characteristics mentioned before. Müller's four cases seem not to have included any of the earlier stages of the Basedow thyreoid. The majority of recent observers have drawn much the same conclusions as did Greenfield, Farner, and Hämig.

Relation of the Histology of the Thyreoid to the Theory of Hypersecretion.

The demonstration of a more or less characteristic change in the structure of the Graves's thyreoid, which is clearly to be interpreted as the expression of functional hypertrophy has formed the chief basis of the theory that the nervous symptoms of the disease are maintained by an increased and probably altered secretion from this gland. Many observers are able to find histological evidences of this increased and altered secretion. Renaut describes as the toxic agent the "fœtal" colloid, or thyreomucin, which he believes is discharged into the veins. Farner, although finding extreme deficiency in the colloid within alveoli, endeavors to support the theory of hypersecretion by emphasizing the quantity of colloid sometimes found in the veins and lymphatics about the hyperplastic areas.

Much labor has been spent in the minutest study of the secretory changes in the cells of the diseased thyreoid, and these have been compared with the results of the very thorough studies of the secretory processes in the normal gland, contributed by Langendorf, Anderson, Hürthle, Kohn, and Schmid. In the normal gland these authors describe (1) chief cells, pale staining, derived probably from some larger cells of similar characteristics (Hürthle's cells), and (2) colloid cells, deeply staining and containing the colloid before its discharge into the follicle. Langendorf describes the melting away into colloid of groups of cells lining contiguous portions of adjacent alveoli, and by this process he believes there is a solution of the membrana propria which allows the colloid to flow into the lymphatics.

The attempt to trace these processes in simple and Basedow's goitres has not been fully successful. Farner and Müller find an increase in the colloid cells and fusing areas in both types of goitre, but in the advanced stages of Graves's disease the secretory changes, which I have mentioned, are lacking, and the gland is deficient in or devoid of colloid. Farner, however, finds considerable colloid in the veins and lymphatics even when the alveoli are free from it, but Hämig and most other writers have not verified Farner's observations on this point. There is no doubt that in most advanced Graves's goitres there is little or no trace of any secretion in any part of the gland. In the earlier stages of both types of goitre the character of the colloid is altered, and it becomes more fluid and less acidophile (Renaut's thyreomucin), and it has been supposed that the secretion may be more readily drained from the gland, but histological evidence in favor of this view is lacking in some of the severest cases of Graves's disease. Hence Lubarsch and Marchand conclude that there is insufficient evidence of hypersecretion of the Graves's thyreoid, and that this theory cannot fully explain the symptoms.

In another form, however, this theory is not open to such objections. It has been repeatedly noted that in the cellular thyreoids there is abundant desquamation of cells, and that the secretion in these cases is a product of the direct transformation of these cells into an abnormal colloid without the intervention of the usual phenomena of secretion. According to Müller this type of colloid formation does not occur in the normal gland. Yet in the most cellular thyreoids in my own series there is abundant evidence of this proliferation, desquamation, and solution of cells, and it seems possible that the soluble products of such degenerating cells may form one of the sources of toxic agents in the disease, and one which need not leave any signs of accumulation in the gland. Chemical studies of Oswald and others, to be reviewed later, seem to show that considerable iodine free thyreoglobulin is present in goitres which are very deficient or lacking in colloid, and that this globulin is contained in the cells, and does not become visible as colloid except through the normal process of secretion during which it becomes charged with iodine.

The difficulties which beset the theory of hypersecretion in its stated form do not apply to the hypothesis that general overactivity of a more complex type constitutes the part played by the thyreoid in Graves's disease. All observers from Greenfield down have agreed that the series of changes in the Graves's thyreoid signifies progressive functional hypertrophy, since these changes are identical with those certainly referable to functional hypertrophy in many other tissues and organs. This conclusion is strongly supported also by the changes occurring in remrants of the thyreoid left after its partial extirpation. These, as described by Horsley and Halsted, are known to be very similar in character with those of the advanced parenchymatous type of Graves's disease. As reflected in the histology of the gland the theory of overactivity of the thyreoid appears to be as firmly established as any theoretical fact in the disease.

A Histological Study of the Thyreoid in Forty Cases of Graves's Disease.

I have recently studied the changes in structure of the thyreoid in a series of cases of Graves's disease, comparing them with a larger number of presumably normal thyreoids and with several simple goitres. For the material, which has been collected within a few months, I am especially indebted to the Drs. Mayo and Dr. L. B. Wilson, of Rochester, Minn., to Dr. John Rogers, Dr. W. J. Elser, Dr. Charles Norris, Professor Harlow Brooks, and Professor F. C. Wood, of New York, to whom I take pleasure in expressing my sincere thanks.

In these cases the characteristic changes described by Greenfield and others have been clearly demonstrable in advanced stages of the disease. As the material has been obtained from very early as well as from very late and fatal cases at autopsy, the study of the entire series suggests the following classification of the lesions of the Graves's thyreoid:

1. Hyperæmia with increased secretion of colloid showing diminished staining reaction with eosin. 2. Increased vascularity, abundance of abnormal colloid, and cellular hyperplasia. 3. Varicosities of large vessels and diminished capillary circulation; comparative or complete absence of colloid, extensive cellular hyperplasia, occasionally fibrosis. 4. Atrophy and fibrosis, with hya-

line changes in the stroma, sclerosis of vessels, hæmorrhages, and cyst formation.

This classification proves to be essentially a combination of those described by Greenfield and Hämig. The separation into classes is arbitrary and does not represent any fundamental changes in the character of the process, which is progressive, but there is a certain relation between these stages and the clinical histories of the cases.

1. In several cases the gland was removed by operation after mild nervous symptoms had existed for a few months only, and in these I have been unable to find any characteristic changes, congested capillaries, and moderate increase of pale staining colloid being the sole noteworthy feature.

2. In many cases pronounced nervous symptoms had existed for several years, and were sometimes preceded by a long quiescent simple goitre, and in all of these cellular hyperplasia was pronounced.

3. In the majority of the cases the general symptoms had been of long duration, and finally very urgent, and three were fatal. In all of these the colloid was diminished or absent, the cellular hyperplasia approached a neoplastic grade, there were sometimes areas of hyaline stroma, sæpta were sometimes thickened, and the small vessels deficient.

4. In two fatal cases, duration over ten years, there were atrophy, arteriosclerosis, hæmorrhages, and cysts. One of these was a very large, hard thyreoid which was passing through a stage of extensive cellular hyperplasia and was beginning to suffer from hyaline degeneration of the stroma. This patient died suddenly after a period of improvement. The other was a thyreoid of about normal size, cystic, with small areas of calcification, diffuse hyaline changes in the stroma, and reduction of colloid and atrophy of cells. This patient suffered from Graves's symptoms for many years, and died with terminal symptoms of myxœdema.

While the variety of the lesions indicates, to some extent, the scope and general character of the thyreoid activity in the disease, and illustrates the different results of essentially the same process, it does not seem likely that any one gland may traverse the entire series. The case terminating in myxœdema would doubtless have perished long before if the symptoms had at any time been as severe as in those cases, whose glands at operation showed extensive hyperplasia and absence of colloid. It seems more probable that in Graves's disease, as in cirrhosis of the liver or nephritis, there are cases of different types which become established at different rates of progress, and maintain their characters throughout. From this point of view it may be said that there has been a striking relation observable in the present cases between the lesion in the thyreoid and the clinical history, and I conclude, therefore, that the thyreoid lesion has had a predominant influence in controlling the course of the disease.

As reasonable space would not permit of a full report of the histological changes in these cases, mention may be limited to the more noteworthy features:

1. *The Parenchmya Cells.*—In specimens fixed in Müller formol the distinctions between Langendorf's large chief and the densely staining colloid cells were readily demonstrable. The colloid cells were increased in numbers in the early cases. Here also the "fusion zones" (*Schmelzungszellen*) were often noted, but I was unable to demonstrate Langendorf's canals leading from the follicles into lymph spaces through dissolved membranæ propriæ. When cellular hyperplasia becomes pronounced the colloid cells are not readily distinguished, but the cells increase in height and size, as described by Hürthle, the alveoli are lined by multiple layers, papillary tufts protrude into the larger alveoli, many small new alveoli are found, the capillaries disappear, and almost diffuse cellular masses form. In some cases the majority of cells are of large size, and many may be called giant cells, on account of their abundant protoplasm and huge vesicular nuclei. The picture in such cases is extremely characteristic and strongly suggests a close approach to a true neoplasm. In such areas mitotic figures are not wanting, although most of the cells appear to be dividing by amitosis. My series does not include any destructive tumors with Graves's disease, but I am inclined to regard some of these very cellular areas with giant cells as true adenomata. Adenocarcinoma of the thyreoid, however, has a very different appearance from these suspicious areas, and it may be that true tumors of the thyreoid, as of the uterine mucosa, are always at least adenocarcinomata.

I have not attempted to demonstrate glycogen in the cells as described by Hämig. Fatty degeneration is sometimes marked. Intracellular colloid is scanty. Exfoliated cells were found to be gradually incorporated in the colloid mass, sometimes assuming the "seal ring" form of Reinbach. In alveoli deficient in colloid the numerous exfoliated cells undergo granular degeneration and leave finely granular detritus or mingle with a thin, slightly hyaline, unstained material (Anderson's chromophobic secretion).

2. *The Alveoli.*—In the early stages the alveoli are distended with increased secretion and the walls of original alveoli may be obliterated. With multiplication of cells lateral buds grow out into the stroma, colloid is discharged between these cells, and new alveoli are formed. This new formation progresses with the cellular hyperplasia usually in circumscribed foci or in larger nodules, until considerable areas appear, composed of many small alveoli containing little or no colloid. Eventually the limits of alveoli become indistinct, even capillaries are missing, and diffuse masses of cells appear and little definite alveolar arrangement is demonstrable.

Papillary projections into alveoli are a feature of some cases, but this occurs chiefly when there is thickening and rigidity of the walls of the alveoli. At any stage cysts may develop from distention of alveoli. In some late cases there were cysts, separated by areas of small alveoli containing old colloid, and by hyaline stroma. The alveoli are first arranged in small lobules, the central acini distended with colloid, the peripheral ones small and cellular. Later, most traces of lobular formation may be lost. Three types of nodular formations are found: (1) Embryonal areas of small alveoli, which are present in normal glands. (2) Areas densely packed with small new alveoli, lined by large cells. (3) Circumscribed zones in which the hyperplasia strongly resembles a neoplasm. (Fig. 9.)

3. *The Secretion.*—Extreme variation characterizes the contents of the alveoli. At first there is excess of poorly staining colloid, after which it steadily diminishes and may completely disappear, persisting longest in the central portions of large lobules. The clear droplets separating the colloid from the lining cells are missing in most of my specimens, but are described by most authors as an essential phase of secretion. Strongly

basic staining granules and masses may be present, as also in normal glands and in simple goître. Without definite change in staining reaction, the colloid may be homogeneous, granular, globular, reticulated, or crystalline (Müller, formol fixation). It often stains moderately basophile (Renaut's thyreomucin). When many cells are being desquamated the secretion becomes less hyaline, more granular, and apparently more fluid. In many advanced cases the alveoli contain only desquamated and degenerating cells. Large pigmented cells lying free or mingled with the colloid indicate old hæmorrhage, while intact red cells in alveoli and stroma are signs of recent extravasations most frequently seen when the stroma has undergone hyaline degeneration. As previously remarked chemical studies indicate that the well formed acidophile colloid contains a normal proportion of iodine in organic combination (iodothyrin, iodothyreoglobulin), while the poorly staining or basophilic colloid contains a diminished proportion of iodine and more iodine free thyreoglobulin. The reticulated and granular contents of alveoli appear to contain little iodized thyreoglobulin and increasing proportions of iodine free globulin and other cellular products.

4. *The Stroma and Bloodvessels.*—In the stage of excessive secretion of colloid the stroma is relatively deficient, capillaries are very abundant, and, as in some simple goîtres, these vessels are in immediate contact with the epithelium. From this condition there is a progressive thickening of the stroma which may take one of two courses: (1) The sæpta are much thickened, fibrous, and vascular. In some glands this is a striking feature, especially when the sæpta are covered by coarse papillary projections of capillaries and epithelium. (2) Hyaline degeneration affects the stroma in many glands, rigidly inclosing capillaries which may be numerous and wide, and sometimes producing extensive areas of hyaline material, in which hæmorrhages are frequent, and calcification may occur. In all except the atrophic glands the large arteries and veins appear much increased in number and capacity. My specimens support Hämig's observation that the presence of colloid in lymph and bloodvessels is not a prominent feature of the Graves's thyreoid. I have not found it more frequently than in simple goître. As previously stated from a review of the recorded observations, the theory of excessive or perverted secretion is not decisively supported by the histological study of the colloid of these glands, except for the earlier stages of the disease, and must be based rather on the general significance of whole series of changes and on chemical analysis. Nodular or diffuse thickenings of the intima as described by Farner were noted in several of the cases, and in one gland removed at operation, there was extensive panarteritis and calcification. The thin and imperfect walls of these large vessels may account for the fragility of the vessels and uncontrollable hæmorrhages mentioned by Kocher and other surgeons.

I have found it difficult to identify lymph vessels after cellular hyperplasia has become well established, and have found no noteworthy changes in the nerves. A significant feature is the infiltration of the stroma with round cells, which was present in many of the severer cases. These cells are sometimes gathered in foci, but more often are diffuse, and hence I regard them as the results of interstitial inflammation. Farner, however, regards these foci as lymph nodes, and MacCallum found germ centres, probably in some of the larger foci. Both lymph nodes and thymus remnants are sometimes found in the normal thyreoid, and may doubtless be encountered in the diseased gland. The presence of round cell infiltration, with new connective tissue often containing many capillaries, indicates that these glands are in a state of subacute inflammation.

Is the Histology of the Graves's Thyreoid Specific?

As only a few simple goîtres have been available, I have been unable to make a satisfactory direct comparison of the Graves's with the simple chronic goîtres. Yet the study of the present cases representing both conditions and a comparison with the histology of simple goître as described by Wölfler, Wette, Kocher, Farner, Hämig, and Müller, working in localities where goître is endemic and by many others, fully support the conclusion of most recent observers that the histology of the thyreoid in Graves's disease is in many respects specific. No sweeping statement, however, will fully accord with the facts.

1. In the early stages of Graves's disease, when hypersecretion and hyperæmia are prominent, the section of the Graves's thyreoid does not differ distinctly from that of many simple goîtres.

Considerable cellular hyperplasia, diffuse or nodular, occurs in some cases of chronic goître, and in this stage of Graves's disease it does not seem possible to distinguish all cases by histological examination. Yet, as a rule, excess of colloid is the chief feature throughout the course of simple goître, while excess of cells is equally characteristic of parallel forms of the Graves's thyreoid. In simple goître the cellular hyperplasia is usually focal and peripheral, while in Graves's disease it is diffuse.

2. The extensive cellular hyperplasia with large areas of imperfectly formed alveoli lined by multiple rows of large cells interspersed with giant cells, and resulting in nearly complete loss of colloid, appears not to occur except in connection with the nervous symptoms of Graves's disease, and this histological picture must be regarded as specific.

3. When the complete series of changes exhibited by a considerable number of thyreoids taken from all stages of Graves's disease is considered, these form a picture of the process which is more strictly specific. The demonstration that a more or less specific lesion of the thyreoid may be found in the Graves's thyreoid does not appear, however, to greatly simplify the problem of the nature of the disease, or the distinctions between exophthalmic and simple goître. Graves's disease occurs with goître which may not be distinguishable histologically from simple goître; in fact, as Virchow stated, it is not limited to any size, type, or stage of goître. The essential factor in the disease is, therefore, not revealed in the histology of the thyreoid gland, but has been sought, apparently with greater success, through chemical analysis of the products of the gland.

The Physiological Chemistry of the Thyreoid.

Studies in the physiological chemistry of the thyreoid have given support to the detoxication theory of the function of the thyreoid and its rôle in Graves's disease; and on the other hand, have formed the most definite basis of the theory of hypersecretion.

1. The detoxication theory has been supported most definitely by the work of Fränkel, Notkin, and Blum. After the discovery by Reverdin and Kocher that the total extirpation of the thyreoid is followed by the train of symptoms known as cachexia thyreopriva, it was shown by Rogowitch, Fano and Zanda, Gley and Heinaz, that the blood of thyreoidectomized dogs, while not very toxic

for normal dogs, produced many of the symptoms of cachexia thyreopriva when injected into partially thyreoidectomized dogs. In explanation of this fact it was supposed that the injected blood contained a toxic substance which was successfully neutralized by the intact thyreoid, while the remnant of the gland left after partial excision was unable to meet the demands thrown upon it. This explanation was supported when Fränkel isolated from the thyreoid an alkaloidal substance, called thyreoantitoxine, which in one per cent. watery solution suppressed the tetanic symptoms arising in young cats after thyreoidectomy, but did not save the animal, and was without effect in myxœdema.

Notkin constructed an ingenious argument in favor of the detoxication theory. From the glands of sheep he isolated a thyreoproteid which produces many of the symptoms of cachexia thyreopriva in partially thyreodectimized dogs. In order to reconcile the presence of such a toxic substance in a gland supposed to furnish an antitoxine he collected many interesting observations leading to the conclusion that the colloid is not a secretion of the thyreoid, but an excretion of poisonous products of metabolism kept harmless by retention in the gland until acted upon by a thyreoid enzyme which renders it nontoxic. Notkin suggested that the poisonous product of metabolism was the thyreoproteid, and that when acted upon by the thyreoid enzyme it was split up into a harmless carbohydrate, and a proteid derivative which combined with iodine to form Baumann's iodothyrein. To an excess of this enzyme he attributed the symptoms of Graves's disease.

Except for the symptoms produced by the injection of blood of cachexia strumipriva into partially thyreoidectomized animals no attempt has been made to demonstrate a specific toxic substance in the blood which the thyreoid is supposed to neutralize. These experiments have generally been regarded as not proving the existence in the injected blood of a poisonous substance, but rather as pointing to insufficient action by that part of the thyreoid remaining after its partial excision. The injections are practically harmless in normal animals, and after complete thyreoidectomy symptoms of cachexia are postponed by starvation.

Blum offers some experimental evidence favoring the detoxication theory of the thyreoid function. He claims that iodothyrein does not exist as such in the gland, but is a decomposition product containing various proportions of iodine, but always, in comparison with artificial iodized albumen, unsaturated with iodine. Next he concludes that iodothyrein never normally leaves the thyreoid, since this gland is rich in iodine in dogs long fed on halogen free diet, while iodine introduced into the circulation (in the form of potassium iodide), or fed as thyreoid substance, is rapidly excreted in the urine. Hence whatever function it possesses must be exerted in the gland itself and is exercised not by the iodine, but by other properties in the iodized albumen molecule in which it resides. This function can only be to unite with poisonous products of metabolism which are thus retained within the gland. Hence the thyreoid proteids are poisonous when injected into the circulation, and any escape of these proteids from the gland produces toxæmia, but the degree of poisoning does not depend on the amount of iodine liberated, but on the quantity of other toxic substances or properties set free with it. He finds that the physiological action of the thyreoid substance on nitrogenous metabolism may be inhibited by saturation of the gland tissue with iodine. Hence, he concludes that the function of iodine in the gland is to neutralize poisons derived from the circulation. Blum's argument is somewhat suggestive of a detoxicating action of the thyreoid, but his chief results are directly at variance with many observations of Baumann, Roos, and Oswald, which show that the activity of thyreoid extract increases with its content of iodine, while it seems more than probable that his method of treating fresh thyreoid substance with solution of iodine causes other changes in the proteids besides saturation with iodine, and that the resulting substance is in no way comparable with the proteids existing in the gland. His argument from the rapid excretion of iodine after feeding thyreoid substance is of no value, since iodothyreoglobulin is broken up by digestion and never reaches the circulation in the form in which it is found in the thyreoid gland.

Kocher, who accepts the theory of hypersecretion, finds that administration of iodine, which up to a certain point may relieve the symptoms of Graves's disease, causes an increased retention of colloid in the gland, and in the dog may transform the histological structure of a cellular Graves's thyreoid into a normal appearance with fewer cells and abundance of colloid. Such improvement in symptoms while colloid is accumulating in the gland suggests the elimination of poisons in the form of colloid, but the improvement of symptoms may be due to other actions of the iodide, while its continued administration aggravates the disturbances of Graves's disease.

The detoxication theory, therefore, lacks definite support from the experimental side, is without analogy among physiological processes, and seems rather inconsistent with the known secreting functions of the thyreoid gland. It forms, however, the basis of the serum treatment of Graves's disease devised by Möbius, who has had good results from the injection of the serum from thyreoidectomized animals (thyreoidectin). Recently, Hunt has revived interest in the subject by showing that mice fed upon dried thyreoid of sheep show increased resistance to poisoning by acetonitrile, while the administration of thyreoidectin or of parathyreoids diminishes that resistance. The detoxication theory has also been elaborately tested in connection with experimental studies of the function of the parathyreoid, but here again, the existence of a poison in the blood responsible for the symptoms and neutralized by the gland has not been satisfactorily demonstrated (MacCallum).

2. Important progress in the knowledge of the physiology of the thyreoid was made in the discovery by Baumann (1896) that the active principle of the gland resides in an iodine containing substance, iodothyrein, which exists in the thyreoid, the iodine being in organic combination. It had previously been shown by Fenwick, Napier, Ord and White, Horsley, and Putnam, that the administration of thyreoid substance causes rise of temperature, palpitation, and increased nitrogenous metabolism, and is effective in the treatment of obesity, myxœdema, cachexia strumipriva, and simple goitre. Iodothyrein was found to be equally effective in obesity by Grawitz. Bruns found it of some value in reducing simple goitre, while Ewald showed it to be specific in cachexia strumipriva and myxœdema. At the same time Hutchison demonstrated that the iodine and the

active principle of the gland are contained chiefly in the colloid substance.

More recent studies of the chemistry of the thyreoid have dealt with the composition of the colloid substance, and of the whole gland in animals and in simple and Graves's goitres, and have been contributed chiefly by Baumann, Roos, Weiss, Rositsky, Cyon, and especially Oswald. The results of these studies may be summarized as follows:

The colloid is chiefly composed of a globulin, thyreoglobulin, and a nucleoproteid, the normal gland containing one to eight grammes of thyreoglobulin, and about one tenth as much nucleoproteid (Oswald). In colloid goitres the amount of thyreoglobulin may be very much increased, reaching often ten grammes, sometimes sixty, and once in Oswald's cases, ninety-three grammes. In parenchymatous goitres, free from colloid, there may be considerable globulin which, however, is deficient in iodine. In one very large Graves's goitre Oswald found 8.68 grammes of thyreoglobulin, in excised lobes of two others, 10.85 and 7.71 grammes, respectively. The iodine content of the whole gland and the proportion of iodine in the thyreoglobulin varies greatly and is of chief significance in relation to the functional capacity of the gland. The iodine content of the gland runs parallel with the colloid content, and Weiss and Oswald estimated it at twenty to ninety-two milligrammes for large colloid goitres and 2.8 milligrammes to nothing for parenchymatous goitres. In Graves's goitres Oswald found 7.6 milligrammes and 5.4 milligrammes of iodine in small excised lobes, and in one case, taking potassium iodide, the whole gland contained 34.75 milligrammes. Weiss estimated the average iodine content of the normal thyreoid in Silesia at 4.9 milligrammes, but his tables show marked variations. Oswald was able to show that the richer the gland in colloid the less is the percentage of iodine in the thyreoglobulin contained in it, and the less active physiologically is the thyreoglobulin. Normal thyreoids yield a globulin with 0.19 to 0.3 per cent. of iodine; colloid goitres yield a globulin containing 0.04 per cent. of iodine, when the content of globulin is fifty to ninety grammes, and 0.09 per cent. when the total amount of globulin is ten to twelve grammes. The administration of iodides greatly increases the percentage of iodine in the thyreoglobulin, which then may yield 0.4 to 0.5 per cent. iodine (normal 0.19 to 0.3 per cent.).

The iodothyrein of normal glands has about 0.63 per cent. of iodine, while that of the colloid goitre has about 0.3 per cent. Colloid free goitres yield a globulin which is free from iodine and physiologically inactive. Oswald concludes from this fact that the globulin is found in the cell bodies, and only becomes charged with iodine during secretion. Aeschbacher concluded that iodine is probably not exclusively present in the colloid, but that some is also found in the thyreoglobulin of the cells.

Interpreting these results in relation to the pathogenesis of Graves's disease, Oswald at first concluded that a deficiency in the active secretion of the thyreoid could account for the phenomena of the disease. Owing to the lack of iodothyrein there is diminished excitability of the vagus, vasomotor, and depressor nerves of the heart. While simple goitres show the same deficiency in iodothyrein as do Graves's goitres, he urges that tachycardia is much more common in simple goitre than is generally supposed. The absence of nervous symptoms in goitre is not, he believes, due to compensating action of the hypophysis, but to idiosyncracy of the patient. Although Howell and Cyon found extracts of the hypophysis to increase nitrogenous metabolism, Oswald was unable to verify this claim. He at first concluded that goitre and Graves's disease are closely related conditions due to *hypothyreoidization*, not *hyperthyreoidization*. In support of this view he notes that overfeeding of thyreoid substance does not, as many assert, produce Graves's symptoms, and on the contrary, has cured some cases of the disease; while extirpation of the thyreoid often fails to cure. At the same time he suggests the possibility that in Graves's disease the system is flooded by an abnormal thyreoid secretion constituting a *dysthyreoidization*.

It will be seen that in order to reach this conclusion Oswald combats some very definite observations regarding the results of overdoses of thyreoid extract and of surgical treatment of the disease. In a later paper Oswald considerably alters this position, and after a general review of the recent studies, he concludes that Graves's disease results from an excessive discharge into the system of a thyreoglobulin poor in iodine. The excessive metabolism of the disease is then to be referred to a very large supply of thyreoglobulin poor in iodine, but still containing an excessive total compared with the normal. Without assuming that this theory is fully demonstrated, I believe that it may be accepted as representing the most competent study of the disease.

Kocher and Aeschbacher have emphasized the importance of the phosphorus content of the thyreoid, finding that when the gland is rich in phosphorus it is deficient in iodine, and *vice versa*. This relation naturally follows from the fact that the iodine is chiefly found in the colloid, which is scanty in cellular glands, and the phosphorus chiefly in the cells and nuclei. They find that administration of sodium phosphate increases the iodine and colloid of the gland, diminishes the cells, and relieves the symptoms of Graves's disease. Since the Graves's thyreoid is very deficient in iodine A. Kocher suggests that the symptoms of the disease are referable to the iodine which the gland fails to absorb and elaborate into the normal thyreoid secretion. The chemical studies in their present status, therefore, furnish strong indications supporting those drawn from histological evidence that the essential factor in Graves's disease is excessive and possibly disordered action of the thyreoid gland. There seems to be no reasonable doubt that the disturbance in metabolism which must be a fundamental feature of the disease is directly referable to excessive thyreoid secretion. Matthes has shown that twenty grammes of nitrogen are often required for nitrogenous equilibrium in pronounced cases, while the consumption of oxygen and discharge of carbon dioxide are increased twenty to eighty per cent., or even one hundred per cent. as reported by Hirschlaff. Similar effects are clearly shown to result from the administration of iodothyrein (Roos), while after strumectomy Matthes found a twenty-five per cent. decrease in nitrogenous output. How long this excessive metabolism continues in old cases of Graves's disease, whether it tends to subside when the gland undergoes fibrosis, and whether it shows any relation

to the iodine content of the thyreoid, are essential inquiries which demand further observation and study. It would appear that the nervous symptoms and disordered metabolism exist at periods when the thyreoid is very deficient in iodine, and presents the structure of pure parenchymatous hyperplasia. Oswald supposes that much iodothyrein is nevertheless secreted by such glands, owing to their increased vascular supply. In this group of severe cases, however, the theory of hypersecretion lacks definite support from the chemical analysis of the diseased thyreoid. That the earlier stages of the Graves's thyreoid are usually as deficient in iodine as Oswald thinks appears not to be satisfactorily proved. Of Oswald's three cases, in two, single lobes contained a high proportion of iodine, and in one a very excessive quantity of iodine was referred to treatment by potassium iodide. Further studies of the iodine content of the Graves's thyreoid are therefore required before it can safely be concluded that, like the simple goître, it is deficient in iodine.

That a change in the quality of the thyreoid secretion is an essential factor in Graves's disease seems also to be imperfectly demonstrated. Such a change is rendered probable by the general structural features of the gland in advanced cases, and it has been shown that in these stages the thyreoglobulin is deficient in iodine. But that the thyreoglobulin is altered in any other character or develops any new toxic properties has not been demonstrated. Oswald has shown that iodine free globulin fails to influence metabolism, but not that it is distinctly toxic. There are other possible sources of toxic agents, however, in the cellular glands. Beebe has found that with the decrease in colloid and increase in cells the glands yield less globulin and more of the specific nucleoproteid of the thyreoid. There is histological evidence also that in the cellular goîtres of severe Graves's disease there is extensive degeneration and regeneration of cells. It appears possible that the cellular products may be set free from the gland in toxic form, but the physiological action of the thyreoid nucleoproteid has not been studied, and the symptoms of the disease do not indicate that any essentially different agent is at work in the severe toxic cases with extensive cellular hyperplasia from that which is active in the less severe or earlier cases, which is the iodine containing thyreoglobulin. From this point of view it becomes necessary to refer the toxic symptoms to excessive secretion rapidly discharged from the hyperplastic gland and not assuming the form of colloid.

From a comparison of the histological changes and the clinical symptoms in the present series of cases, it seems reasonable to refer all the distinctly thyreoid symptoms to excessive production and consumption of iodothyreoglobulin. In all stages of active Graves's disease the gland is hyperæmic. In the early stages there is excess of colloid in the alveoli and evidence of excessive secretory action of the parenchyma cells. The chief difficulty in the way of this theory is the comparative absence of colloid and abundance of cells in the severe toxic cases. Here the theory must assume that the severe symptoms are caused by rapid evacuation of the alveolar colloid or other form of secretion, progressing as the cells multiply, and rapid discharge of newly formed thyreoglobulin from the cells directly into the lymph paths, as some observers assert to have observed. But the available evidence, while favoring, does not fully demonstrate the validity of this assumption, and in this field the theory of hypersecretion leaves considerable obscurity.

(To be concluded.)

A CLINICIAN'S OBSERVATIONS OF OPSONIC THERAPY.

By Charles D. Aaron, M. D.,
Detroit.

It was my good fortune, during a recent visit to London, to come into direct personal contact with Sir A. E. Wright and to observe at close range the work in which this brilliant pathologist is engaged, and the results that are accruing. I was one of the group of physicians from various parts of the world attracted to Professor Wright's laboratory through the fame of its master spirit, and it is a pleasure to record the entire absence of secrecy about any aspect of the work or backwardness about the elucidation of any detail in the various procedures, and to acknowledge the courteous consideration shown by the chief and his able assistants, Stewart R. Douglas and J. Freeman. The scene of these workers' activity is the pathological laboratory of St. Mary's Hospital, and the subjects of their experiments are not the animals like the guinea pigs, rabbits, mice, or monkeys which one ordinarily finds in the laboratory, but human beings suffering from various diseases. In other words, Wright's is a laboratory in which experimental medicine and practical therapeutics have been amalgamated. Here an average of thirty patients report for observation or treatment three times weekly, and a staff of laboratory aides composed of the regular assistants and volunteers work late into the night completing the various examinations and preparing the remedies employed.

Although Wright has freely published in the medical press of Great Britain full accounts of the investigations which have led to the present status, and although the scientific principles underlying his discoveries are understood and appreciated by some specialists in pathology and bacteriology, it is a fact that here in America the full comprehension of these marvellous researches and the tremendous practical importance of their therapeutical achievements are not sufficiently disseminated. It is in the hope of arousing a keener interest in this work on the part of those like myself, who are engaged in the actual practice of medicine, that this account is offered. And since my training has been almost exclusively in the direction of clinical medicine I think I am in a position to present Wright's work from this view point without the danger of obscuring it with theoretical or abstract scientific details. Before proceeding, however, to the description of the actual clinical results it will be desirable to pass in brief review the broader scientific principles

which serve as a basis for the treatment which has aptly been termed "opsonic therapy," that is, therapy by means of opsonins.

According to the revised views which Wright now holds, and which came step by step through his use of various bacterial substances in the form of vaccines, opsonin is an ingredient of the blood serum which aids phagocytosis by its inhibiting action on a given microorganism. That is to say, it acts on the microbe and prepares it to be ingested by the protective body cells or phagocytes, chief among which are the polynuclear leucocytes of the circulating blood. The blood serum of man contains opsonins for various pathogenic bacteria, and in a state of health this opsonic content, or "opsonic index" as it is called, is at a certain or normal level. By an ingenious method which Wright and Douglas have devised the opsonic index for any particular pathogenic microbe can be determined. This method consists essentially in mixing with fresh human leucocytes, the serum to be tested, and an emulsion of the particular bacterium under investigation. After a short incubation this mixture is spread as in making a blood film, stained appropriately, and then examined with suitable microscopic power. The phagocytic leucocytes will now be revealed containing the bacteria in their substance, and by counting the contained bacteria in a sufficient number of leucocytes, striking an average, and comparing it with a normal serum, the opsonic index for that particular serum and that particular microbe is obtained. In actual practice the determination of the opsonic index can be satisfactorily executed only by a properly equipped laboratory expert sufficiently experienced in bacteriology and serum pathology, and the same consideration applies to the production of the various vaccines, and further, of course, to such steps as the isolation and identification of a given infecting microorganism and the preparation of a vaccine from it.

Now, the opsonic power, or, in other words, the opsonic index fluctuates, rises and falls. During infection by a certain bacterial species the opsonic index for this particular species is usually below normal, or to use one of Wright's phrases, the individual's serum is in a "negative phase" of opsonic power. Thus in chronic staphylococcus disease, as, for example, acne vulgaris or furunculosis, the staphyloopsonic index is depressed, and in pulmonary tuberculosis or osseous tuberculosis or glandular tuberculosis the tuberculo-opsonic index is low. By its natural recuperative power, that is, by its spontaneous active immunity, the infected individual may generate opsonins of sufficiently increased potency to overcome the invading bacteria and to permit the phagocytes to destroy them, when natural recovery ensues. Similarly, by hygienic or therapeutical measures this opsonic activity of the blood serum may be increased. But the chief merit of Wright's work lies in the fact that he succeeds, by the use of his bacterial vaccines, properly dosed and properly spaced, in artificially stimulating the flagging opsonic power of the infected individual's blood and of arousing it to a point, at which healing processes begin and progress to recovery. As prepared at the present time these vaccines are suspensions in sterile normal salt solution of pure cultures of various bacteria grown on the surface of agar only to the height of vegetative activity, and killed by heating for thirty to sixty minutes at 60° C. To guard against subsequent contamination lysol is added to the finished emulsion. Dosage is determined by administering an ascertained number of the bacteria, and for counting bacteria in a vaccine emulsion Wright has devised a very ingenious method. An exception to the vaccines prepared as just described is that against tuberculosis, for which Koch's new tuberculin in very minute doses is used.

To illustrate the practical working of Wright's opsonic therapy let us take as an example a case of chronic staphylococcus infection, say, one of long standing furunculosis, which fails to yield to any of the usual hygienic or medicinal measures. An examination reveals a low opsonic index for staphylococcus, that is to say, the patient's serum does not excite a phagocytosis of staphylococci to the same extent as that of a healthy individual; or expressing the condition in other phraseology, the patient is in a negative phase of resistance to staphylococci. A vaccine is prepared from *Staphylococcus aureus*, either of extraneous origin, or, better still, that obtained from the victim's own furuncles. A subcutaneous injection of about 200 million of these staphylococci is administered. Now, if repeated observations of the opsonic index are made it will be found that the immediate consequence of the inoculation usually is a further depression of the opsonic index, that is, a negative phase ensues. After this brief fall and generally within the first three days, the opsonic index rises, reaching the normal level and often exceeding it; this is Wright's "positive phase" of immunity, and it lasts for several days, for longer periods, or even indefinitely, though it gradually recedes after attaining a maximum point. It is very essential in the event that two or more injections of vaccine are required to treat a given case, to introduce these additional doses when the opsonic index is tending downward, or during the negative phase which follows the primary increase of opsonic power. This means that the dose of vaccine should only be repeated after the stimulating effects of the previous inoculation are passing off. Coincidentally with the negative phase of the inoculation the patient usually feels indisposed, and the boils may appear aggravated, but with the inauguration of the positive phase a feeling of general well being and a pronounced improvement of the furuncles is noted. Proper doses of correctly prepared vaccines are absolutely devoid of danger, and should excite no marked local reaction nor disagreeable constitutional disturbance.

With this very imperfect introduction covering the theory of Wright's opsonins and of the effect of bacterial vaccines in stimulating opsonic power as a therapeutical measure, I shall pass to what is no doubt the subject of chief interest to the medical profession at large; that is, the results of this treatment when applied to human disease. This, the cure of disease, is the test in which all practising physicians are interested;

and it is after all, the final goal towards which all our studies in experimental medicine should aim.

One of the best evidences of a physician's success is its recognition by his immediate professional associates; those who have by close touch watched the development and progress of his particular practices. Judged by this standard Wright has been preeminently successful, for among his colleagues in London one hears only the highest praise of his ability and general acknowledgment of the remarkable therapeutical conquests which he and his immediate associates have achieved. The same sentiment is prominent throughout England and to a large extent in Great Britain as a whole. It is very common in attending the clinics in London to have the attending physician, after exhibiting and explaining some case, hopeless according to all usual standards, to remark, and by no means always jestingly: "This is a case for Wright." As a matter of fact, it has become very common for clinicians to recommend to this pathologist for treatment many obstinate or incurable medical affections or surgical diseases which are "inoperable," or in which operation has failed or left behind some defect which further surgical effort promises not to mend.

Three principal classes are found among the patients reporting to the pathological laboratory of St. Mary's Hospital, those with chronic pyogenic infections, those with malignant neoplasms, and those with tuberculosis in its varied forms. In the first group the cases of chronic staphylococcus infection predominate, and are represented especially by obstinate acne, furunculosis, and sycosis.

Most striking results are attained in cases of acne. Their histories were always the same, that of pimples on the face or body, which nothing would relieve. All new patients showed the opsonic index low. After the face cleared the opsonic index was always high. Each inoculation induces the organism to elaborate by its own effort the protective secretion which is required for the destruction of the invading bacteria. The elaboration of this protective secretion proceeds in accordance with the general law that a vaccine will, if introduced in appropriate doses and at proper intervals, call forth a production of the specific bacteriotropic substances which are required, with the aid of the phagocyte, for the destruction of the bacteria against which protection is desired. In acne we have to deal, as all are aware, with an invasion of the skin follicles by one or more of the staphylococcus pyogenes group. Every suppurating area yields the staphylococci in culture. An examination of the blood reveals defective phagocytosis with respect to the staphylococcus. If we can increase our patient's immunity to the staphylococcus we practically cure him. Cases of long standing acne, where all internal and external remedies had been tried in vain by skilled specialists, yielded to inoculation by the appropriate staphylococcus vaccine. Sometimes a single injection would practically cure the disease. More often several injections at intervals of about seven to ten days would be required. In more stubborn cases further inoculations were necessary. A case of furunculosis which attracted my especial attention was a man, aged thirty-eight years, who had suffered from this chronic affection for six years. In spite of the deep incisions, antiseptics, and what not, he still had boils. Staphylococcus vaccine given under guidance of the opsonic index produced a complete recovery in two months. A man with sycosis barbæ of an aggravated form had been treated with epilation and antiseptics for over a year without any benefit. His opsonic index was low, as compared to the normal man who served as a control. Within a week after the second inoculation with staphylococcus vaccine every trace of sycosis disappeared. It may be necessary in obstinate cases of staphylococcus infection to resort to a vaccine made with the particular microorganism which has acclimated itself, so to speak, to the patient's organism. For this reason it is wise in some of these cases to take the culture from the patient's lesion to make the specific vaccine which is reintroduced by inoculation.

Equally good results have been obtained in chronic or local infections with the streptococcus, pneumococcus, and colon bacillus. A most interesting example of streptococcus infection was that of a man, about forty years old, who had undergone an operation on his neck. For some reason there was an infection followed by chills and fever. The neck was very much swollen and indurated without any discharge, except a very slight amount of serum. His temperature at times reached 105° F. He had all kinds of treatment, including the serum therapy. It was impossible to start a discharge in the neck. The serum injections were without avail. Wright was called to see the patient, immediately made a culture of the offending bacteria, and made a vaccine from that very culture. The streptococcoopsonic index was low, and vaccine was speedily introduced. Within a few hours the temperature was lower, and the following day there was a discharge in the neck showing that the parts were beginning to soften and that the man was on the road to recovery. Two more inoculations cured the case.

Pneumococcus vaccine has been used with good effect in chronic empyema following pneumonia. Colon bacillus vaccine alone, or combined with that of some other organism which may be associated with it in the lesion, has been successfully applied in chronic appendicitis, peritonitis, cholecystitis, cystitis and pyelonephrtis, and especially in the unhealing suppurating conditions where the fistulæ remain after abdominal or pelvic operations for various acute or chronic infections.

One of Wright's more recent practices is the use of a vaccine from *Micrococcus neoformans* in treating malignant tumors. I saw a case of multiple sarcoma treated with the neoformans vaccine, and while the patient was not well, the tumors seemed to be decreasing in size. A case of inoperable carcinoma of the neck causing interference with deglutition was certainly benefited, as the patient was able to swallow better.

Among the cases of tuberculosis those with the cutaneous form were most numerous. I recall one woman, aged thirty-five years, who had suffered with extensive tuberculosis of the skin. There had been tuberculous ulceration of the

subcutaneous tissue of the arms, legs, neck, breast, and all had refused to heal. There had been operative measures, scraping, extirpating, and skin grafting without benefit. At one time she had treatment with the Finsen light which was persevered in for over a year, but the disease continued to spread. This woman was placed under Wright for treatment. I had the satisfaction of seeing her after all the lesions had healed, and she was marvelously well. This case was under treatment for seven months. In speaking of her recovery she told me that she had never felt better in her life and was delighted in her restoration. There were many other cases of lupus which were gradually improving and had as yet not attained as good result as this woman, but I may say that the inoculation treatment in all these cases was wonderfully fascinating. It is not a question of the success in a certain percentage of cases where surgical or other methods have failed, but uniform improvement and ultimate success in every case under treatment.

It was also interesting to watch the improvement of patients suffering with enlarged tuberculous lymphatic glands. Inoculation of tubercle vaccine here was most gratifying in its effect. From what I have seen of the outcome in tuberculous adenitis I believe that extirpation by surgical methods will ultimately give place to therapeutical inoculations controlled by the determination of the opsonic index. One girl of eighteen years who had had several operations on the glands in the neck and a discharging sinus, had been given the inoculations for three months. I found the glands entirely disappeared and the sinus perfectly healed. Such instances also were common. A case of tuberculosis of the bladder with tubercle bacilli in the urine was greatly benefited directly under my observation. The man had been having all sorts of treatment without avail. He was urinating between thirty and forty times during the night. After a few inoculations the distress decreased, the frequency of micturition abated, and the pain disappeared. Tuberculosis of the bones and joints which had been abandoned by the surgeons were also in evidence and in various stages of improvement. I was particularly impressed with the satisfactory recovery attained by a man with osteitis and sequestrum of the tibia and tuberculous fistula by the use of the vaccine, after surgical means had utterly failed.

The preparation that is used as a tuberculosis vaccine is the tuberculin, sold under the name of Koch's new tuberculin or T. R. Before being used it should be heated to 60° C. for one hour, so as to be sure of its sterility. The dose is one three thousandth to one one thousandth milligramme, and the frequency of inoculation is guided by the tuberculoopsonic index. The old Koch tuberculin produced a cumulative action, and thus there was a continuous negative phase. This is the condition found in pyrexial phthisis. Under such circumstances inoculations of the tuberculin vaccine would make matters worse. Successive short spaced inoculations are cumulative and retain the individual in the negative phase. Only when the doses are properly adjusted can we raise the resistance to a higher level and maintain a positive phase.

Wright holds that the complete rest in bed, which gradually reduces the temperature in the large majority of cases of pulmonary tuberculosis, is to be regarded as a therapeutical measure for ending those autoinoculations which follow every over exertion. All consumptives laid out on cots and chairs in our seaside or mountain health resorts, or in open air sanitariums, demonstrate the arrest of the influx of tuberculous poison into their blood by their great gain, for they soon show an appearance of improved health. Wright says: "If only to the appreciation of this fact there could be added the belief that the cure of bacterial infections depends neither upon storage of fat, nor upon the bronzing of the skin, nor yet upon the breathing of fresh air (sea coast air, country air, pine wood air, mountain air, or warm southern air), but only upon the destruction of the invading bacteria by the antibacterial substances of the blood (with or without the cooperation with the leucocytes), we should, I think, have come close to the truth."

As for the present limitations and the future outlook for opsonic therapy I cannot do better than to close with a quotation from Wright, when he says: "In view of the very favorable and, what is more important, uniformly successful results which can, as will have appeared, be obtained by the therapeutical inoculation of tuberculin carried out under the safeguards explained, and in view of the fact that not less favorable results can be obtained by the aid of the corresponding bacterial vaccines in the treatment of localized infections by other microorganisms, I do not hesitate to contend that we have in the power of raising the antibacterial power of the blood with respect to any invading microbe, out of all comparison the most valuable asset in medicine. I would, in view of this new asset in medicine, fain induce the surgeon to abate somewhat from his conviction that extirpation and the application of antiseptics offer in connection with bacterial infection the only possible means of cure; I would have the surgeon resort to extirpation only when the physician tells him that all other means have been exhausted; and I would have the physician assume everywhere the rôle of an immunisator; and I would have him defer handing over his patients to the surgeon before he has tried in every case of localized bacterial infection, which is unassociated with immediate risk to life the therapeutical inoculation of the appropriate bacterial vaccine."

THE MEDICAL SOCIETIES OF NEW YORK COUNTY, WITH ESPECIAL REFERENCE TO THE NEED OF BETTER ORGANIZATION OF THE MEDICAL PROFESSION.

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The gregarious tendency of American medical men is evinced by their strong propensity to form professional organizations. The conditions

which prevail in small towns and rural communities tend to force the practitioner into a solitary life, so far as professional association is concerned. In cities and large towns, however, where conditions enable him to follow his own inclinations, he is eminently a social and gregarious animal, and the well known proclivity of "birds of a feather" becomes in him very apparent. The doctor is exceedingly prone to seek his friends among doctors and to spend his spare hours among professional companions. This tendency, excellent in itself, frequently leads to the error of too close confinement to professional conversation and thought.

In New York, as in some other cities, there has been in recent years an injudicious multiplying of medical societies. The number now reaches almost ninety. Eliminating the Societies of Kings, Queens, and Richmond Counties and the Homœopathic and Eclectic Societies of Manhattan there are left at least sixty-seven nonsectarian societies of New York County, not including the nine sections of the Academy of Medicine. New York County includes the Boroughs of Manhattan and the Bronx, or, in other words, the old city of New York before consolidation.

Accurate classification of these societies is not possible, for some of them are mixed in character and perform several functions. They may, however, be grouped into three general classes: The first of these consists of those societies whose work in varying proportions is scientific and social. Scientific or literary work is a feature common to all. The social feature, or at least the aim of bringing together certain classes of medical men, may be recognized in nearly all. The character and degree of prominence given to this feature leads to a natural subdivision into several more or less distinctive groups.

First, are the medical clubs. These are mostly societies of limited membership, formed chiefly for social reasons. In New York there are no clubs of medical men in the ordinary acceptance of the term. No medical club owns a building or is formed solely for social reasons.

The second group consists of the alumni societies of various hospitals and is closely allied to the first. Their primary object is to perpetuate the friendships formed in early professional life between those who have worked side by side as internes in the hospitals. They seek also to encourage professional work and study. There are now at least ten such hospital alumni societies in New York County, all of which are of rather recent date. The Society of the Alumni of Bellevue Hospital, founded in 1886, is I believe, the oldest in point of continuous activity.

The third group includes the clinical societies of colleges. These are designed in large measure to bring the younger members of the faculty into touch with the older and more important members and to arouse enthusiasm. They aid in bringing about greater unity of action and stimulate in the teaching body a spirit of loyalty to the college and interest in its success.

The fourth group includes the societies based on nationality. Although the science of medicine is neither national or local, but one of the most cosmopolitan of callings, it is not unnatural that practitioners of foreign birth or descent should seek the society of those of the same lineage, particularly if they speak a language other than English. This tendency is wholly commendable, provided only that physicians do not limit themselves strictly to membership in such organizations. Such limitation of association and study begets a tendency to a blind following of foreign authorities without reference to the peculiar manifestations of disease which appear in this country or the peculiar physical and mental types which America produces. This tendency is apparently slight in New York, where physicians of foreign lineage are among the most active in general society work.

The fifth group consists of societies of specialists, of which the Neurological and Obstetrical Societies are prominent examples. Each restricts its work to its own specialty, and is designed to bring together practitioners devoted to that work. Most of them are limited in membership and meet at the homes of their members. They are, therefore, composed of men of considerable experience who have made a reputation and are distinctively known as specialists.

The sixth group is composed of local societies. There are at least eight of these, of which the Harlem Medical Association, the East Side Physicians' Association, and the West End Medical Society are examples. Each of these organizations does scientific work, but their distinctive reason for being is to bring together the physicians of special localities of the city. In a few cases membership is limited within certain boundaries, but in most instances it is drawn largely, but not exclusively, from the locality from which the society takes its name.

The local societies have much to commend them. They are a logical development and fill an actual need of medical men. Unlike the preceding group they avoid specializing, and do only such work as will interest the general practitioner. To such practitioners they offer opportunities for the presentation of papers and participation in discussion which the larger societies cannot give in their more formal meetings. Many men take part freely in the meetings of their local societies who would otherwise never be heard, either because of diffidence or lack of opportunity. They bring the practitioners of a neighborhood together and foster a spirit of friendship between neighboring physicians that is productive of great good. Here the doctor comes in contact with other doctors of his own part of the city and meets intimately those who are living under the same conditions, treating the same class of patients, and encountering the same obstacles. Most of these local societies take a firm hold upon the regard of their members and command devoted service. Under their present organization they are a potent force, but their utility should be largely increased and a greater number of practitioners should be drawn into such societies. There is a crying need for more coordination and greater harmony between this class of societies. They are not doing all the good they might do.

The second of the three general classes of medical organizations is composed of two benevolent societies, the Physicians' Mutual Aid Association and the Society for the Relief of Widows and Orphans of Medical Men. They do no scientific work and have no social functions. Their sole object is to furnish pecuniary aid to their members in case of urgent need or to their families in the event of death. They are worthy of all commendation and merit loyal support by the profession.

The third general class consists of two great public societies, possessing important functions in addition to the scientific and social. These are the Academy of Medicine and the Medical Society of the County of New York. In the large size of their membership and the wide area from which it is drawn and in their peculiar and varied functions, these two organizations differ from all other medical societies and form a class by themselves. In fact, they divide between them functions which in some cities are fulfilled by a single body. These functions consist in the performance of certain duties to the public and to the medical profession as a whole. It is in this that they differ radically from the other societies in the county, whose interests are centered almost exclusively in the *individual* or in a few cases in a restricted locality. In these two societies interest is bestowed also upon the *profession.* The division of function between them has been made with a skill and wisdom that must commend the admiration of every one brought into intimate knowledge of their intricate workings. They work side by side in the most perfect harmony, the membership of one being almost wholly included in that of the other, while the same names are frequently found on the official boards of each.

The Academy of Medicine is justly regarded as the most representative and authoritative medical organization of the city as regards scientific and professional questions. Its membership is limited to one thousand and physicians are eligible three years after graduation. It has many reasons for being, but in three respects its work is so important and characteristic as to merit especial notice. The first of these is its scientific work, which is peculiar to itself among the medical societies of the county. It is divided into nine sections, each devoted to a branch of medical science. Each section meets monthly and is presided over by its own chairman, while the academy holds two meetings monthly, presided over by the president and devoted to medical and surgical subjects of universal interest.

The sections of the Academy of Medicine are of the greatest practical value to the profession of the city. They are not alone training schools for its specialists, but being open meetings, are largely attended by general practitioners. It has been suggested that it would be better were the special societies incorporated with their respective sections in the academy. There is much to commend such a plan, but the present system has, nevertheless, certain points in its favor. The special societies are mostly limited in membership and meet at the homes of the members. They admit only recognized specialists. The academy admits physicians after three years of practice and each member may select a section for special work. The section is a place, therefore, where the young man may meet others of his chosen specialty and may hear discussions upon subjects of particular interest to him. He may take part in the discussions and be in training long before he is eligible for membership in any special society. Although the sections are not designed primarily for young men, and as a matter of fact, the most of their work is done by elder men, they are valuable training schools for beginning specialists. Admission to a special society in later years is an honor worthy of a hard apprenticeship, and puts the stamp of authenticity upon a specialist. Many a general practitioner does considerable work in some special direction without attempting to become a strict specialist. To such the sections of the academy are very helpful.

The second important feature of the academy's work is the academy building. This handsome structure, built by physicians for physicians, shelters many professional organizations, and is the medical centre of Manhattan. It was felt to be very necessary before it was built; it has become an absolute necessity since. Had the academy no other function than the maintenance of this building, it would merit the whole souled support of the New York profession.

The third characteristic function of the academy is the maintenance of a medical library and reading rooms. The importance of such a library cannot be stated without seeming extravagance. It is a constant necessity to a goodly percentage of the four thousand four hundred physicians of New York County, and is of direct value to every patient who employs them. The yearly drafts upon the doctor for the journals and books he must have at hand are very heavy. No medical man can afford to buy all the journals and books of reference he may need or wish to consult during the course of a year. In this age a good public medical library is an absolute necessity to the medical profession of every city. It is the very breath of life to the medical writer and author, and there are scores of them in New York. A Carnegie may lavishly supply the crying need of fiction by the young females of the metropolis, but the medical profession must provide its own reference library. This huge and difficult task is performed by the Academy of Medicine and the 70,000 volumes in its fire proof stock room are of priceless value to the medical profession and through it to New York city.

Among all the societies thus far considered none are found which perform certain necessary functions for the profession as a whole, none which look to the financial and temporal interests of medical men, none which act as a unifying force. Medicine is a calling; it is not a trade, and its practice should not be conducted on trade principles. Certain business methods are recognized by all as proper and legitimate, but a medical practice conducted like a trade or adopted for money getting purposes brings reproach and dishonor not alone upon the practitioner, but upon

the whole profession, and the profession should defend itself against such odium. The higher the barriers regulating the practice of medicine have been raised, the greater has become the inducement to break through them and to avoid the years of study necessary to become a legalized practitioner. But the men and women who seek to do that are precisely the ones who undertake the practice of the healing art for money getting purposes. They seek to attain their end by every possible means, fair and foul. They not only attempt to evade the medical laws, but to secure the passage of acts that will annul them. As many as 379 bills designed to modify the medical laws have been introduced into the New York legislature in a single winter. Most of them would have impaired existing statutes and made it easier for the mercenary and the dishonest to ply their trade, while some would have legalized whole systems of pseudomedicine. Eternal vigilance and ceaseless activity are necessary to maintain the present legal standards of medical education and practice.

In addition to the quack, the charlatan, the impostor, and the medical pseudoscientist is the criminal practitioner, who gains his livelihood not by simple deception and quackery, but by criminal acts. There are three classes of illegitimate practitioners: The quacks of various types, some of whom are graduates in medicine, but have no legal right to practice; the practitioners of alleged systems of healing; and the actual criminals. They wage a ceaseless warfare and must be met upon two battlegrounds—the legislature and the courts. Here, therefore, the medical profession requires an alert, experienced, and ever ready defender. It needs at all times a trained business agent, whose vocation it shall be to take the lead in matters affecting the public health and in questions pertaining to the profession as a whole.

A hundred years ago this important duty was assigned by the State of New York to the State and county societies and they have borne it to this day. Upon them certain powers and functions have been conferred which involve certain duties to the State and to the profession. Upon the county society certain legal powers have been conferred which mark it as peculiar among medical societies. It is a member of a group of societies to which is intrusted the duty of enforcing certain provisions of the criminal law. The Society for the Prevention of Cruelty to Animals is a notable member of this group. The legal powers conferred upon each are similar, and to each is committed the duty of enforcing a special class of laws. The county society is thus made responsble for the enforcement of the medical laws in New York County. This is largely accomplished through its own counsel. It is a stupendous work and much of it should be done by organizations not limited by county boundaries. The people are aroused and a strong and general organization will probably be formed in the near future to undertake a portion of it.

Whatever may be done to broaden the work, or whatever association may be organized, it should be clearly understood that there will always be sufficient work in New York to utilize all the energies and financial resources of the County Society. Any national society that may be formed will devote itself to suppressing criminal practice in its varied phases, and to combatting evil practices dangerous to the public health and morals. The enforcement of the medical practice laws of the different States will necessarily be left largely to local societies. That duty will always be incumbent upon the County Medical Society, as well as the prosecution of the illegal and of many criminal practitioners.

Osler says that medical societies are professional cement that binds medical men together. This comparison is especially apt as regards the County Society. In addition to its scientific, social, legal, legislative, and public functions, it has come to have another and very important office. It is the great unifying and uniting force in the medical profession of New York. Among its 2,303 members are all sorts and conditions of doctors. There are physicians of both sexes and of all ages and nationalities, general practitioners, specialists in every branch, and laboratory workers. Every locality of the county and every interest is represented. No other society approaches it in diversity and size of membership. Even the Academy of Medicine with its 1,000 members and high ideals does not compare with it in this regard. No other society reaches out and takes within its fold such a variety of physicians and in such numbers. No other can so fully stand for the whole profession of the county. It is capable of being a great unifying force and is such in actual fact. Divide the profession in New York and the county society at once feels it. Divide the county society upon any question of policy or professional interest and the profession of the city is at once divided. It has been so in the past; it will be so in the future. When the county society is active and harmonious the medical profession is united and effective.

The desirability for greater unity in the medical profession of New York has been referred to in a previous paragraph. This could be brought about through harmony and coordination of the local societies, without in the slightest degree impairing their autonomy and independence or changing their character. A strong central organization does not now and would not in the future injure the local societies. It might, on the contrary, be made an active stimulus to their growth and prosperity. Properly organized, it would be removed from every suspicion of rivalry and would be looked upon as a powerful ally. In fact, such organization would involve the giving of increased importance to the local bodies.

We should not shut our eyes to evils that may possibly arise in organized bodies, but should face them squarely. A few timorous ones are worried just now over the strongly pronounced tendency of medical men to get together, because, indeed, medical societies are sometimes dominated by factions or even fall into the hands of medicopolitical bosses. The logical conclusion would be that the eighty societies of New York should be at once disbanded. That would be the most speedy and effective method of eradicating

medical politics. The methods of modern civilization, however, are to prevent disorders when possible and to treat them if they arise, not to kill, as did the Spartans, in order to insure against possible trouble in the future. That modern method should be adopted by medical men in their societies. Open nominations and election by secret ballot will go a great way to prevent ring rule. They are the terrors of the boss, political and medical. The nominating committee is an abomination and should not be tolerated in medical societies. It is the most effective instrument for perpetuating the rule of a faction. Nomination in open meeting, available for every member, should be the rule in the local societies. In large general societies with a membership scattered over wide territory, a representative form of government by delegates, openly nominated and secretly elected, is the best and safest. When elections are thus held, ring rule is possible only through the criminal lethargy of the members.

Much may be learned from Chicago, where the most perfect local medical organization in the country has been effected. Three fourths of all the desirable and eligible physicians of the city have been brought into the society, which has increased in four years from 900 members to 1,960. The special societies, twelve in number, have been affiliated with the central body as virtual sections. The city has been divided into twelve districts, each with its district society. Several former local societies were brought into affiliation without material change of character, and now constitute district branches. These affiliated societies are represented in a central council or executive body corresponding to our Comitia Minora. There is in addition a general organization committee representing the twelve districts. In each of these districts there is a subcommittee on organization, each member of which is assigned to a definite small district. It is the duty of these subcommitteemen to become familiar with the personnel of the profession in their territory, both members and nonmembers. The value of such intimate knowledge of the profession of a city as such organization must furnish is at once apparent.

Organization of the medical profession of New York by districts is perfectly feasible and would be powerful for good. The present local societies would be gainers in prosperity and prestige, and a few new district societies would be necessary. The medical profession acting through a large and well organized central body would be able to take up and deal with some of the perplexing problems that have long harassed it and could successfully attack some of the evils which reduce professional incomes and bring discredit and annoyance upon its members. We have too long been a divided and undisciplined army. Now that the New York profession is united, with a vastly better organized society in the State, it is high time that it should bestir itself in the city and effect an organization more in accord with modern ideas and methods. Is there any valid reason why the local societies should not come into affiliation with the county society and into harmony with each other?

The County Medical Society was organized a century ago to perform certain public and professional duties and to fill a definite and useful position in the scheme of State government, of which it is an integral part. This is its chief reason for being—the vital principle that has sustained it through a hundred years and launched it upon its second century larger, more active, and more forceful than it has ever been before. The Academy of Medicine and the County Medical Society have the same functions to fulfill as do other societies, but they have in addition other reasons for existence which make for permanence and will render them the most enduring of the present medical societies. The nice balancing of these functions between the two has already been referred to. The academy encourages scientific work on a broad and liberal plan, provides a building as the medical centre of the city and maintains a great medical library. To the county society is assigned the duty of enforcing the medical laws, of taking active interest in medical legislation, public hygiene, and every effort designed to raise and maintain the standard of medical education and practice, and of standing as the representative of the medical profession in all matters of general professional interest. It thus fulfills the object of its organization in 1806: "To aid in regulating the practice of physic and surgery, to contribute to the diffusion of true science, and to assist in the preservation of the public health."

As professional unity in the county is important, it is equally essential in the State and a central body to harmonize and marshal the strength of the county societies is necessary. Moreover, there are certain vital professional interests which require expert attention in the State. A State society, therefore, is as logical a creation as is the county society. It is the intelligent, directing, and coordinating force, which wields the county societies into a powerful and effective body. Such an organization was urgently needed in New York. Under the old lax system of union between the State and county societies, conditions were most unsatisfactory and analogous to those in the nation under the Articles of Confederation. Some of the reasons for seeking a more perfect political union in 1787 might well be enumerated as potent for desiring a more perfect medical union in 1906: "To establish justice, insure tranquility, provide for the common defense, and promote the general welfare."

The general meetings of the State society afford inadequate opportunity for the many who desire to present scientific communications. The State has, therefore, been divided into eight districts, each being represented by a branch of the State Society. These district branches each hold a meeting annually, devoted to scientific work. The State Society and its branches, therefore, hold nine meetings a year, which afford a hearing for a large number of members.

The system of medical organization now in force in this State was a logical outcome and a necessity, if better professional conditions were to be attained. As the most important part of the work of the County Medical Society is done

quietly and unobtrusively by its executive officers, committees, and agents, so the most essential work of the State Society is the conduct of its business functions, which are carried on in its ample offices in New York every working day of the year. One who considers only its annual meeting held in Albany will have a very inadequate conception of the real work performed for the profession of New York by the State society.

In addition to its scientific and legislative duties and its supervising function over the county societies, the reorganized State society has assumed, among others, one function of great importance, *i. e.*, medical defense. Since it was undertaken by the State society, nine months ago, twenty-eight applications have been made for defense. A few years ago it was known to be a fact that one physician in every 150 was sued for malpractice. It can be stated on authority that 97 per cent. of so called malpractice cases are brought for blackmail purely and if stoutly defended are abandoned when the time for trial arrives. Persistent resistance to these cases by a strong State organization will certainly reduce their number. There is a small percentage of cases in which there are legal questions to be decided by a court or facts to be determined by a jury. In such cases the accused member receives proper legal advice and his rights as a citizen are fully safeguarded. It should be clearly and fully understood that physician's defense was not instituted to defend those who commit illegal acts. In twenty-seven cases reported last year as defended by the Medical Association, only one was decided in favor of the plaintiff, and that was appealed to the court of last resort. It is right and becoming that medical men should stand together and should defend one another in case of attack. This they are now doing in New York, using the State society as their agent.

The need for organization is not limited to to the county or even to the State. The profession should also present a united front in the nation. This requirement is admirably fulfilled by the American Medical Association with its more than 26,000 members. Strong, vigorous, and fearless, it is a worthy leader in the comprehensive system of medical organization so important to the profession of the United States.

The various groups of societies have their places to fill and their work to do, though some of the individual societies might be dispensed with. Few progressive physicians are content without membership in one or more of them. Each group has its reason for being, and does a necessary work within its own field—a work that none can gainsay and none should belittle. To one group alone is consigned the duty of working for the profession as an entity or mass. With one alone rests the power to unify and organize it into an intelligent and effective force. Such organization must not stop with the county, but must be carried up through the State to the nation. We have, therefore, a series of societies, designed to unify and harmonize the profession, which enforces the laws regulating medical practice and education, which keeps an eternally vigilant watch upon legislation, which vigorously defends its members when attacked, which takes an active interest in questions of public health and in all that pertains to the material prosperity of medical men, which issues an honest and dignified medical directory and publishes medical journals of special and necessary type. In this comprehensive system, the county society is the vital fundamental factor—the living force that instills the breath of life into every organization above it.

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ÆTIOLOGY OF CHOLELITHIASIS; BACTERIOLOGICAL STUDY OF ONE HUNDRED AND TWO CALCULI.

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The problem under consideration has engaged the attention of some of the foremost medical writers for a long period of time. Many of the factors bearing on the causation of gallstone formation have been fairly well settled, and it is merely connecting links which remain obscure; these to a certain extent seem of minor importance, but they have greater practical bearing than superficial thought would indicate. The queston has been attacked from all sides, especially by the German and French investigators, and in order to clearly understand what has been done it might be advisable to review some of the most important and recent studies.

Since the view expressed by Naunyn (1) that bacteria play an important part in gallstone production most of the work on the question has been done with that factor in view. The first matter to be settled was, whether or not normal bile contained bacteria. Here conflicting opinions are met, probably owing to difference in the bactericidal properties of human and animal bile, for according to Mieczkowski (2), the dried ox gall inhibits the growth of bacteria to a greater extent than does human bile. Of the fifty-five normal animal gallbladders examined, Miyake (3) found but one infected. Naunyn and Netter both found the bile sterile in human beings at post mortem. Ehret and Stolz (4), on the other hand, conclude from their investigations that bile even in the normal individual cannot be regarded as sterile. Perhaps the most significant work on this side of the question is that of Mieczkowski, who at operation for lesions other than of gallbladders, which were held to be in normal state, found the bile sterile in the fifteen cases examined. Undoubtedly more weight should be laid upon such investigations than upon animal experiments or the results of bacteriological examination of bile obtained at autopsy; the latter give conflicting and unquestionably inaccurate findings, largely owing to the interval between the time of death and the necropsy. The most significant work which tends to support the findings of Mieczkowski and Miyake are the results of the post mortem investigation of Fraenkel and Krause (5), who made cultures at one hundred and twenty-eight autopsies and at two operations, and found the bile sterile one hundred and five times. Before taking out the livers these investigators ligated the cystic duct, then re-

moved the gallbladder and immersed it in a solution of bichloride of mercury for a few minutes, after which the gallbladder was opened with sterile instruments and cultures made. Few investigators have been so successful; in the majority of instances the experimenters find bacteria in the bile at post mortem examinations in a large majority of cases. For instance, Letienne (7) at autopsy found infection in twenty-four of the forty-two cases examined. Gilbert and Girode (8) on the other hand, found the bile sterile at autopsy; the number of cases examined by these observers was small. In but five of the twelve cases I examined at autopsy was the bile sterile. The bile, like other body juices, may become contaminated with bacteria, and owing to the site of the gallbladder perhaps more easily than the other fluids; so that the presence or absence of bacteria is of little importance if the walls of the gallbladder are healthy and the duct leading from the organ is patulous, so that there is no impediment to the outflow of the bile.

Bacteria have been abundantly demonstrated in the bile during and after many diseases, especially typhoid fever. Much work in this connection has been done by Chiari, Talma, Fuetterer, Sailer, Pratt, and also Forster and Kayser. Occasionally the *Bacillus typhosus* was found in the gallbladder even when there were no lesions in the ileum, bacteriæmia alone being present.

Whether the bacteriological examination of gallstone nuclei might not bring to light some factor or factors concerned in the production of cholelithiasis, I was anxious to know. Before undertaking the work upon which this paper is based I was aware of the fact that bacteria had been found in biliary calculi, but was desirous of determining the result of the bacteriological examination of a large number of stones.

The calculi were first washed in a solution of bichloride of mercury, 1 to 500, and then in sterile water, after which they were crushed by means of sterile instruments, and the pulverized nuclei inoculated in tubes of bouillon. Spreads were made of each pulverized nucleus, stained and examined at once for bacteria. In order to ascertain whether or not the bile salts and the bile acids in the calculi would inhibit the growth of organisms inhabiting the stones, I inoculated tubes containing pulverized biliary concretions with the colon bacillus, and found that even if dilutions were made through three and four tubes the bacteria always grew.

Of the one hundred and two calculi examined, but thirty-one gave rise to growths in the bouillon; the seventy-one inoculations remained sterile. Only now and then were bacteria found in spreads, and occasionally, perhaps in three calculi, were bacteria found in the spreads when no growth from the same calculus developed in the bouillon. From the infected tubes the colon bacillus was isolated eleven times in pure culture. The *Bacillus typhosus* was found once in pure culture and never associated. The following organisms were isolated once; occasionally they were in pure culture, occasionally associated: *Bacillus limbatus*, *Bacillus gasoformans*, *Bacterium oxygenes*, *Bacillus Friedländer*, *Bacillus lactis erythrogenes*, *Micrococcus tenacatis*, and the *Bacillus subtilis*. The last named organism was found in pure culture in eight of ten stones taken from the same case. The sarcinæ luteum was found in four calculi always associated with one or more organisms; the micrococcus cereus albus was isolated twice. One calculus yielded a bacillus which could not be identified; it resembled the *Bacillus Brookeri* very closely.

Soft concretions yield bacteria invariably. Although the bacteria from spreads of the nuclei which gave negative cultures stained fairly well, it is still a question whether or not the bacteria were viable at the time the inoculations were made; the retrogressive changes in the organisms may not have been sufficiently advanced to interfere with the staining reaction. Similar observations have been made by Gilbert and Dominici (9), and by Fournier (10), who found organisms in three spreads made from three different calculi, the inoculations from which remained sterile. The last named author succeeded in developing growths from forty-seven of the seventy calculi examined. Of the seventeen concretions examined by Pratt (11) four contained the *Bacillus typhosus*. Gilbert and Dominici (12) observed that recently formed calculi contain bacteria almost constantly, while the older ones are more frequently sterile. But eight of the twenty-seven calculi examined by Gilbert and Fournier (13) were infected; one of these twenty-seven concretions was obtained at autopsy and contained the colon bacillus. The five stones examined by Dufourt (14) were sterile. Blumenthal (15) found the *Bacillus typhosus* and the paratyphoid bacillus in the bile and in the concretions of a case of cholelithiasis.

The finding of bacteria in recently formed concretions in a very much greater percentage than in older ones would seem to indicate their presence in the bile at the time the calculi were formed. In attempting to solve the problem, whether or not, calculi are bacteria free, the concretions utilized for the experiments should be obtained at operation and examined at once, for I believe drying causes either death or diminution in the propagating capacity of the organisms, and it is perhaps responsible for the difference in the percentage of the infected calculi obtained by different observers. This opinion is based upon the results of the observation that, when I divided the concretions obtained at operation into two groups, examining one group immediately and allowing the other to dry for some weeks, the first group would always yield a greater percentage of bacteria containing concretions. While the almost constant presence of bacteria in recently formed calculi appears to indicate their presence in the bile at the time of the calculus formation, the experiments of Gilbert and Fournier (16), and of Chauffard (17) furnish sufficient ground to refute the conclusion. These investigators have succeeded in demonstrating secondary penetration of the calculi by placing a concretion in a sterile bouillon tube, then subjecting it to a temperature of 75 degrees C. an hour daily for three days, at the end of which time they inoculated the tube with the colon

bacillus. The tube was then incubated at 37 degrees C. for five days when the surface of the concretion in the tube was sterilized, crushed and reinoculated into a sterile tube of bouillon where the colon bacillus developed. They also succeeded in demonstrating that the organisms travel in the other direction. This phenomenon was illustrated by first sterilizing the surface of the calculus thoroughly and then placing it in a sterile tube of bouillon where it was allowed to remain for several days at a temperature of 37 degrees C. At the end of the allotted time the bouillon was infected. These observations may explain the frequency with which soft calculi are inhabited by organisms. The finding of sterile bile and infected calculi at the same operation can scarcely be held to controvert secondary penetration, for the bile may have become bacteria free after having infected the concretions. In one case I found the bile obtained at operation sterile, while eight of the ten calculi obtained at the same time were infected with the *Bacillus subtilis* in pure culture. Although secondary penetration cannot be doubted in the light of the experiments quoted, yet there are few authors who hold that the presence of bacteria in the concretions must in all instances be regarded as such.

With the view of determining the cause of gallstone production much work has been done, and it would be superfluous to review in detail the literature, as this has been done so thoroughly recently by Herter (18) and Lartigau (19). It must become clear to anyone who studies the subject that perhaps the first essential feature as laid down by Naunyn is impediment to the outflow of the bile. Such a state of affairs, first, permits infection, and secondly, prevents the actively contracting gallbladder from expelling the organism. Miyake found that if he injected a pure culture of the colon bacillus into the gallbladder from which the bile flowed freely stones did not form. Ehret and Stolz (20) after inserting foreign bodies, sterile and infected, into the gallbladder, noted that in order to infect the bile there must be a slowing of the stream. Beer (21) in cases of extrahepatic and intrahepatic lithiasis found impediment to the outflow present either at the time of observation, or he found evidence of its having been present some time previous. He ligated the common duct, infected the gallbladder, and then found that cholelithiasis developed. Hartmann (22) tells us that stagnation of the bile enhances the development of bacteria. Mignot (23) found that if sterile foreign bodies were introduced into the cystic duct so as to prevent the outflow, the bile remained sterile and no concretions formed; he also found that if infected foreign bodies were introduced into the gallbladder precipitates formed. He concludes that retardation of the flow of bile is a necessary factor in the production of calculi. This fact had already been recognized by Friedrich Hoffmann (24) toward the latter part of the first half of the eighteenth century. Perhaps it is unnecessary to have complete obstruction of the bile duct or even partial occlusion, for muscular weakness of the gallbladder may produce the same effect as obstruction. In this manner or by a similar method the retardation of bile is brought about by predisposing factors associated with cholelithiasis. Thus we can trace direct connection between such conditions as changes in the intra-abdominal pressure following repeated pregnancies, gastrectasis, upward displacement of the right kidney, tumor in surrounding organs and in the biliary ducts, constipation, sedentary habits, obesity, and the cholelithiasis. With regard to the diet Hoppe-Seyler (25) tells us that the resulting intestinal catarrh is perhaps the only influence indiscretion in diet might have as a predisposing factor in gallstone production.

Should the bile become stagnant, or even sluggish in its flow, infection usually follows. How readily this may be accomplished becomes evident when we consider that the portal circulation frequently carries bacteria, and when we consider the amount of blood taken to the liver, from which organ the bacteria may be excreted through the bile. Many investigators have ligated the cystic or the common duct, then in the course of very little time demonstrated bacteria in the bile above the occlusion or in the gallbladder. The most extensive work in this direction has been done by Ehret and Stolz, Miyake, Mignot, and Mieczkowski. Bond (26), by means of fistulæ in the gallbladder, was able to demonstrate indigo granules in this organ after the administration of the drug by mouth. From these findings, he concludes, that if the flow of bile becomes sluggish, even nonmotile bacteria may gain access to the gallbladder through the biliary channels. Doerr (27) found soon after intravenous injection that the bacteria appear in the gallbladder and in the stomach, but if he injected subcutaneously or intraperitoneal they did not reach the gallbladder.

The experimental production of biliary calculi in animals has been successfully accomplished by Mignot, Gilbert, and Fournier, Miyake, Lartigau, and also by Ehret and Stolz. These experimenters have succeeded only when certain laws were obeyed, as, for instance, they are unanimous in the assertion that there must be either occlusion of the common duct or an impediment to the outflow of the bile from the gallbladder. Wolynzew (28) alone claims to have failed in the production of biliary calculi even when the laws laid down by the investigators just quoted were observed. In experimental work the impediment to the outflow of the bile has been accomplished by the introduction of foreign bodies into the gallbladder; it is held that even though the occlusion of the ducts is not accomplished the foreign bodies in the gallbladder will cause sufficient stagnant bile to insure adequate infection to set up an inflammatory process which, of course, is the essential factor in the production of cholelithiasis. Mignot noted that in order to succeed in the production of gallstones attenuated cultures of bacteria must be employed to cause the infection, since virulent organisms nearly always cause death of the animals. Thus it appears that a catarrhal inflammation is the desired effect. It has been noted by other writers and experimenters that cholelithiasis is comparatively infrequent with suppurative conditions of the gall-

bladder, although Beer (29) claims to have seen intrahepatic lithiasis consecutive to suppurative cholangeitis. The consensus of opinion holds the cholelithiasis responsible for the suppurative lesions. Catarrhal conditions are perhaps necessary for two reasons: (1) In order to secure sufficient mucins and pseudomucins to agglutinate the salts formed during the inflammation; (2) in this condition the epithelial cells undergo a set of changes degenerative in nature during which cholestrin is elaborated, whereas, if the infection be severe death of the cells is rapid and distinct, necrotic changes result rather than degenerative.

It is by no means definitely proved that the cholestrin is a derivative of epithelium, but if we seek the source of this salt in other parts of the body it is found to occur in areas of degeneration, especially in the nervous system. It is also a frequent content of cysts. Then, too, if one takes the trouble to examine biliary calculi most of them will be found composed largely of cholestrin. Some of the most ardent advocates of the view that cholestrin is formed from the epithelial cells of the gallbladder maintain that the bile before reaching this organ contains very little cholestrin, and that it is added at this point. This view is supported by the work of Jacobsen (30), who found that the bile taken from a fistula in the duct contained 0.56 parts of cholestrin per mille, and by the more recent work of Hammersten (31), who found that the bile from the gallbladder contained more cholestrin than the bile taken from the ducts through fistulæ. The bile from the gallbladder contained from 0.87 to 0.99 parts per mille, while that from the biliary fistula contained from 0.05 to 0.15. Both investigators were working with human bile. The results of these workers seem to corroborate Naunyn's view that the cholestrin found in gallstones is largely produced in the gallbladder. Whether or not, as a result of changes in the bile produced by infection, the soaps holding the cholestrin in solution are so altered that precipitation occurs, is still a question for debate. This view is held by Letienne (32) and Girode (33), who say if a solution of biliary salts be saturated with cholestrin and then inoculated with the colon bacillus precipitation of the cholestrin occurs. I have repeatedly placed bile obtained at autopsy in a test tube and introduced the *Colon bacillus;* in nearly all instances precipitation occurred, but never cholestrin. In the majority of instances the only formed elements were the needles of fatty acids. Herter tells us that marked alkaline reaction of the bile favors the precipitation of bilirubin, yet the microorganisms most frequently responsible for infection of the gallbladder are acid producers. The weight of evidence seems to point to the fact that the salts contained within biliary concretions is largely a product of the diseased mucous membrane. Bramson, however, holds that the amount of calcium salts ingested influences the amount of this salt in the bile and plays a part in the production of cholelithiasis.

With regard to the agglutination property of bile to cause clumping of the *Bacillus typhosus* as put forth by Cushing (34), there appears to be very little material to support the view. I am strongly inclined to the belief that such a phenomenon plays little or no part in gallstone production. Taking for granted that the bile does agglutinate the *Bacillus typhosus*, it would still require a catarrhal inflammation to elaborate the necessary salts to form the calculi, and if such a condition of the gallbladder existed the débris resulting from the destroyed or degenerated cells would furnish material more suitable to act as a nucleus of the concretions than the clumps of bacteria. If the *Bacillus typhosus* were the only organism causing the condition, the hypothesis might carry with it more weight, but it has been experimentally proved that other bacteria can accomplish the same result and perhaps more frequently.

From the foregoing it would appear that nothing remained obscure in the ætiology of gallstones. Notwithstanding the fact that infection and impediment to the outflow of bile are necessary factors in the causation of the condition, it is also true that infection of the gallbladder occurs without cholelithiasis. I have seen at autopsy occlusion of the cystic and common ducts and infection of the bile in the gallbladder, but no stones. There is, perhaps, another factor still obscure, which plays an important part in the production of biliary concretions, and I believe that this factor must be worked out upon a combination of clinical and post mortem data, and that experimental investigation cannot clear up the obscurity.

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1130 SPRUCE STREET.

TUBERCULOSIS OF THE KIDNEY IN AN INFANT.

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William T., the third child of healthy parents, was born June 25, 1903. He was normal at birth, weighing nine and three quarter pounds. He was entirely breast fed for the first four weeks, but at the end of that time weighed only ten pounds, and did not seem satisfied. He was then given a home modification of milk from untested cows, pasteurized at 155° F. The milk was pasteurized until his return to town, the latter part of September, when he was put on an unpasteurized mixture prepared at home from milk from the Walker-Gordon laboratory. He did perfectly well except for one or two slight bowel upsets until the latter part of October, when he weighed fifteen and a half pounds. Physical examination at that time showed a perfectly normal baby.

Although he continued to gain up to the first of December, when he weighed sixteen and three quarter pounds, his general condition and digestion were not quite as good as they had been. From this time on his digestion was not thoroughly satisfactory and he did not gain, although physical examination showed nothing abnormal except slight pallor. He had a slight stomatitis off and on, and the tonsils were at one time large and a little red.

It was noticed early in January, 1904, that the urine was turbid and smelled badly, but it was not examined until January 19th. It was turbid, neutral in reaction, and contained a large trace of albumin. The sediment was composed entirely of pus, there being no cells or casts. There was no pain during micturition. During this time he continued to take his food well and digested fairly, but lost slowly in weight. The temperature ranged between 99° F. and 100° F. He was given hexamethylenamine in doses varying from one to two grains, three times daily. His digestion continued rather unsatisfactory, and he just about held his weight. The urine continued to contain much pus, but no cells or casts. Examination on February 2nd showed moderate pallor and flabbiness, but nothing else abnormal. The temperature continued slightly elevated.

Up to this time it was supposed that the pus in the urine signified merely the mild cystitis or pyelitis which is not at all uncommon in infants suffering from disturbances of digestion. As the general condition did not improve, however, and as the temperature began to run as high as 103° F. and 104° F., the urine was examined bacteriologically and found to contain many tubercle bacilli. The presence of these organisms was verified microscopically and culturally by Dr. F. B. Mallory and Dr. C. W. Duval. In order to be certain of the diagnosis, guinea pigs were inoculated with the centrifugalized sediment by Dr. Duval. The guinea pigs, when killed three weeks later, showed tuberculosis.

The urine continued to be turbid and to contain a trace of albumin and a moderate amount of pus, sometimes in shreds. Small round and caudate cells were present from time to time, but no casts were ever seen.

In the latter part of February the baby had a marked retropharyngeal inflammation which, although it depressed it and interfered with its nutrition a great deal, did not go on to suppuration. This condition was much better after about two weeks, but the hypersecretion of mucous in the nose and nasopharynx continued until June, 1905.

The fresh air treatment was begun in a fairly satisfactory manner about the middle of March, the baby being kept out of doors seven or eight hours daily and having all the windows open at night. It continued to hold its weight between fifteen and a quarter pounds and fifteen and three quarter pounds. The digestion was fair, with an occasional slight upset. The condition of the urine continued essentially the same. The temperature also continued to be slightly elevated.

He was taken to Dublin, N. H., the latter part of May, 1904, where he was kept out of doors, usually in a tent, sometimes on a piazza, day and night, rain or shine, never being taken in except to be bathed. He began to gain in strength and general condition almost immediately, although he did not begin to put on weight until the latter part of August. His temperature rarely rose over 99.2° F. after he went to Dublin, although it sometimes ran higher for a few days at a time. The urine gradually became clearer, but no further chemical, microscopical, or bacteriological examinations were made for some time, as the distance from town made it impossible to get it there fresh. His weight had increased to eighteen pounds by the middle of September. The temperature did not go above normal after the latter part of October.

About the first of November, 1904, he went to Jaffrey for the winter, where he continued his out of door life, being out of doors all day long, and sleeping with the windows wide open at night. The temperature in the room at night often fell to 8° F. and sometimes lower. He was never cold and never needed a hot water bottle. The urine became clear for good about April 1, 1905, although it had been clear most of the time since the previous October. The hexamethylenamine was continued, however, for about six months longer. About May 1, 1905, he went to Peterborough, N. H., where he continued his out of door life. In November he came back to his home in one of the suburbs of Boston, where he has continued to live out of doors, being out of doors all day long and sleeping out on the veranda at night. A considerable amount of adenoids and a large right tonsil were removed in February, 1906. He is now over three years old and a large, strong, absolutely healthy boy in every way, weighing thirty-six pounds stripped. The physical examination is entirely negative, and the urine is perfectly normal.

Urinary tuberculosis, clinically at least, is extremely unusual at this age, and recovery must be even more so. There can be no doubt as to the accuracy of the diagnosis in this case, however, as the tubercle bacilli were identified by competent observers (Mallory and Duval), not only microscopically and culturally, but also by animal inoculations. The location of the lesion in this case was probably in the pelvis of the kidney, possibly also in the bladder.

A definite ætiology for the disease was never determined. All the members of the family and the servants were healthy and free from tuberculosis; the doubtful milk supply which was used during the first of the summer was pasteurized; the milk supply after that time was above suspicion as regards tuberculosis. The retropharyngeal inflammation and chronic enlargement of the tonsils suggests, however, that the probable portal of entry was in the throat.

The case suggests several important points in diagnosis. First, the importance of examination of the urine in all obscure illnesses in infancy, especially if associated with fever; second, the necessity of considering tuberculosis of the urinary tract in differential diagnosis, even at this age. It also emphasizes the usefulness of fresh air in the treatment of tuberculosis, and shows that even young infants cannot only bear, but profit by the outdoor treatment, day and night, even in a cold climate.

70 BAY STATE ROAD.

THE LIBERAL DIET IN TYPHOID FEVER.*

By MORRIS MANGES, M. D.,
New York,
Professor of Clinical Medicine, New York Polyclinic; Visiting Physician to Mount Sinai Hospital.

In accepting your president's invitation to address you to-night on the subject of the diet in typhoid fever, I do so with the full knowledge that I cannot fail to repeat much that has already been said on this topic. In the short space of time alloted it will be impossible to give a full presentation of this subject.

The question of a fuller diet in typhoid fever has been a matter of earnest discussion during the past ten years. Beginning with a few scattered papers in 1897, this subject has gradually attracted more and more attention, so that its literature is by no means scanty. Indeed, it was fully discussed both at the last meeting of the Association of American Physicians at Washington and at the recent meeting of the British Medical Association at Toronto. So strongly has this idea taken root that there may even be some danger of going to an unwise extreme in the liberal feeding of typhoid fever. At the meeting of the British Medical Association "several, even of the most conservative of British physicians, declared that they considered it advisable to give the patient almost anything he asked for."[1]

My own views have already been expressed so fully in 1899[2] and in 1903[3] that I would refer those who are interested, for fuller details and the particulars as to foods allowed, to these papers. Briefly stated they are as follows:

Milk should constitute the most important part of the diet *provided the milk agrees with the patient.* I make it an invariable rule to inquire of the patient and his family whether milk agrees. If it disagrees—and what is more annoying to so many patients who are not suffering from typhoid fever than the bloated, uncomfortable, full abdomen, and the unceasing discharge of offensive flatus?—then routine administration of milk will inevitably cause trouble. Furthermore, the occurrence of abdominal distention early in the disease does not mean that a bombardment with intestinal antiseptics shall be begun, since far better results will be obtained from a proper dilution of the milk, either with plain water, albumen water, rice water, or barley water. If this fails to arrest the distention, then it is wiser to suspend the use of milk for a longer or shorter time. I would also direct attention to the observations of Wright on the possible relations of a milk diet and too much lime water to the occurrence of thrombosis. Wright asserts that the large quantities of lime salts contained in the milk may have some influence in increasing the coagulability of the blood, thus favoring the occurrence of thrombosis.

The plan I follow in the feeding of typhoid patients may be briefly summed up as follows: A delirious or somnolent patient can only be fed on liquids (not necessarily milk alone); if he is only apathetic or is perfectly rational, I ask whether he is hungry and desires something more than liquids. If he answers in the affirmative I do not hesitate to carefully increase the diet according to the following plan. During the first week the diet is necessarily a restricted liquid one, since the diagnosis is more or less in doubt at this period. The diet consists of milk with its various modifications and additions, soups, broths, and fruit juices. But as soon as the diagnosis is more or less certain the diet is increased by allowing the patient to make his own beef juice. Patients are very grateful for being allowed to make their own beef juice by chewing thick pieces of soft, juicy, sirloin steak, the nurse standing by and not giving another piece until the patient has returned the piece that he had been chewing. This not alone keeps the mouth clean, but the free flow of saliva both directly and reflexly stimulates the secretion in the stomach. This cleans the tongue and stimulates the secretion of saliva. It is always keenly relished. Plasmon, somatose, or tropon are added to the milk, or soups or broths. If these are well tolerated and the patient wants more nourishment, ice cream, cup custard, or thoroughly cooked rice pudding, farina, blanc mange, wine jelly, apple sauce,[4] milk toast (without crust) or softened crackers offer a list from which selections may be made according to the desires of the patient.

If the tongue keeps clean and the abdomen soft and the stools do not contain undigested food, we may then add either raw or soft boiled eggs, (boiled one and one-half to two minutes) or scraped beef, or very finely minced lean beef. The latter must be very carefully prepared and must contain no shreds. It need scarcely be added that the patient must be instructed to chew all articles of food very carefully. When meat is allowed, it is once a day only, the amount being about two or three ounces.

It is hard to make exact rules as to which articles of food are to be given to any particular patient, since the physician must be guided by the desires of the patient and by his general condition, the state of the tongue, mouth, abdomen, etc. Then, too, rules do not exist in the treatment of typhoid fever. Everything must be individualized to the patient! It will be found that the patients will relish more food if the mouth is carefully kept clean, and *vice versa,* taking more food, makes the mouth and tongue cleaner.

The use of a fuller diet in typhoid fever is justi-

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* Read before the New York County Medical Society, September 24, 1906.

[1] Editorial in the *Journal of the American Medical Association, September* 15, 1906, p. 863. That this conclusion is unwarranted may readily be perceived by reading F. J. Smith's paper and its discussion by Hutchinson, Sir Thomas Barlow and others as reported in the *British Medical Journal,* October 20, 1906, pp. 1014 to 1016. Unfortunately this appeared since my paper was read, and hence the very instructive statistics of Smith's ten years' experience with early feeding in the London Hospital cannot be cited in full.

[2] The Diet in Typhoid Fever. *Medical Record,* January 6, 1900.

[3] Some General Considerations on the Treatment of Typhoid Fever. *New York Medical Journal,* April 23, 1904.

[4] Apple sauce is a good vehicle for adding the white of an egg, since it is not tasted when thoroughly mixed up with the apple sauce.

fied both from theoretical and practical standpoints. From the theoretical standpoint the following may be advanced:

First, that the long duration of this disease renders it imperative that the general nutrition of the patient should be kept up to the highest standard to sustain life and to prevent complications and secondary infection as far as possible.

Second, the diet must be palatable and must be of such a character that the patient can relish it and digest it and also that it can provide for the loss of tissue resulting from the febrile process.

Third, the diet should be so regulated that no harm results to the patient on account of the peculiar anatomical lesions.

The numerous elaborate studies of the metabolism of typhoid fever patients have demonstrated some interesting points. Hoesslin has proved from a large number of experiments that the febrile temperature of typhoid fever is not increased by the quantity of food taken. Furthermore, Klemperer and others have proved that the larger quantity of food given (viz.: a quantity which in its calories almost equals that of a man at work) is properly digested in spite of the fact that most of the glandular secretions are diminished and the motility of the stomach weakened to a greater or less extent. The stomach functionates well provided the food is not given in too large a quantity and provided the deficiency of hydrochloric acid is made up either by the administration of hydrochloric acid or citric acid or by sterilizing the food.

As regards intestinal digestion in typhoid fever, Klemperer has proved that 89.94 per cent. of 100 grammes of fresh, easily digestible fat is absorbed, also that 91 per cent. of 100 grammes of albumen is absorbed. As to carbohydrates, they are seldom found in the fæces unless excessive quantities (especially sugar) have been taken. Hence intestinal digestion is very similar to that of healthy individuals. Furthermore, Klemperer has also shown that by giving enough albumen the loss of nitrogen in fever is less than when the amount of albumen is diminished.[5]

I may add that another very important influence of the freer diet in typhoid fever is that a sufficient amount of food is most essential to insure the proper performance of all the vital functions, especially of the heart, kidney, and nervous system. A sufficient amount of nourishment is a most important stimulus to these organs, and to the development of immunity.

But, granting that all this is true, can this be safely done in typhoid fever where the intestines are the seat of such extensive changes? This may be answered "Yes," not only from a physiological but also from a practical standpoint. For the former I would refer to the detailed discussion of this subject in my papers to which I have already referred. The practical side may be shown by the cases which have been reported. Reports from the various clinics are now sufficiently large to warrant some definite conclusions. These results have been so well shown by Kinnicutt that I cannot do better than to quote his statistics:[6]

LIBERAL DIET.

Cases.	Relapses.	Percentage.	Hæmorrhage.	Percentage.	Perforation.	Percentage.	Mortality.	Perc't-age.
733	48	11.38 Basis of 325 cases.	35	4.77 Basis of 733 cases.	10	1.36 Basis of 733 cases.	60	9.47 Basis of 633 cases.

FLUID DIET.

Cases.	Relapses.	Percentage.	Hæmorrhage.	Percentage.	Perforation.	Percentage.	Mortality.	Perc't-age.
4,654	507	10.89	411	8.83	111	2.40	491	10.55

My own experiences during the past seven years (the accidental loss of certain data prevents me from giving the exact figures) have been such that I am fully convinced that in patients who have been fed more liberally according to the plan which I have described, the course of the disease has been so much more favorable, the duration so much shorter, and the complications so few that I feel justified in continuing its use and recommending it to others.

Closely allied to this subject is the question of starvation in typhoid fever. I have already referred to this subject in a former paper and have urged that possibly the high fever, delirium and other nervous symptoms of some patients may be due to inanition. The patient to whom I referred was a wildly maniacal woman, with a fever of 104.5°F., pulse, 140; respiration, 38. Feeding was utterly impossible on account of her mania. There was no other recourse except to feed her by means of the stomach tube. This was easily effected with the aid of a gag, the patient being properly held down, and a pint of peptonized milk was administered. Within twenty-four hours the effect was almost magical; all the symptoms, especially the mental changes were decidedly improved. Since then I have seen several additional cases of this kind in which the result was equally satisfactory. There is an undue fear of using the stomach tube in typhoid fever cases. It is hard to conceive why the indication exists less in this disease than it does in cases of strangulated intestine and after intestinal operations.

Rectal feeding has not received the attention which it deserves. I have often found it a great aid in supplying nutrition in cases where feeding through the mouth was contraindicated. In passing, a word of caution may not be amiss as regards the insertion of the rectal tube. It must not be forgotten that in four per cent. of cases ulcers exist in the rectum; hence the tube should not be inserted high, nor should undue force be used in its introduction, nor should the quantity of fluid injected be too large.

A word as to vomiting. The occurrence of vomiting means irritability of the stomach and where it is persistent it is best to suspend all nourishment. In patients in whom the vomiting does not yield to reduction of the diet or the administration of the ordinary simple remedies, rectal feeding can be relied upon to supply the food for twenty-four to thirty-six hours or even longer.

Finally a few words of warning about the use of the fuller diet in typhoid fever. *It is important that all articles of food be thoroughly cooked, carefully minced or strained, and as sterile as possible. The patient must thoroughly masticate the food. Furthermore, the liberal diet must not be given to all patients.* The rule that I have already given is a simple one—if the patient desires more food, the quantity and variety may be safely increased.

[5] Kinnicutt quotes additional evidence in favor of these statements. See the experiments of Puritz and Khadgi, quoted in Kinnicutt's paper, *Boston Medical and Surgical Journal*, July 5, 1906.

[6] *Loco citato.*

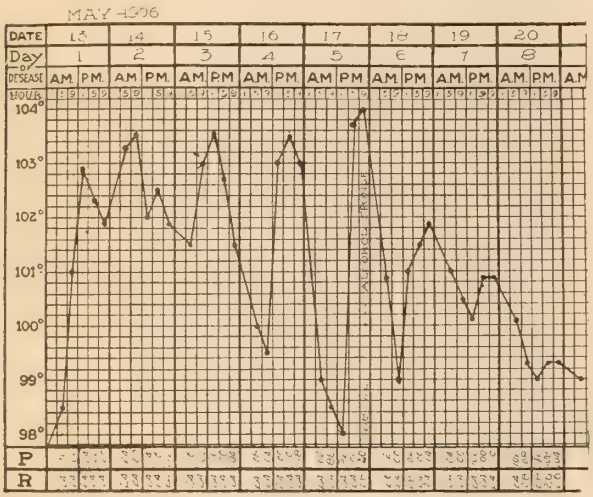
That I have never seen any disagreeable effects from the more liberal feeding would not be a truthful statement, for I have seen rises of temperature follow apparently as a direct result; but, taken all in all, the general results of the more liberal feeding have more than warranted its use. Serious consequences I have never encountered; furthermore, I am no longer compelled to listen to the piteous appeals of typhoid fever patients for something to eat. The duration of the disease is shortened, the convalescence is more rapid, and the patients leave their beds in much better condition than when they are kept on a rigorous diet.

72 EAST SEVENTY-NINTH STREET.

THE USE OF ARSENIC IN PNEUMONIA.

By T. F. JOSEPH DUNN, M. D.,
Fordham, N. Y.,
Visiting Physician to the Fordham Hospital.

The following cases of pneumonia, which were treated during the month of May at Fordham Hospital, seem worth reporting, both by reason

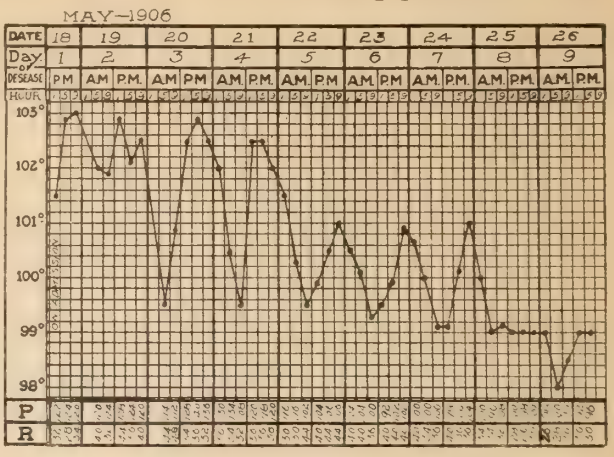


CASE I, F. B.

of the medication employed and the result obtained. The medication consisted essentially in the use of large doses of Fowler's solution of arsenic. In some cases nothing else was employed, and it was found that enormous doses of the drug were tolerated in a most surprising manner. Five minims every two or three hours were given in these cases for several days without the slightest evidence, either proximate or remote of arsenical poisoning. In fact, it would seem that these patients showed the same tolerance of arsenic that malarial patients show of quinine, or that syphilitics do of mercury or iodide. Aside from the absence of untoward symptoms there seemed to be positive results in the control of the toxæmic symptoms of pneumonia. In several of the cases there was a decided break in the temperature about forty-eight hours after the beginning of medication, and the record of these cases constitutes a very interesting exhibit, as it departs so radically from the classical chart of pneumonia ending either by crisis or lysis.

The chart of the first patient brings this out very clearly.

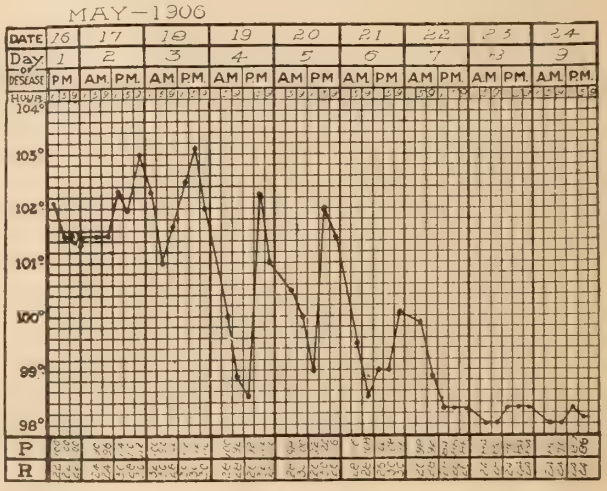
CASE I.—F. B. had been in the hospital over a week, suffering from nephritis and a large varicose ulcer of the leg. On May 13th her temperature rose suddenly to 102.8°, and she developed pneumonia in the right lower lobe. She had been taking potassium acetate,



CASE II, L. F.

bicarbonate, and citrate, dissolved with extract of triticum in water and diuretin, and now Fowler's solution, five minims, every three hours, was added; on May 16th her temperature reached 99°, and then for several days acted more like an intermittent fever than a pneumonia. In this case there was a remarkable absence of the ordinary toxæmic symptoms of the disease.

CASE II.—L. F. was admitted to the hospital on May 18th. He had been sick six days before admission. His temperature was 103°, with low delirium, showing profound poisoning. He was not an alcoholic subject. The prognosis was considered very grave. We found a double pneumonia in the lower left and upper right lobes. Fowler's solution, 5 minims, every two hours, was given and continued for several days. No other medication was employed, except sodium bromide for the delirium. Two days after admission the temperature dropped to 99°, and then followed the same intermittent course seen in Case I. The delirium did not clear up until the temperature remained normal.

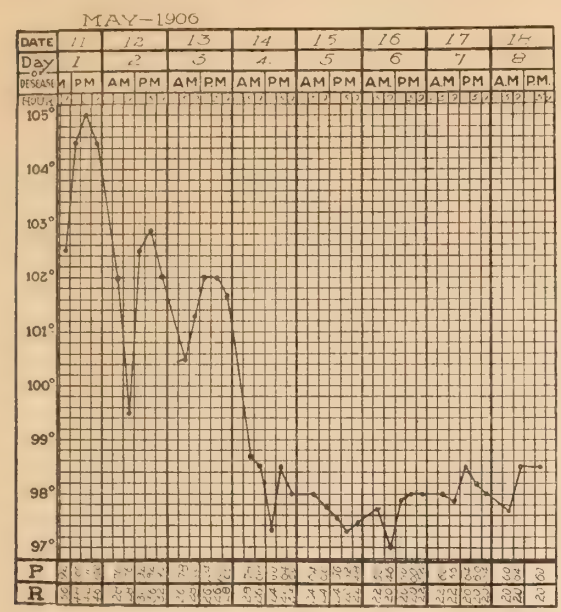


CASE III, A. C.

This case was as remarkable for its severity as Case I was for its mildness.

CASE III.—A reference to the chart in this case shows the same characteristic change in the temperature range. A. C., admitted to the hospital on May 16th. He had been sick one day before admission, was ra-

tional, and his temperature was 102° F. There was a pneumonia, involving left lung at the base. The medication was Fowler's solution, five minims, every two hours. Nothing else was given in this case. Beginning of the break in temperature, occurred about forty-

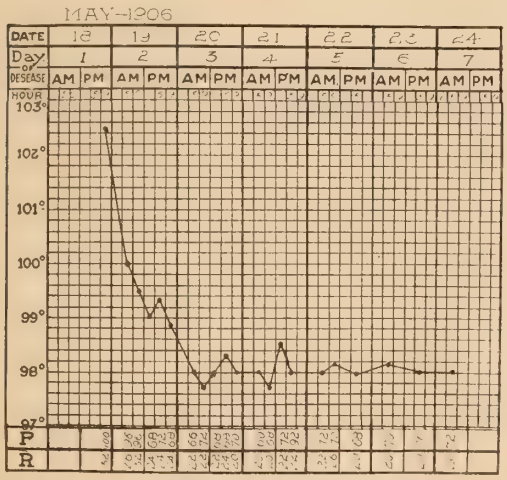


Case IV. V. L.

eight hours after admission, that is, on the third day of the disease. This prompt reduction in the fever and the amount of arsenic taken are the interetsing features of this case.

Case IV.—V. L. had been sick two days before admission. He was rational. His temperature rose to 105° F. The base of the right lung was consolidated. Fowler's solution, five minims, every three hours, was given and no other medication, except quinine, five grains, every four hours. The temperature dropped to 99° twenty-four hours later, with some of the up and down movements noted in the other cases, but not to such a marked extent.

Case V.—The patient, D. M., was evidently admit-



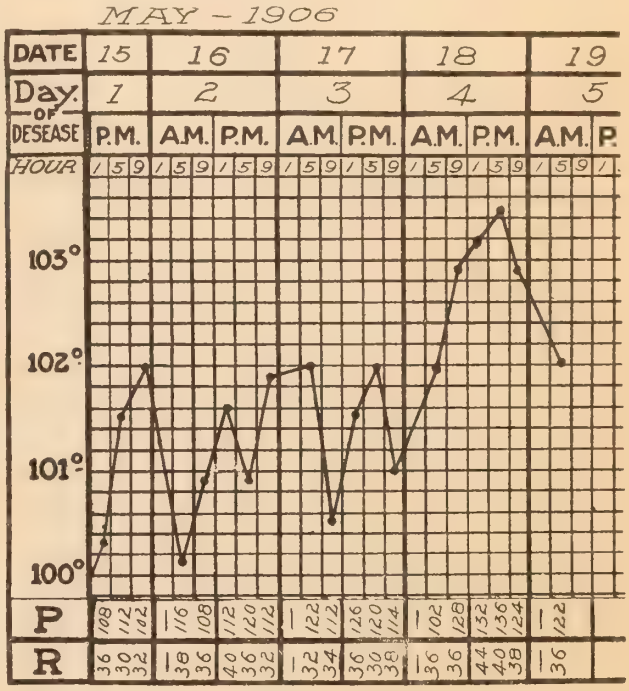
Case V. D. M.

ted to the hospital just before his crisis on May 18th. The temperature was 102.6°. The base of the right lobe was involved. Five minims of Fowler's solution were given every four hours. The crisis occurred promptly the next day, and an uneventful recovery followed, presenting no unusual features.

Case VI.—The case ended fatal. J. E. was admitted May 15th. He had been sick several days before admission and suffered from pneumonia of the right and left base, with a general and pronounced pulmonary œdema of both lungs on admission, he had been extensively and severely cupped before admission; his back being covered with large ecchymotic circles. This case seemed absolutely hopeless, however, Fowler's solution, five minims, was given every two hours, and strychnine $^1/_{30}$ grain, and atropine $^1/_{150}$ grain, were used as stimulants. Oxygen was freely administered. The patient lived four days, and somewhat to our surprise showed some improvement. Death occurred somewhat suddenly and was ascribed to general pulmonary œdema.

Aside from these hospital cases the writer has treated four cases of pneumonia in private practice along the same lines. All these have recovered.

Case I.—The first case was complicated by acute



Case VI. J. E.

nephritis, and Fowler's solution, one minim every hour, was given with very good results. This dosage was increased to three minims every two hours. Complete recovery.

Case II.—The patient of the second case showed intense symptoms of poisoning, vomiting for three days. The whole right lung was involved, the temperature 105° on the average. Fowler's solution, three minims, every two hours, and sodium salicylate, three grains, every three hours, were started on the third day with a steady and sure abatement of all the symptoms.

Case III.—This was a pleuropneumonia, and very severe. The three drop dose of arsenic was used, and no other medication with prompt fall of temperature two days after beginning of treatment.

Case IV.—A pleuropneumonia on the left side, complicated by a mitral lesion, same dosage and same happy results as in Case III.

This hasty and somewhat incomplete record is offered at the present time only in a preliminary way. The number of cases is too small to justify any general conclusions as yet. I hope to be able to arrive at something more definite after

my fall and winter service at Fordham. However, for the present we can safely say in favor of the treatment that it is extremely simple; and that it is of a supporting rather than depressing character. Arsenic is classified as a "general tonic promoting the appetite and digestion, increasing the cardiac action, the respiratory power, etc. It is antiseptic, and possesses antiperiodic power, second only to quinine" (Potter). From a consideration of these properties we might be encouraged to believe that it can also exert some control over the processes associated with the development of the pneumococcus.

2735 WEBSTER AVENUE.

A REPLY TO DR. E. N. S. RINGUEBERG'S ARTICLE ON A PLEA FOR MORE CATHOLIC AND BROADER VIEWS ON OPHTHALMOLOGY.

By FRANK W. BATES, M. D.,
Hamilton, Ontario.

In the issue of the *New York Medical Journal* of June 30th appears an article entitled A Plea for More Catholic and Broader Views on Ophthalmology, by Dr. E. N. S. Ringueberg, of Lockport, N. Y. I would be glad to have the privilege of replying to the same; for I have given a great deal of attention during the past ten years to the theory of eyestrain as a factor in producing disease of the general system; and from the experience I have had I am satisfied that the theory of eyestrain is sound, and that a great deal of the sufferings of humanity and a percentage of actual diseases, which physicians have heretofore attributed to other causes, are undoubtedly due either directly or indirectly to eyestrain.

Now it seems to me very unwise for any physician to attempt to throw cold water on, or speak slurringly of the advocates of a theory advanced by another, just because it does not appear plausible to him. We are none of us any too wise; and no one will deny that we have a great deal to learn as to the actual cause of disease. Hence, it is rather an indication of narrowness than broadness of view to relegate to the background a theory advanced by another when we cannot bring forward a sound argument to disprove it. If anyone can bring forward a sound argument against the eyestrain theory, I would be very glad to read it; but I have never read an article against it as yet that was not extremely lame.

Neither is it an indication of catholicity to call a man a crank or an enthusiast, simply because he has advanced some theory, which does not appeal to us as being sound. All the great discoveries that have ever been made in medicine have had to fight their way to the front; and the advocates of the eyestrain theory will have to fight hard and fight long before they will be able to convince the profession and the public of the soundness of the theory; for there is a great prejudice against the same, even amongst oculists, and it must be admitted that it is not a theory that would appeal to the general practitioner, because they have for so long believed that trouble with the eyes was due to the systemic diseases, that it will be difficult to convince them that various affections of the general system may result from eyestrain. One reason why it is going to be so difficult of introduction is that there are so few good prescribers among ophthalmologists. No doubt the most important department of ophthalmology is that of refraction; and if ophthalmologists paid more attention to the accurate correction of refractive and muscular troubles it would be less difficult to introduce this theory. But unfortunately, the majority of ophthalmologists look upon the department of refraction as one of the least important in ophthalmology; and the result is that not one out of ten ophthalmologists are good prescribers. The ordinary ophthalmologist considers it of more importance to spend his time elaborating on the niceties of the various operations for cataract, when as a matter of fact if ophthalmologists in general would give more attention to the accurate correction of troubles with the refraction there would be very few cataract operations to perform; for it is undoubtedly true that the one great cause for cataract is the interference to a certain extent with the nourishment of the lens by the effort of Nature in her endeavor to overcome troubles with the refraction. I have a number of cases on my record books where I have cured cataracts by correcting trouble with the refraction after the lens had become quite hazy, and the vision reduced to 20/50 or 20/70; and in which after wearing the glasses for a year or two the vision has become normal and the haziness of lens entirely disappeared.

The averring of extreme views, the going in the safe middle, will never reach truth, is not truth seeking, is not the attitude of mind of a truth seeker; hence unless we can bring forward some sound argument against any theory advanced by another, whom we may look upon as an extremist, I think we will show wisdom by keeping quiet. Of course, if a man wants to be on the safe side he had better keep right in the middle of the road and not go beyond certain bounds on either side. He will not lay himself open to ridicule then, and may have a successful career; but if all men kept in the middle of the road there would not be much progress made in medicine.

Dr. Ringueberg admits that there are some persons who are hypersensitive to even + .25 D. of an error of refraction; but he says one swallow does not make a summer, neither will all persons be so affected. Does Dr. Ringueberg mean to say that because all persons are not hypersensitive to + .25 D. or even a greater amount of trouble with the refraction that the strain therefrom has no effect upon them? If so, I take issue with him at once. For illustration, we will take a case that is more pronounced. I have a patient, whose manifest trouble is as follows:

O.D. + 3.D. ⊂ + .50 D.C. axis 95°
O.S. + 3.D. ⊂ + .50 D.C. axis 90°,

but who has remarkably good vision, being able to see 20/15 with each eye separately without glasses. Now, with that person's accommodation paralyzed her vision is not 20/200. Does

any one mean to tell me that that person is not using up an undue amount of nerve force through those ciliary muscles in overcoming that amount of trouble with the refraction? If so, I would advise them to put their reasoning faculties to work and do a little thinking. If we knew a little more about it than we really do, we could make a mathematical proposition of it and find that the amount of nerve force used up was equal to the difference between 20/200 and 20/15 of vision. One thing I do know, that with that amount of trouble with the refraction, and vision at 20/15, a person is bound to suffer in some way sooner or later.

It will be asked how can strain upon the eyes produce disease of the general system? Is it by direct connection with the organs involved? No, it is by using up the nerve force, lowering the vitality, and placing the system in a condition where the germs of the disease can find a suitable habitat. Physicians, and even the great majority of ophthalmologists do not seem to realize that the eyes do more work than any other organ of the body. Every other organ, even the heart, has a period of rest; but the eyes are at work continually from the time we open them in the morning until we close them at night, and if there is trouble with the refraction or muscular equilibrium, we are using up a certain amount of nerve force all the time. It may not be much, but it is going on continuously, and it depends on the amount of capital stock of nerve force possessed by the individual, his or her predispositions and susceptibilities as to how long before it will show its effect, and what that effect will be.

We will never know to what extent eyestrain is responsible for the ills that flesh is heir to until eyestrain is properly corrected, and it never will be properly corrected until physicians as a body wake up to the fact of having it so done. It is putting it within safe bounds to say that of all the persons we see upon the streets wearing glasses there is not one out of twenty-five wearing properly fitting ones. There is not a greater fraud perpetrated upon the public than that by which glasses are prescribed and sold. Glasses are to be found for sale in departmental stores, hardware stores, drug stores, jewelry stores, and by so called "opticians," the majority of whom know no more about prescribing glasses than a child, besides the various "professors," so and so, who go through the country imposing upon the farmers. If the officials of our governments knew the imporance of having glasses properly prescribed, they would at least prohibit the sale of same, except by those who have been properly educated in that direction. And if ophthalmologists appreciated the necessity of being careful in their work in that line, we would not see such work as is done by some men, who stand high in the profession, and are otherwise good men. I know ophthalmologists of high standing in the profession, who will prescribe for a nonpresbyopic person at one sitting, and not occupy more than ten or fifteen minutes time at it, and give the person a prescription to get it filled wherever they like; and in the majority of cases they will never see the person again to find out whether the glasses were made according to the prescription or not. No careful man would ever prescribe glasses for a person at one sitting, except in very exceptional cases, and no careful man would allow a person to wear a pair of glasses that he prescribed without first examining the glasses and finding that they were made according to his prescription; for the average optician makes mistakes in the filling of at least two per cent. of all the prescriptions that are sent to them. Of course, that is due to carelessness on the part of the workmen, and a lack of the proper system of checking the work before it goes out; but no careful ophthalmologist will place himself in a position where either he or his patient will have to suffer for the blunders of the optician. Again, before we get the prescribing of glasses down to an exact science there will have to be a great improvement in the grinding of lenses. I frequently run across lenses that are imperfectly ground. If it is a cylindrical lens, upon first examination it may appear to be all right, i. e., the axis of the cylinder may seem to be all right, but upon close examination it will be found that the lens is ground imperfectly.

In conclusion I wish to say in reference to this eyestrain theory that if any writer can give us anything that will either throw light upon the subject or disprove the theory, it is his duty to do so; but if he can do neither, let him stay in the middle of the road and keep quiet, and let the cranks work this matter out either to the enlightenment of the world or their own confusion.

34 North James Street.

REPORT OF A CASE OF TYING WIRE PERFORATING THE APPENDIX.

By Aaron Denenholz, M. D.,
New York.

Believing the report of the following case to be of interest as showing an unusual cause for gangrenous appendicitis, I will briefly outline the history of it:

J. G., age seven years. His previous history is negative in its bearing upon the present illness. About June 16, 1906, the patient was seized with an acute cramp like pain in the lower abdomen, nausea, vomiting, headache, slight fever, constipation, and inability to void urine. The pain was most intense on the right side. A physician was called in, and prescribing a purgative, left. The boy improved somewhat after this. After a day or so, another physician was called as the boy was disinclined to move about, still complaining of pain, and, after ordering ice bags, told the mother that the case was one of appendicitis, and if the boy did not improve, advised operation. At the time I was called, five days from the onset of the trouble, and as the boy was complaining of constant intense pain, after a careful examination, I advised his removal to the French Hospital. The examination on June 22, 1906, revealed as follows: His general condition was poor, fairly well nourished. The skin was dry, the tongue thickly coated. Pulse was 120 per minute, with good volume and tension; temperature, 101° F. The examination of the heart was negative, the sounds were clear, and the lungs gave also negative results. In the abdomen pain has been steadily increasing, while visible tumor was not present. But there was a definite rigidity of the muscles on right side, which was absent on the left side, voluntary muscle spasm on the right side, normal on the left side. There

was general tenderness to palpation especially at McBurney's point. I was unable to palpate any perceptible mass on account of voluntary muscle spasm.

I then decided upon an early operation, had the patient sent to the hospital, and after the usual preliminaries, prepared for laparotomy. Blood and urinary examinations were made; that of the urine being negative, while the blood showed the following: Leucocytes, 14,800; lymphocytes, 20 per cent.; polynuclear, 80 per cent. On June 23, 1906, I proceeded to open the abdomen, using ether as the anæsthetic. After the patient was under the anæsthetic and the reflexes abolished, I could readily palpate a distinct mass in the right iliac fossa, nearer Poupart's ligament than most appendicular masses. Appendectomy was performed, the gridiron incision was made nearer the anterior superior spine than is usual, through the oblique muscles an abscess cavity was encountered almost as soon as the abdomen was entered, giving a very profuse discharge of thickish pus. This was walled off, and I tried to bring out the cæcum gently and remove the appendix, but found the latter very adherent at its tip in the direction of the bladder. I then made an attempt to loosen it at its tip, but being unsuccessful, did so from the base to the apex. The appendix was ligated, cut, and cauterized. The tip sloughed away. On inspecting the cæcum, I found a gangrenous area, one centimetre in diameter. I cauterized its edges gently with Paquelin cautery, and replaced it with some difficulty, as it was distended, and I was in fear of having the slough break through. I flushed the walled off cavity with hot saline solution, mopped it with dry gauze sponges, and closed it in layers with chromicized gut for the muscles, silkworm and silk for the skin, leaving enough room for two cigarette drains in the abdomen. Upon opening the appendix later, the mother called my attention to a small shining object, protruding from the appendix near its base. Upon inspection it proved to be a piece of tying wire, such as is used in the making of artificial flowers. This the mother readily recognized as the sort she used, as she is employed in making artificial flowers. She showed me a piece of tying wire later that matched the piece in the appendix perfectly.

Many of these patients, particularly amongst the Italians on the lower west side of New York city, are engaged in the manufacture of artificial foliage, and do so at home at their leisure, after their usual household duties. I have seen many of them work at the dining table during the mealtime, and undoubtedly in this instance, while cutting off an end of the wire, it alighted upon some article of food which the boy ate, and became incorporated with it in its descent in the alimentary tract. It gradually worked its way down into the lumen of the appendix, setting up the condition described in its efforts to escape or becoming encapsulated, at last perforating the appendix wall at the site mentioned.

The interesting features of this case are the peculiar ætiology and the existence of the high polynuclear count as indicative of abscess at the time of admission. Unquestionably in this case, we can trace the source of the trouble to the entry of the piece of wire. While there were serious changes going on in the right iliac fossa, such as the perforation of the appendix and the gangrenous patches of the cæcum, the systemic reaction was surprisingly moderate, although the patient was steadily going down hill. The patient made an uninterrupted recovery, and is now perfectly well.

85 EAST TENTH STREET.

Our Readers' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LVI.—How do you treat sciatica? (Closed November 15, 1906.)

LVII.—How do you use mercury in syphilis? (Answers due not later than December 15, 1906.)

LVIII.—How do you treat acute synovitis? (Answers due not later than January 15, 1907.)

Whoever answers one of these questions in the manner most satisfactory to the editors and their advisors will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short; if practicable, no one answer to contain more than six hundred words.*

All persons will be entitled to compete under the regulations laid down by the postal authorities. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL.

The prize of $25 for the best essay submitted in answer to question LV has been awarded to Dr. Leigh F. Watson, of New York, whose article appeared on page 1038.

PRIZE QUESTION NO. LV.

THE TREATMENT OF ACUTE ARTICULAR RHEUMATISM.

(Continued from page 1040.)

Dr. John Boyd Tyrrell, of Waterville, Minn., remarks:

In the treatment of acute articular rheumatism the following general rules should be observed in each and every case, and if such rules prevail and treatment is rigidly applied, with the importance of each part insisted upon and enforced, then the disease known as acute rheumatism, rheumatic fever, etc., may be shorn of most of its terrors, and in many cases in a surprisingly short time.

Without preliminary discussion of the disease itself or its uncertain ætiology the subject of treatment may be outlined thus: First, proper surroundings; second, rest and immobilization; third, diet; fourth, local treatment; fifth, medicinal treatment.

1. Proper surroundings, which mean: Uniform dry temperature, much light, much fresh air, suitable bed, and bed clothing of cotton blankets, not sheets, are proper. Gowns should be of flannel supplemented by cotton enveloping the joints, with frequent changing necessitated by profuse perspiration. 2. Quiet, or rather immobility of the affected joints. This may be and is easily accomplished by suitable splints and supports for the bed clothing. 3. Diet, very often milk with alkaline mineral waters; lemonade, barley water, etc., as drinks for the thirst. Milk or any other article of diet should be given at short intervals, and very little at a time. 4. Local treatment. This is very often not necessary. In fact, it has never been found so in my cases. Wrapping the

joints in cotton is sufficient. 5. Medicinal treatment. Of all salicyl compounds, salicin, introduced by Maclagan in 1876, is without a peer in the treatment of this affection. It has proved of more value in pain, pyrexia, and in the power to reduce the swellings promptly, and at the same time produces less systemic disturbance than the sodium salt, the acid, aspirin (acetylsalicylic acid), or any of the other newer or older compounds. To get these good results from salicin this is the way it should be given: First day, every half hour, one gramme in capsule. This should be continued in an ordinary sized individual till a total of 22 to 25 grammes had been taken, when nothing more in the way of medicine should be given for a period of about twelve hours. Then salicin in one gramme doses every half hour as before may be resumed for a lesser period, say twelve hours. Now it is well to give another rest for five to eight hours, depending upon the general condition of your patient, and then continue with the same dose at intervals of one to one and one half hours for three or four days. As a rule mixed treatment is not as well borne as the salicin alone. In convalescence, however, it is my rule to give potassium iodide or sodium iodide in conjunction with the salicin.

In ordinary cases patients should be kept in bed for about six weeks.

Remarks.—I have experienced less tinnitus, less gastric disturbance, and I have had less cardiac and other complications with this method of procedure than with any other. Salicin, I think, is superior to the other salicyl compounds because it can be given in excessively large doses with a minimum deleterious effect, and when it is pushed to effect, morphine or other anodynes are absolutely unnecessary, which in itself is an added advantage. Complications, when they do arise, demand especial attention. In a complication we have a condition sui generis, and it should be looked after according to the approved methods.

Dr. Tasker Howard, of New York, says:

Put the patient to bed, preferably in a dry, sunny, well ventilated room. A narrow, moderately firm bed will be found to be most convenient for the attendant and comfortable for the patient, as it assures a minimum amount of movement. The patient should lie between blankets and should wear a flannel nightgown.

The affected joints should be painted with pure ichthyol and immobilized with heavily padded splints, sand bags, or some such contrivance. They should then be surrounded with several layers of wool or cotton. Sometimes more comfort will be derived from cold applications, such as the lotion of lead water and opium, or the ice bag itself.

Remembering that the patient is suffering from a toxæmia—infective or not as you wish—it becomes evident that it is important to encourage elimination. Therefore, a preliminary course of calomel and soda, given in small doses every half an hour and followed by a saline, is of advantage. With the same object in view water should be given with a free hand, particularly through the acute phase of the attack. It is a good rule to have the patient drink a whole glass of water every second hour while awake, leaving the alternate hours for nourishment.

The nourishment should be liquid while the fever lasts, milk being the most satisfactory food. This may be modified by the addition of lime water or carbonated water, or if necessary, it may be replaced by light gruels, kumyss, barley water, etc., avoiding stimulating meat broths. As convalescence is established the diet should be generously enlarged, always avoiding an excess of proteid food and zealously guarding the patient's digestive capacity.

Our most effective means of combating rheumatic fever is undoubtedly salicylic acid or its derivatives or compounds. They should be early pushed to the therapeutical limit and continued in smaller doses for some time. Sodium or strontium salicylate may be given in doses of 5 to 20 grains, every two hours, the amount depending upon the severity of the symptoms and the character of the patient. It is well to add 10 to 20 grains of sodium bicarbonate. As soon as the symptoms of salicylism appear the dose should be cut in half and gradually diminished as the symptoms subside. If the stomach will not tolerate the necessary amount of these drugs, salicin, or the oil of wintergreen, may prove less irritating. Dr. Tyson recommends rectal medication if the stomach is unretentive, in which case the dose should be doubled.

A hypodermic of morphine is often found necessary to control the pain and nervous symptoms during the height of the attack. A high temperature calls for reduction by sponging with cool or tepid water, and an ice cap applied to the head will sometimes afford much relief.

A careful watch should be maintained for complications, particularly cardiac, and the daily physical examination should never be omitted. Absolute rest during convalescence is important.

After the acute arthritic stage has passed, the affected joint may need more energetic local measures to overcome the stiffness and disability. Dry heat, massage, and electricity with counter-irritation by cantharides or iodine will be found of use. Tonics, fresh air, and sunshine, and avoidance of exposure to cold and damp are indicated during convalescence.

Dr. C. D. Silver, of Plattsburgh, N. Y., notes:

The treatment of acute articular rheumatism naturally divides itself into two parts: 1. Hygienic conditions which will add to the patient's comfort, and at the same time reduce to a minimum the chances of complication. 2. The employment of such drugs as are necessary to alleviate the symptoms referable to the disease itself.

Proper ventilation of the sick room and sanitary surroundings are of paramount importance. Fresh air should be freely admitted, but at the same time care exercised that a proper screening of the bed should obviate any chance of chilling the patient by draught. A desirable temperature of the chamber is 70° F. The body of the patient should be protected by some soft, light flannel garment. The use of fine woolen blankets upon the bed in lieu of sheets is advocated.

Rest absolute and entire is imperatively necessary, not alone during the course of the disease, but for a prolonged period after all symptoms have disappeared. Particularly in the case of children too great stress cannot be laid on this point, for in many instances serious complications arise solely for the reason that the patient has been permitted to become active on the abatement of the primary symptoms. Further, it should be borne in mind in this regard, that cardiac complications may appear long after the disease itself has seemingly passed away. If the term is allowable, activity should be "administered" with as much caution in acute articular rheumatism as solid food in typhoid. Again to draw an analogy from typhoid, the recovery of the patient is in no small degree dependent upon the efficiency of the nursing.

Pulse and temperature should be taken every three hours, charted, and vigilantly watched, for a sudden increase in the rapidity of one and the degree of the other must be regarded with grave suspicion as possible heralders of an endothelial envolvement.

Drugs.—Before outlining the treatment reference must be made to the self limitation of the disease and the fact that course of the disease is little, if at all, modified by drugs, so that the standpoint from which the drugs are employed may be fully understood. It must logically follow that the rational treatment of acute articular rheumatism is not curative, but purely symptomic. In this disease the symptom which predominates above all other is pain, therefore, the chief aim and intent of medication must be its control.

The drug which seems most effective in the alleviation of this symptom is acidum salicylicum in the form of sodii salicylas administered in combination with sodii sulphas in the following manner:

℞ Sodii salicylatis (always from ol. gaultheriæ), grs. xv-xxx;
Sodii sulphatis,.....grs. xx.
Aquæ q. s. to thoroughly dilute.

This solution is to be given every two hours until the symptom of pain is controlled, and then at the physician's discretion either modified or entirely withdrawn. Generally speaking, the use of strychnine as well as alcohol is counterindicated, yet in extreme exhaustion they should be employed freely. The imbibition of water, with or without lemon juice, in goodly quantities is recommended for the reason that it serves to carry away the products of the disease, and to compensate the fluid lost by sweating.

Occasionally some other form of acidum salicylicum may prove more efficient. Seldom has acidum salicylicum itself been employed with any marked success.

In stubborn cases which do not yield to the given treatment, we cannot help urging, in the growing light of our knowledge of this disease, the trial of antistreptococcic serum. The bacteriological theory is not yet proved; however, experience and the significent facts which the symptomatology of this disease seem to thrust upon us, warrant our advocation of this method of treatment in extreme cases.

Local Treatment.—Ichthyol ointment twenty-five per cent., or lead and opium wash may be used locally. The wrapping of the affected part in cotton batting, and when possible a splint loosely applied, will be found grateful. It has been observed that excellent results have been obtained by the employment of the German method of placing the affected part in a plaster of Paris cast.

Diet.—The diet should consist exclusively of milk and soups without a meat stock unless a marked condition of malnutrition demands a meat diet. However, this is rarely the case.

Complications.—Pericarditis, endocarditis, and myocarditis may complicate acute articular rheumatism. It may be stated briefly, however, that a systolic murmur is not to be considered diagnostic of a heart complication, unless accompanied by a sudden rise of both temperature and pulse, as it may be due entirely to hæmic changes. Pleurisy and pneumonia are rare complications, yet the inflammation of the primary disease may extend to any serous membrane.

(*To be concluded.*)

Therapeutical Notes.

A Silver Soap Used for Treating Gonorrhœa in Women.—Ipsen (*Archiv für Dermatologie und Syphilis*) reports good results in the service of K. Herxheimer in the city hospital of Frankfort on the Main, in the treatment of the various localizations of blenorrhagia in women from the use of an argentic soap, made in the following manner: The silver nitrate in crystals is dissolved in a little distilled water, and ammonia water is then added drop by drop. This produces a precipitate of silver oxide, which, in the presence of an excess of ammonia, again dissolves. To this solution is added an ammoniacal-oleic soap in sufficient quantity to form a liquid preparation representing five per cent. of silver nitrate. This solution is limpid and of a syrupy consistency, with a slight ammoniacal odor. Only irritant to a slight degree, in spite of its relatively large proportion of silver, it can be used conveniently in the treatment of gonorrhœal urethritis, cervicitis, or proctitis, and also inflammation of Bartholin's glands. As a general rule, it is diluted with four parts of water, so as to reduce it to 1 per cent. strength, but in rebellious cases stronger solutions may be used up to 4 or 5 per cent. In the treatment of urethral blennorrhœa, several times a day irrigations of the vagina with potassium permanganate (1 to 2,000) are given, and twice a day an ordinary watery solution of silver nitrate (1 to 3,000) is injected into the urethra, and once a day this canal is swabbed with the silver soap solution (1 per cent.) with some absorbent cotton wrapped on a Playfair's sound. The treatment of blennorrhagia of the cervix uteri consists in cleansing the surface with a solution of sodium biborate (5 per cent.) followed immediately by the five per cent. solution of the silver soap, applied with a sound. The same method is used in treating gonorrhœal inflammation of the rectum. In Bartholinitis an injection is made once daily by means of a blunt needle and a Pravaz syringe

of the same preparation into the excretory canal of the gland. This treatment has been used in about 2,500 cases of feminine blenorrhœa with very favorable results.

Hypodermic Mercurial Treatment of Syphilis.—Professor Gaucher, of Paris (*La Clinique*, November 2, 1906), prefers a soluble salt to the insoluble preparations of mercury for hypodermic treatment of syphilis. He generally uses the benzoate in a one per cent. solution in distilled water containing also two and a half per cent. of sodium chloride. He advises that the pharmacist be requested to prepare mercury benzoate extemporaneously by adding sodium benzoate to the yellow oxide of mercury in an acid solution. The salt thus obtained should be washed for a long time in cold distilled water or until the washings no longer redden litmus paper. Sodium benzoate of commerce is generally impure and does not dissolve readily. The solution, moreover, does not keep well when made from the commercial product, the salt commences to precipitate in a few days and the strength of the solution steadily decreases. The dose usually given is two centigrammes a day, or two cubic centimetres of the cartesimal solution. Under ordinary circumstances this quantity cannot be exceeded without causing stomatitis. If at the same time the patient be under treatment with agents which facilitate the elimination of mercury, as sulphur baths or drinking sulphur waters, larger doses may be well supported. Sulphur in some cases, therefore, is a useful adjunct to the mercury. Gaucher has also used the neutral lactate hypodermically, but believes that it has no advantage over the benzoate, and when injected it is also more painful. Cocaine may be added to the solution to reduce the pain; but as its daily use, even in small dose, may be objectionable, it is advised to use only the pure drug, with a little sodium chloride added to make it more soluble. The biniodide, as recommended by Panas, may likewise be given in this way when dissolved in oil (not being soluble in water). A little sodium iodide increases the solubility in water, so that it may be made into a cartesimal solution:

℞ Hydrargyri iodidi rubri, } .....āā 0.10 gramme;
Sodii iodidi, }
Aquæ destillatæ, ...q. s. ad 10. c.c.
M.

One cubic centimetre of this solution contains one centigramme of biniodide. It may be used in daily doses of two cubic centigrammes, like the benzoate. In a similar manner the bichloride may be given hypodermically:

℞ Hydrargyri chloridi corrosivi,.....1 gramme;
Sodii chloridi, ...0.70 gramme;
Aquæ destillatæ,.....q. s. ad 100. c.c.
M.

Of this solution only one cubic centimetre is used daily. It causes more pain than the preceding, and should only be used temporarily when the others cannot be obtained. The injections should be made with a very fine needle directly into the subcutaneous cellular tissue, and not into the muscles. For this reason long needles are not to be used. Whenever an abscess or scar is produced by these injections, it has been observed to be in cases where the injection had been made into the mass of the muscle, instead of merely under the skin. The buttock is the preferred region for the daily injections. The caution should be given to the patient to keep his mouth in good condition, in order to avoid stomatitis. Frequent rinsing with a solution of potassium chlorate (2 per cent.) or with a dilute solution of hydrogen dioxide (in three parts of water) should be resorted to. The following dentifrice should be used with a tooth brush, once or twice a day:

℞ Pulv. potassii chloratis, } .....āā 15 grammes;
Cretæ preparatæ, }
Pulv. cinchonæ, }
Phenylis salicylatis,.....2 grammes.
M. ft. pulv.

As regards the special indications for the hypodermic method of administration generally speaking, they are those calling for rapid and intensive treatment by mercury. There are (1) phagedenic chancres; (2) exuberant chancres, such as chancres on the chin; (3) all the malignant, ulcerative syphilides, whether secondary or tertiary; (4) all obstinate cases which show no improvement under the use of mercury by the mouth, or which return constantly in spite of treatment, especially palmar and lingual syphilitic lesions. These injections are also used in cases of visceral syphilis, particularly in the tertiary periods; and in nervous syphilis, principally where it is necessary to have promptness of action. Finally, it may be necessary to resort exceptionally to this method in ordinary cases where medication is poorly tolerated by the stomach, or causes dyspepsia and gastralgia, or induces intestinal troubles, such as diarrhœa or dysentery. As regards the duration of treatment, it was pointed out by Fournier that syphilis is a chronic infection, and it requires a chronic treatment, which should cover a period of four years from the time of the appearance of the primary lesion. For the first year: Two months of treatment by pills, by the mouth, or fifteen days of injections and one month of pills; or two series of twenty days each of frictions. Then for the rest of the year, treatment is given at monthly intervals, one month alternating with one month of rest. For the second year: Treatment is to be given for five months; that is, alternately as before, month after month, except in summer, when two months' respite may be given. For the third year: Four months of treatment in all are carried out, giving two months of rest after each month of treatment. For the fourth year: Two months only of treatment are given, one in the spring and one in the fall; or four periods of fifteen days each at the beginning of each quarter. In ordinary cases, after a four years' course of treatment, the patient may pass a fifth year under observation without treatment. If after the expiration of the fifth year he has not presented any symptoms for two years at least, the patient may be permitted to marry in the sixth year; but it is well to give him immediately before marriage another course of one or two months specific treatment in order to obviate the danger of procreating a syphilitic child. Finally, when the wife of such a patient becomes pregnant she should receive a mercurial treatment in the early months of gestation.

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WOMEN NURSES FOR INSANE MEN.

It is easily understood that the nursing of the insane presents problems quite different from those encountered in maintaining an efficient system of nursing ordinary hospital patients. Except in cases of casual illness, the nurse in a lunatic asylum has little occasion to train herself or himself in the duties and attentions that make up the nurse's occupation in caring for the sick and injured who are of sound mind. Hence the service is not popularly supposed to qualify a person for the general career of a nurse. Moreover, the average individual instinctively shrinks from contact with lunatics, though it is a mistake to suppose that an insane person is necessarily repulsive or even unattractive.

At the sixty-second annual meeting of the American Medico-Psychological Association, held in Boston last June, there were presented several papers dealing with the various questions connected with the nursing of the insane, and there followed a general discussion of the subject. The papers and a report of the discussion are published in the October number of the *American Journal of Insanity.* In one of the papers Dr. Charles R. Bancroft, medical superintendent of the New Hampshire State Hospital, gives excellent reasons for a more extensive employment of women nurses in men's wards than is at present resorted to. Naturally, as he says, it is absolutely necessary that the male patients should be so classified as to make the assignment of women nurses to certain men's wards safe and unobjectionable. Such a classification, he thinks, can be more successfully carried out in a small hospital than in a large one, for the supervision of the different groups of patients can be closer and individual characteristics more clearly recognized.

It is held that the presence of a refined and dignified woman exerts upon many of the insane men a wholesome and restraining influence. Those among whom women can be employed to the greatest advantage, Dr. Bancroft thinks, are the inmates of the hospital reception ward, those of the hospital ward for the physically infirm, and those of the wards for the convalescent and most intelligent insane. Among the "active and disturbed" insane women nurses had better not be employed. In all instances of course there must also be male attendants to perform certain services and to protect the women in case of need, but the woman should be in charge of the ward and the men subordinate. The women should be most carefully selected, for their fitness is due more to their character than to their attainments. Dr. Bancroft recognizes that there are many institutions in which women nurses have for years had charge of men's wards, but he thinks that it would be well to extend the practice to all lunatic asylums.

THE MALE NURSE FOR THE INSANE.

Among the papers read at the meeting mentioned was one on this subject, by Dr. George T. Tuttle, medical superintendent of the McLean Hospital, Waverley, Mass. It seems that in that institution women have long been extensively employed, but not in actual charge of men's wards, having assigned to them duties peculiarly appropriate for well bred women. There must still be male nurses, and it appears that there is increasing difficulty in obtaining men of the right stamp. Many of the men who apply for work as nurses, says Dr. Tuttle, have no intention of following the profession of nursing permanently; "they simply want a 'job,' have no real interest in the work, and look upon any systematic instruction as an accident of the service, to be tolerated but not desired." Some of them go from one institution to another in quest of "an easy place," and they may thus have learned methods which no good hospital would wish introduced into its service.

Dr. Tuttle gives the following list of reasons for the discharge of 765 men consecutively from nineteen hospitals for the insane: Intoxication, 197; abuse of patients, 132; away without permission, 66; insubordinate, 61; undesirable, 59; disobedient, 57; sleeping on duty, 47; theft, 28; untrustworthy, 27; unsatisfactory, 21; negligent,

19; untruthful, 15; unfaithful, 11; immoral, 11; entered service under false name, 8; aiding patients to escape, 4; drug habit, 2. Some of the reasons here given are expressed in rather vague terms, but it will be seen that the list is one of shortcomings mostly of a gross character in men undoubtedly chosen with great care. Therefore it must be conceded that it is very difficult to obtain unobjectionable male attendants for the insane.

Training schools for asylum nurses do not seem to be as satisfactory in some respects as those for general hospital nurses. Dr. Edward B. Lane, formerly medical superintendent of the Boston Insane Hospital, contributed a paper on this subject. In the course of his paper he says: "There is a vast amount of necessary routine work that is done by the old fashioned attendant more satisfactorily than by the young pupil nurse who is, in accordance with training school ideas, assigned in rapid rotation to various posts of duty." It looks as if the increasing difficulty of obtaining proper male nurses for the insane would contribute powerfully to promote the more extensive employment of women.

"PASTORAL" MEDICINE.

When Ibsen, in his drama of *Ghosts*, indicated that the narrow ideals of sacrifice and duty set forth by a well meaning but ill informed pastor were the chief causes of the final tragedy, he was amazed at the criticism and opprobrium that were heaped upon him. The pastor of the play persuades the outraged wife to return to her dissolute and debauched husband. She does so, and becomes the mother of a son who is infected from his birth with disease and meets a fearful but perfectly logical fate. The commotion and excitement of the clergy revealed the prevalent ignorance of the church at large concerning the actual facts of hereditary disease and morality as we physicians see them.

It is difficult for the clergy, weighted with the care of souls and the sorrows of their people, to be students of medicine, and yet they are almost as often admitted to the secrets of their parishioners as the physician is. Generally these secrets have to do with the sorrows or problems that arise from disease, and frequently their intelligent cooperation is needed to persuade a patient that the physician's advice is sound. Whether it is a question of the treatment of a depressed or a paretic person, the prognosis regarding a drug habit, the advisability of an operation, or the morality of marriage under conditions of disease, the priest or pastor is apt to have his say in the decision, and he may prove a help or a stumbling block, according to his enlightenment or lack of it.

The *Essays in Pastoral Medicine*, by Dr. Austin O'Malley and Dr. James J. Walsh (Longmans, Green, & Co.), although addressed to the priesthood of the Roman Church, would enlighten clergymen in general on many points, so that they might give counsel with the authority of knowledge rather than from sentiment. The brief, succinct, but comprehensive descriptions of disease are such that the pastor, who as a rule knows nothing of his parishioners' diseases and their prognosis except what he hears from the family, may get a fairly clear idea of the inevitableness of death in particular instances, the danger of contagion for himself and others, and the vast moral responsibility that exists in letting some diseases go untreated and in permitting persons to marry under certain conditions.

In these days of specialization it is common to find in the cleverest men the densest ignorance concerning some topics. We find the most famous divines, lawyers, and mechanicians consulting quacks, and we know that some of the ablest physicians are densely ignorant of the literary, artistic, or ecclesiastic world. So keen is each man to-day in his own field that he fancies such narrowness is one of the elements of success, and rather prides himself upon his ability to withstand the temptations of general culture. Little by little, however, it is being forced upon educated men that a knowledge of the laws of health is a fundamental acquisition which cannot be obtained otherwise than from the medical profession. The good physician has carried his propaganda into the home and school and church, until now the value of sound medical advice is appreciated in all undertakings which have to do with the community at large. Nevertheless, the actual knowledge possessed by the laity concerning disease is very meagre and is generally limited to the individual's interest in some personal and particular branch of disease. It cannot but have a wholesome and enlightening effect for any largely responsible person, such as a pastor, an editor, a lawyer, a teacher, or a parent, to read such essays as Dr. O'Malley and Dr. Walsh have prepared.

THE EXPERIMENTAL ANALYSIS OF THE GROWTH OF CANCER.

The question of the continuous or interrupted nature of cancerous propagation is of fundamental importance, both from the standpoint of the pathogenesis of cancer and from that of its treat-

ment. It has been assumed that the growth is purely vegetative. Bashford, Murray, and Bowen (*Proceedings of the Royal Society*, lxxviii) have made 25,000 inoculations of Jensen's tumor in mice and a number of inoculations with thirty-two other mouse tumors during the past three years. They find that when a number of animals are inoculated with a transplantable mouse tumor, all do not acquire tumors, and the tumors which develop are not all of the same size after the same interval. Irregularities in the rate and the amount of growth are produced, first, by transfer from one race of mice to another, even when the two races are nearly allied; second, by transfer from young to old mice of the same race, or *vice versa;* third, by variations in the site of transplantation of the cancerous tissue; fourth, by variations in the amount of tissue implanted and in the manner of its introduction; and, fifth, by variations in the characters of the tumor cells. In all endeavors to determine these variations in the growth of a transplanted cancer dependent upon the different characteristics of the tumor cells, the variations depending upon the first four factors must first be eliminated. Consequently, in the work under discussion the authors have used the same race of mice throughout their experiments; the mice have been of uniform age; the same site for inoculation has been used invariably; and healthy looking pieces of tissue have been transplanted by means of hypodermic needles. When these conditions are maintained, uniform fluctuations in the growth of the transplanted tumors occur, which the authors believe to be natural features of proliferation.

The experimental tumors consist of a parenchyma arranged in alveoli. After transplantation, the single alveoli at first constitute separate centres of growth. As these alveoli continue to grow and give off daughter alveoli at the surface, transplantation of fragments is likely to give rise to cells closely related to each other, so that in the course of repeated transplantations the new tumors represent the entire original tumor in a progressively declining ratio. The experiments have repeatedly shown a gradual rise of transplantability, followed by a fall. The behavior of the component parts of a tumor propagated in a large number of animals represents what may be regarded as occurring simultaneously in different parts of a single tumor allowed to grow for a long time in one animal. In some parts growth will be proceeding actively; in other parts it will be proceeding slowly, or, indeed, it may cease. The spontaneous absorption of the whole of a transplanted tumor is rare. In the living animal it is preceded by cessation of growth, and then the size of the tumor begins to diminish. Histologically, at this period the parenchyma is found to be broken up into small masses and often surrounded by a zone of large phagocytes, external to which there is an overgrowth of sclerosing connective tissue. The process is similar to that observed by Cramer (*Second Scientific Report of the Imperial Cancer Research Fund*, ii) in tumors which have disappeared under the action of radium. The relation of spontaneous absorption to a definite phase in the fluctuation of transplantability is close. The study of the effects of transplantation of these tumors has led the authors to the conclusion that the process of proliferation is a cyclical manifestation, and not a purely vegetative phenomenon.

AGE LIMITATIONS OF SPORT.

There has been some discussion in English and American periodicals recently with regard to what is spoken of as the "dead line" in sport, that is, the age at which a man must cease to take part in a particular sport if he would not subject himself to the risk of injury because the action of time upon his tissues has put them into a condition in which it would be dangerous. Some of these suggested limitations can scarcely fail to be of interest to physicians, because they are likely to be consulted with regard to the possible dangers involved in the continuance of indulgence in certain sports after the years of youth have passed. It is considered that thirty is about the age limit for football, and indeed athletic directors are of the opinion that it must not be indulged in much after twenty-five, that is, after the individual has attained his full growth, usually at about twenty-three, and the tissues have begun to harden. It is thought that cricket may be played without danger until forty, provided the heart and lungs are in good condition. It is admitted, however, that the best cricket player in England at the present time is over sixty, and there have been many other examples in previous generations of the same ability to play the game at least until the player is well on in the fifth decade of life.

With regard to the typically American sports, there is even more difference of opinion. Forty is usually considered to be about the age limit for baseball, but there are many good players beyond this age who seem not to be at all distressed physically by the game. It is generally conceded, however, that for a man who has not played the game for a number of years to indulge in it with any enthusiasm after the age of forty is very frequently fraught with serious results. Physicians in attendance at universities, who are occasionally

called to see some of the "old boys" who come back and allow themselves this indulgence, are convinced that forty is the limit beyond which baseball must not be played. For tennis the age is higher, running up to fifty at least, and moderate indulgence being allowed the healthy individual until the end of the sixth decade. Tennis is one of the games in which the individual is not pushed into play except by his own anxiety to win, and so there is much less likelihood of excess in it.

With regard to golf, it is universally conceded that it is preeminently the game most suitable for those of middle age and beyond it. Professor Clifford Allbutt is said to have declared that no one should play golf until he was thirty-five. The age limit of the game has not been decided as yet. Scotchmen of eighty, if in good health, still continue to enjoy their afternoon on the links, and there are any number of septuagenarian players in England and America. It is of excellent therapeutic quality for individuals beyond middle life who find it difficult to remain in the open air unless they have some definite occupation, who do not care for horseback riding, or who did not begin it when they were young, but whose physical condition demands gentle outdoor exercise. Many an old man who has begun to feel himself breaking up has been almost rejuvenated by devotion to the game. It seems probable that the game is to prove one of the newer elements in that revival of physical therapeutics which is becoming so popular in recent years.

THE MAN ON "DETAIL WORK."

It is well known that one of the ways in which the manufacturers of pharmaceutical preparations and surgical appliances advertise their wares is by means of traveling agents whose duty it is to call on medical men and point out to them the meritorious features of the products which they have in charge. This service is known in the trade as "detail work." It is by no means a dishonorable occupation, though it may sometimes be rendered humiliating to the man who is attempting to make a living by it. Physicians of solid attainments recognize the fact that the medical profession is much indebted to the manufacturers for improved means of treating disease and injury, they realize that they can often learn something from the manufacturers' traveling representatives, and they know that a man who behaves well deserves to be treated decently. It is only the few cads in our profession who systematically treat the "detail" man with scant civility or downright contumely.

The man who does "detail work" is almost always a gentleman—often a medical student and not infrequently an experienced physician. As a rule he has examined the articles which he has to talk about, and he would not lower himself by undertaking to exploit those which he did not believe to be meritorious. He is courteous and he is tactful. He does not force himself upon an overworked or preoccupied practitioner. If he finds the reception room well peopled, he waits modestly till every patient has been attended to; if it is crowded, he even withdraws quietly with the purpose of seeking a more suitable opportunity on a subsequent occasion. When he finds himself in the presence of the physician, he tells his story clearly, briefly, and without ostentation. He makes a good impression and furthers his employer's interests.

But there is another kind of "detail" man, perhaps not different by any fault of his own, but rather by reason of his employer's requirements. He is under obligation to see a certain average number of medical men daily. If he fails to do so, he fears that his services will be found unsatisfactory. Hence he is pushing. Possibly he has "M. D." engraved on his card and sends it in with the covert purpose of getting himself admitted in advance of the patients who are waiting. If he gains his point, he declaims an harangue which he has learned by rote, the burden of it being to instruct the doctor, and the latter is fortunate if his visitor does not whip out a few test tubes and beakers and a spirit lamp and proceed to give a demonstration of some elementary facts in chemistry and physiology. Such a man makes himself a bore, to say the least, but even he does not deserve to be treated roughly, though we must say that coolness toward him is not out of place. It must be only an inexperienced manufacturer who authorizes such conduct on the part of an employee.

Obituary.

WILLIAM M. ANGNEY, M. D.,
OF PHILADELPHIA.

Dr. Angney died in the Pennsylvania Hospital on Monday, November 19th, of carcinoma of the stomach, after an illness of several months. Born in 1855 he received his education in the Philadelphia public schools, graduating from the Central High School. He then entered the Jefferson Medical College, from which he was graduated in the class of 1882. Subsequently he performed the duties of interne at the Philadelphia General Hospital for one year. In 1898 he was appointed a medical inspector in the Bureau of Health and was active during the smallpox epidemic of 1902. On July 1, 1902, Mayor Ashbridge appointed him chief surgeon of the

Bureau of Police. He held this position until the time of his death. During his professional career Dr. Angney has been connected with the Episcopal City Mission, the Hospital for Diseases of the Lungs at Chestnut Hill, and the Hospital for Male Consumptives of the House of Mercy. He was a member of the Philadelphia County Medical Society, the Medical Society of the State of Pennsylvania, the American Medical Association, the Philadelphia Obstetrical Society, and the Association of Military Surgeons of the United States. His funeral, which was held on Thursday, November 22nd, was largely attended. A detail of police and firemen were present, representing the departments of the city government with which he was connected.

WILLIAM H. CHANDLER, PH. D.,
OF SOUTH BETHLEHEM, PA.

Dr. Chandler, who was emeritus professor of chemistry in Lehigh University, died at his home on Friday, November 23rd, aged sixty-five years. For the last few years his health had been decidedly impaired, and his death was not unexpected. Though he was not a member of the medical profession, he was intimately associated with physicians, and he was particularly active in promoting the welfare of St. Luke's Hospital, in South Bethlehem. He was a chemist and mineralogist of exceptional attainments and a man of unusual humor and geniality. He was the editor of an excellent *Cyclopædia of Universal Knowledge.*

News Items.

NEW YORK CITY AND STATE.

Change of Address.—Dr. William V. P. Garretson, to No. 1 West Sixty-ninth Street, New York.

The Working Women's Protective Union.—At the recently held annual meeting of this society, Dr. Henry Dwight Chapin, of New York, was elected president. The object of the organization is to prevent and punish frauds upon working women.

Lectures on Locomotor Ataxia.—On Mondays and Fridays, at 1.30 p. m., during the month of December, Dr. H. S. Frenkel, of Heiden, Switzerland, will give a series of clinical lectures and demonstrations at the New York Polyclinic, of his method of reeducational and compensatory treatment of ataxics, or teaching tabetics to stand and walk.

The Long Island Society of Anæsthetists will hold a meeting at the Cumberland Street Hospital, Brooklyn, on Tuesday, December 4th at 8.30 p. m. Dr. A. H. Longstreet will speak of the Gas-Ether Sequence with the Bennet Inhaler; Dr. Clark Burnham will speak of the C. E. Method Employed at the Cumberland Street Hospital; and Dr. Pedersen will exhibit a new gas-ether inhaler.

Personal.—Dr. F. E. Daniel, of Austin, Texas, editor of the *Texas Medical Journal,* was in New York recently attending the International Tuberculosis Congress, at which he presided. Dr. Daniel also made arrangements while here for the dramatization of his recently published story, *The Strange Case of Dr. Bruno.*

Dr. L. W. Bremerman, of New York, has been appointed professor of genitourinary diseases in the New York School of Clinical Medicine, to fill the vacancy caused by the death of Professor William K. Otis.

The Sydenham Hospital.—At the annual meeting of the directors of this hospital, held on Thursday, November 22nd, Mr. Isaac Guggenheim announced that he would erect for the institution a $500,000 new building if the board would guarantee to secure an income of $50,000 or $60,000 a year. Mr. Guggenheim also gave the directors $60,000, which he had collected to pay the expenses of the institution. Of this he subscribed $10,000. Steps to fulfil the condition of his proferred gift will be taken immediately.

A Memorial Tablet to Dr. Walter Reed.—The Kings County Hospital Alumni Association has placed a bronze tablet 4 x 3 feet in the institution at Flatbush to the memory of the late Dr. Walter Reed, a former interne of the hospital. The tablet bears this inscription: "Erected by the Association of Ex-Internes of the Kings County Hospital to the memory of Walter Reed, M. D., interne in this hospital, 1871, Major and Surgeon, U. S. A., chairman United States Yellow Fever Commission, 1900-1901. He robbed the pestilence of its terrors and caused the cities of the Southland to sit in peace within their gates."

The Buffalo Academy of Medicine.—The programme for a meeting of the *Section in Surgery,* to be held on Tuesday, December 4th, is as follows: The General Principles of Surgery from the Standpoint of Internal Medicine, by Dr. A. L. Benedict; Treatment of the Stump in Operations for Appendicitis, by Dr. Vertner Kenerson.

The *Section in Medicine* will furnish the following programme for a meeting to be held on Tuesday, December 11th: The Acute Infectious Paralyses, by Dr. James W. Putnam; Medical Ethics Within and Without the Profession, by Dr. John D. Bonnar.

The Centennial of the Medical Society of the County of Herkimer was celebrated with a banquet at Herkimer, on Monday, November 19th. The present officers of the society are: President, Dr. Adelbert C. Douglass, of Ilion; first vice-president, Dr. John B. Ellis, of Little Falls; second vice-president, Dr. L. L. Brainard, of Little Falls; third vice-president, Dr. E. G. Kern, of Herkimer; secretary, Dr. A. Walter Suiter, of Herkimer; treasurer, Dr. George Graves, of Herkimer; librarian, Dr. F. B. Casey, of Mohawk; censors, Dr. William D. Garlock, Dr. O. H. Deck, Dr. S. S. Richards, Dr. George M. McCombs, Dr. Charles Joseph Diss.

The New Nurses' Building for Bellevue Hospital.—Plans have been filed for a new six story fireproof training school for women nurses, to be erected for Bellevue and the allied hospitals, on Twenty-sixth Street, east of First Avenue, running through the block to Twenty-fifth Street. It is to have a frontage of 151 feet and a depth of 194½ feet, with façades of brick, with trimmings of granite and limestone. The main floor will contain the assembly hall and a dining hall, and the second floor will have a laboratory. The other floors will be fitted with sleeping chambers, and there will be a roof garden, with a pergola ornamented with terra-cotta columns. The building is to cost $575,000.

The Queens-Nassau Medical Society.—The semiannual meeting of this society will be held in the surrogate's court room, Jamaica, on Wednesday afternoon, December 5, 1906. The programme is as follows: Paper: Pelvimetry in Obstetrics, with exhibition of a new instrument, Dr. Sidney D. Jacobson, of New York; Paper: Enteric Intoxication as a Cause of Nephritis, Dr. Harris A. Houghton, of Bayside; the president's address, upon the topic, What Can Be Done to Make the Society of Greater Interest and Benefit? This will be the last meeting under the present officers, those elected last June taking office January 1, 1907. These are: President, Dr. Irving F. Barnes, of Oyster Bay; vice-president, Dr. John H. Barry, of Long Island City; seceretary-treasurer, Dr. James S. Cooley, of Glen Cove.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending November 24, 1906:

	November 24.		November 17.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	115	20	108	14
Smallpox	2	..	1	..
Varicella	79	..	46	..
Measles	112	5	72	3
Scarlet fever	119	7	115	5
Whooping cough	86	4	90	8
Diphtheria	298	43	253	36
Tuberculosis pulmonalis	307	158	373	176
Cerebrospinal meningitis	9	14	21	8
Totals	1,127	251	1,079	250

Society Meetings for the Coming Week:

MONDAY, *December 3rd.*—Morrisania Medical Society, New

York (private); Brooklyn Anatomical and Surgical Society (private); Corning, N. Y., Academy of Medicine; Utica, N. Y., Medical Library Association; Boston Society for Medical Observation; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., Medical Society; South Pittsburgh, Pa., Medical Society; Chicago Medical Society; Niagara Falls Academy of Medicine (private); Practitioners' Club, Newark, N. J.

TUESDAY, *December 4th.*—New York Neurological Society; German Medical Society, Brooklyn, N. Y.; Buffalo Academy of Medicine (Section in Surgery); Elmira, N. Y., Academy of Medicine; Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Association of Troy and Vicinity; Hornellsville, N. Y., Medical and Surgical Association; Long Island, N. Y., Medical Society; Hudson, N. J., County Medical Society (Jersey City); Androscoggin, Me., County Medical Association (Lewiston); Baltimore Academy of Medicine; Medical Society of the University of Maryland.

WEDNESDAY, *December 5th.*—Harlem Medical Association, New York; New York Genitourinary Society; Psychiatrical Society of New York (private); Society of Alumni of Bellevue Hospital, New York; Medical Microscopical Society of Brooklyn; Medical Society of the County of Richmond, N. Y. (New Brighton); Penobscot, Me., County Medical Society (Bangor); New Haven, Conn., Medical Association; Elmira, N. Y., Academy of Medicine.

THURSDAY, *December 6th.*—New York Academy of Medicine; Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua; Boston Medicopsychological Association; Obstetrical Society of Philadelphia; United States Naval Medical School (Washington); Medical Society of the City Hospital Alumni, St. Louis; Atlanta Society of Medicine.

FRIDAY, *December 7th.*—New York Academy of Medicine (Section in Surgery); New York Microscopical Society; Gynæcological Society, Brooklyn; Manhattan Clinical Society (private); Practitioners' Society of New York (private); Baltimore Clinical Society.

SATURDAY, *December 8th.*—Obstetrical Society of Boston (private).

PHILADELPHIA AND THE MIDDLE STATES.

The Philadelphia Polyclinic and College for Graduates in Medicine held donation day on Friday, November 23rd.

Franklin Institute.—Mr. Harvey M. Watts lectured before the Franklin Institute on Wednesday, November 21st, on the Why of the Weather.

The Children's Hospital of Philadelphia held donation day on Wednesday, November 21st. About $1,400 in money was received, in addition to gifts of supplies, clothing, etc.

The West Penn Hospital of Pittsburgh, Pa., proposes to buy from the central board of education of Pittsburgh a property known as Friendship Park. It is the intention of the hospital trustees to erect a modern hospital on this property.

Pittsburgh Municipal Hospital.—It is reported that the city of Pittsburgh is about to build a new municipal building, in connection with which it is suggested that a municipal and emergency hospital be constructed. No definite plans have yet been made.

Philadelphia Municipal Hospital Census:

	Remaining last report.	Received.	Discharged.	Died.	Remaining.
Diphtheria	53	108	80	11	70
Scarlet fever	51	44	34	2	59
Other diseases	0	1	0	0	1

Typhoid from Infected Milk.—At the meeting of the Northeast Branch of the Philadelphia County Medical Society, on November 19th, Dr. S. M. Hamill spoke about the milk supply of Philadelphia, which he declared is in a very bad condition. It is reported that many local epidemics of typhoid fever have been traced to infected milk.

Philadelphia Personals.—Dr. H. D. Watson, of Cincinnatus, N. Y.; Dr. J. Stitzel, of Hollidaysburg, Pa.; Dr. John F. Rowland, of Hot Springs, Ark.; Dr. H. W. Sheets, of South Bethlehem, Pa.; Dr. G. G. Marshall, of Wallingsford, Vt.; Dr. R. J. Meigs, of Laurel, Mass.; Dr. J. W. Gracy, of Uhrichsville, Ohio; Dr. George F. Seiberling, of Allentown, Pa.; and Dr. W. A. Chamberlin, of Waseka, Minn., are registered at the Philadelphia Polyclinic and College for Graduates in Medicine.

Nurses' Training School of the Philadelphia Orthopædic Hospital.—The annual commencement exercises of the Nurses' Training School of the Philadelphia Orthopædic Hospital were held on Friday, November 20th, at Seventeenth and Summer streets. Dr. S. Weir Mitchell presented the diplomas. Miss Bessie Ida Goodrich, who won the highest marks in her examinations, received a pin bearing the official insignia of the hospital. The diploma of the hospital was conferred upon nine other young women.

Charitable Bequests.—By the will of Charlotte Lux, the Frederick Douglass Hospital receives $7,000 for the endowment of a free bed in memory of the testatrix's husband. By the will of Alice Murphy, the Little Sisters of the Poor receive $500, and St. Joseph's Home for Homeless Boys and St. Vincent's Home receive $100 each. By the will of Mrs. Mary K. Wood, who died in Norristown, Pa., recently, the Southern Home for Destitute Children, the Home for Incurables, and the Charity Hospital become residuary legatees in the event of the death of certain grandchildren without issue. In the will of Catharine Babler, there are contingent bequests of $100 each to the Southern Home for Destitute Children and the Friends' Home for Children.

The American Society of Tropical Medicine will hold a meeting in the building of the College of Physicians, Thirteenth and Locust streets, Philadelphia, on Friday, December 7th, at 8.15 p. m. There will be a symposium on the relation of mosquitoes to disease. Professor John B. Smith, of Rutgers College, New Brunswick, N. J., will speak on Mosquitoes in Relation to the Public Health. Mr. H. L. Viereck, of the Pennsylvania State Board of Health, will speak on the Mosquitoes of Pennsylvania. Dr. Joseph McFarland, of Philadelphia, will speak on the Mosquito Phase of the Life History of the Human Parasites. Dr. John M. Swan, of Philadelphia, will describe the organization and management of the London School of Tropical Medicine.

The Philadelphia Clinic for Home Treatment of Chest and Throat Diseases, 519 South Fifteenth Street, Philadelphia, has recently opened evening clinics, in addition to the day clinics which have been running since last March, for free treatment to the 3,000 among the 9,000 consumptives living in this city all the time, and who annually earn over $1,000,000, but who, without medical care, will in a few years become unfit to work, and in all probability many of them will have to be maintained in hospitals, at an added expense of another $1,000,000, making a total loss in wages and in cost of maintenance of over $2,000,000 a year. The object is to lighten the struggle of these people during this trying period of their life, to help save their wages, and to forestall the danger of becoming public charges. Dr. Frank Read is president of the board of managers, and Dr. Thomas J. Mays is medical director of this institution.

The Health of Philadelphia.—During the week ending November 17, 1906, the following cases of transmissible diseases were reported to the bureau of health:

	Cases.	Deaths.
Malarial fever	4	0
Typhoid fever	130	20
Scarlet fever	23	1
Chickenpox	43	0
Diphtheria	71	10
Cerebrospinal meningitis	1	0
Measles	44	4
Tuberculosis of the lungs	95	60
Pneumonia	60	63
Erysipelas	5	1
Trachoma	1	0
Septicæmia	6	0
Cancer	19	26

The following deaths from other transmissible diseases were reported: Tuberculosis, other than tuberculosis of the lungs, 12; diarrhœa and enteritis, under two years of age, 20; puerperal fever, 2. The total mortality was 473 in an estimated population of 1,469,126, corresponding to an annual death rate of 16.74 in a thousand of population. The total infant mortality was 90; under one year of age, 74; between one and two years of age, 16. There were 31 still births, 18 males and 13 females. The total precipitation for the week was 0.99 inch. On the 15th there was a moderate fall of snow. The weather on the whole was cloudy, the temperatures seasonable, and the humidity moderate.

Scientific Society Meetings in Philadelphia for the Week Ending December 8, 1906.—*Monday, December 3rd,* Philadelphia Academy of Surgery; Biological and Microscopical Section, Academy of Natural Sciences; West Philadelphia Medical Association; Northwestern Medical Society. *Tuesday, December 4th,* Academy of Natural Sciences; Philadelphia Medical Examiners' Association; Kensington Branch, Philadelphia County Medical Society. *Wednesday, December 5th,* College of Physicians; Association of Clinical Assistants of Wills Hospital. *Thursday, December 6th,* Obstetrical Society; Medical Society of the Southern Dispensary; Section Meeting, Franklin Institute; Northwest Branch, Philadelphia County Medical Society; Section in Gynæcology, College of Physicians. *Friday, December 7th,* American Society of Tropical Medicine; American Philosophical Society.

BOSTON AND NEW ENGLAND.

A Hospital Car.—One of the most recent inventions for the convenience of transportation of invalids, and with all the requisites of the model sick room, has been installed by the Boston & Maine Railroad Company. This car, says the Boston *Journal* for November 22nd, is as near perfect for the use for which it is intended as human ingenuity can devise.

The Mortality of Boston.—The number of deaths reported to the board of health for the week ending November 17th was 203, as against 169 the corresponding week last year, showing an increase of 34 deaths, and making the death rate for the week 17.58. The number of cases and deaths from infectious diseases was as follows: Diphtheria 59 cases, 2 deaths; scarlatina, 17 cases, 1 death; typhoid fever, 46 cases, 3 deaths; measles, 6 cases, no deaths; tuberculosis, 38 cases, 18 deaths; smallpox, no cases, no deaths. The deaths from pneumonia were 29, whooping cough 1, heart disease 30, bronchitis 2, marasmus 5. There were 9 deaths from violent causes.

Avenue Louis Pasteur, is the name of the boulevard which the city of Boston is to build in front of the new Harvard Medical School buildings. The name was adopted at a meeting of the street commissioners, on Tuesday, November 20th, in deference to the wishes of President Eliot, of Harvard University, and others prominent in the educational world. The matter had been given a great deal of attention and practically the names of all prominent in the medical history of the country had been considered. It was found that nearly all prominent Americans had received recognition of some sort from Bostonians, so it was decided to recognize the distinguished Frenchman.

Public Bequests.—By the will of Charles Merriam, of Boston, bequests are made as follows: To the Massachusetts general hospital, $5,000; the Massachusetts charitable eye and ear infirmary, $5,000; the children's hospital, $2,500; the Boston home for incurables, $1,000; the children's island sanitarium, $1,000; the New England home for incurables, $1,000; The Thomas Morgan Rotch, Jr., emergency hospital for infants, $1,000; the convalescent home for children's hospital, $1,000; the Boston lying-in hospital, $1,000; the free hospital for women, Brookline, $1,000, and the Sharon sanatarium, $1,000. By the terms of the will of Samuel A. Brown, of Laconia, N. H., the Laconia hospital will receive the income of an estate estimated at about $25,000.

BALTIMORE AND THE SOUTH.

The Floyd County, Georgia, Medical Society.—The programme for a meeting of this society, held at Rome, on Saturday, November 24th, included a report of three gynæcological cases, by Dr. H. H. Battey.

The Richmond Academy of Medicine and Surgery.—At a meeting of this academy, held on Tuesday, November 27th, the following programme was presented: Present Value of the X Ray in Diagnosis, by Dr. A. L. Gray; discussed by Dr. Enion G. Williams. Medical Reminiscences of Richmond for Forty Years, by Dr. J. N. Upshur.

The Middle Tennessee Medical Association.—At a meeting of this association, held at Shelbyville, on Friday and Saturday, November 16th and 17th, officers were elected as follows: President, Dr. W. G. Priorson, of Shelbyville; vice-president, Dr. Richard Douglas, of Nashville; secretary, Dr. W. A. Litterer, of Nashville. The next meeting of the association will be held at Murfreesboro in May, 1907.

The Mortality of Baltimore.—The report of the Health Department for the week ending November 17th, showed a total of 187 deaths, as compared with 187 the corresponding week of last year, 190 in 1904, and 179 in 1903. The annual death rate in 1,000 of population was: White, 14.16; colored, 31.32; whole, 16.87. The principal causes of death were:

Typhoid fever	4	Bronchitis	6
Diphtheria	3	Pneumonia	16
Consumption	24	Bright's disease	19
Cancer	7	Congenital debility	22
Apoplexy	4	Old age	6
Organic heart disease	16	Accidents, etc	13

The nativity of the decedents was: United States, 103; foreign, 29; colored, 53; unknown, 2. The births reported were 109. The following number of cases of infectious diseases were reported, compared with the corresponding period of last year:

	1905.	1906.		1905.	1906.
Diphtheria	16	32	Measles	3	3
Pseudomembranous croup	2	0	Mumps	0	2
Scarlet fever	15	10	Whooping cough	4	1
Typhoid fever	16	7	Chickenpox	5	3
			Consumption	6	19

CHICAGO AND THE WEST.

The Nicholas Senn Club, of Chicago.—On Saturday, December 8th, Dr. Carl Beck, of New York, will be the guest of honor at a banquet to be given by this club.

The Blue Earth County, Minnesota, Medical Society.—On the evening of Monday, December 3rd, this society will entertain, at Mankato, the *Brown and Redwood County Medical Association,* the programme to be furnished by the members of the latter association.

The Minnesota Valley Medical Society will hold its twenty-seventh annual meeting at Mankato, on Tuesday, December 4th, with the following programme: President's address, Dr. M. Sullivan, Adrian; Higher Educational Qualifications for the Study of Medicine, Dr. F. N. Hunt, Blue Earth; Treatment of Traumatic Gangrene of the Extremities, Dr. Van Buren Nott, of Sioux City, Iowa; Two Cases of Endothelial Sarcoma of the Brain; Successful Removal and Subsequent Death, Dr. C. E. Riggs, St. Paul; Some Signs and Symptoms of Gallstones with Complications, Dr. Warren A. Dennis, St. Paul; Fibroid Tumors with Special Reference to Their Interference with Pregnancy, Dr. Archibald MacLaren, St. Paul; The Surgical Treatment of Bunions, Dr. C. H. Mayo, Rochester; Significance of Delirium in Typhoid Fever; Report of a Case, Dr. H. A. Tomlinson, St. Peter.

Statement of Mortality of Chicago for the Week Ending November 17, 1906, compared with the preceding week and with the corresponding week of 1905. Death rates computed on United States Census Bureau's figures of midyear populations, 2,049,185 for 1906, 1,990,750 for 1905:

	Nov. 17, 1906.	Nov. 10, 1906.	Nov. 18, 1905.
Total deaths, all causes	584	514	510
Annual death rate in 1,000	14.86	13.08	13.35
Sexes—			
Males	330	292	302
Females	254	222	208
Ages—			
Under 1 year of age	89	96	76
Between 1 and 5 years of age	46	54	32
Between 5 and 20 years of age	48	26	39
Between 20 and 60 years of age	272	237	240
Over 60 years of age	129	101	123
Important causes of death—			
Apoplexy	15	9	15
Bright's disease	45	35	41
Bronchitis	18	10	17
Consumption	60	66	70
Cancer	30	22	31
Convulsions	8	13	10
Diphtheria	19	19	13
Heart diseases	58	36	36
Influenza	3	1	1
Intestinal diseases, acute	30	34	17
Measles	1	3	1
Nervous diseases	14	24	21
Pneumonia	84	68	77
Scarlet fever	16	6	2
Suicide	9	6	8
Typhoid fever	12	10	4
Violence (other than suicide)	30	32	29
Whooping cough	9	3	0
All other causes	123	117	117

GENERAL.

The American Public Health Association will hold its annual meeting at Mexico City, on Monday, Tuesday, Wednesday, Thursday, and Friday, December 3rd, 4th, 5th, 6th, and 7th, under the presidency of Dr. F. C. Robinson, of Brunswick, Me. Dr. C. O. Probst, of Columbus, Ohio, is the secretary of the association.

Pith of Current Literature

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

November 24, 1906.

1. The Causative Factor in the Production of the Dermatitis of Ground Itch (Uncinariasis), By CLAUDE A. SMITH.
2. Examination and Surgery of Upper End of Œsophagus, By HARRIS TAYLOR MOSHER.
3. Modification of the Simple Mastoid Operation which Shortens Convalescence by Facilitating Wound Repair, By E. M. PLUMMER and H. H. GERMAIN.
4. A Pathological Study of Seven Cases of Paralysis Without Gross Anatomical Change in Relation to the Cause or Causes of Uræmic Hemiplegia, By JOHN H. W. RHEIN.
5. Hernia of the Ovary and Tube, By FRANK T. ANDREWS.
6. Affection of the Spinal Cord in Epileptics, By WILLIAM N. BULLARD.
7. Maniacal Oppressive Insanity and Visceral Disease, By HENRY S. UPSON.
8. The Opsonic Index in Medicine (*To be continued*), By NATHANIEL BOWDITCH POTTER, NORMAN E. DITMAN, and ERNEST B. BRADLEY.
9. Certain Facts Concerning Faucial Tonsils, By CHARLES M. ROBERTSON.
10. The Odor as a Guide in the Treatment of Chronic Suppuration of the Middle Ear, By H. GRADLE.
11. Constitutional Low Arterial Tension in Children, By LOUIS FAUGERES BISHOP.

1. The Causative Factor in the Production of the Dermatitis of Ground Itch (Uncinariasis).—Smith has made an alcoholic extract from larvæ of *Uncinaria americana,* which extract when brought upon the skin produced the symptoms of a mild type of uncinariasis. From his experiments it would appear that the larvæ produces some substance which is very irritating to the skin, with a tendency toward vesicle formation. The reason that the itching was not so pronounced can be found in the fact that in his experiments the substance was simply placed on the surface of the skin, while when the living larvæ penetrate the skin they evidently secrete the substance directly into the subcutaneous tissues, as well as into the skin. The substance itself has not as yet been obtained in sufficient quantity to attempt to recognize it. It appears to act somewhat as the toxicodendrol of *Rhus toticodendron.*

2. The Examination and Surgery of the Upper End of the Œsophagus.—Mosher describes certain points in the applied anatomy of the œsophagus, and a speculum and a set of instruments for examining the upper end of the œsophagus and the larynx, and for working in this locality. The speculum is Kirstein's tongue spatula developed into a bivalve speculum. In place of three hoods, the instrument has a single adjustable hood. Both the width and length of this can be regulated. The long arm of the speculum is of sufficient length to pass by the epiglottis, and to reach the middle of the back of the cricoid cartilage. This can be elevated so that the cricoid cartilage is pushed forward, and the upper end of the œsophagus exposed. This instrument is of use also for examining and operating on the larynx by the direct method. The advantage of examining and working on the lower part of the pharynx and the upper end of the œsophagus through a speculum of this kind rather than to work through an œsophageal tube is the possibility of having the whole field in view at once. With the tube the work is being done through a keyhole, with the speculum as through a window.

3. Modification of the Simple Mastoid Operation Which Shortens Convalescence by Facilitating Wound Repair.—Plummer and Germain describe their method of operation, the benefit from which they assert to be the shortening of convalescence, and the cosmetic effects, as no deformity whatever results from it. They report ten cases, of which the best results as to time of recovery, including complete healing of the wound, were obtained in seven days in one instance, while the longest period of convalescence was seventeen days. By their method the bony cavity is practically disposed of, and hence union by first intention, instead of healing by granulation. When the gauze packing has been completed, the mastoid incision is closed with sutures and the usual dressings are applied; the small gauze wick being allowed to remain in position until the soft parts are adherent to the bony walls. Adhesion is usually looked for at the first dressing subsequent to the operation.

4. A Pathological Study of Seven Cases of Paralysis Without Gross Anatomical Change.—Rhein concludes that the small areas of softening which he describes in his paper are often the cause of hemiplegias or double hemiplegias, which have not been associated with any gross anatomical change. Extensive histological studies of the brain and spinal cord should be made before it is possible to exclude or determine the presence of demonstrable lesions in these cases. Another cause for these paralyses which should not be overlooked is syphilis. The perivascular distention which is extensive in some of these cases plays some part in the causation of the paralysis, probably by causing pressure on the cells of the cortex, a pressure which could come and go, according to the amount of leakage from or absorption of the fluid into the perivascular spaces.

5. Hernia of the Ovary and Tube.—Andrews, after reviewing a historical sketch of the literature referring to hernia of the ovary and the tube, speaks of the ætiology, giving three causal factors: (1) A sufficiently patent or dilatable port through which an organ may become herniated; (2) an organ so situated and sufficiently mobile that it may be forced into that port; (3) and, finally, a force sufficient to move the organ into the port. The conditions which may be mistaken for ovarian, tubal, or uterine hernia are: (1) Undescended testicle in an hermaphrodite; (2) small intestinal hernia; (3) epiplocele; (4) tumors in the sac, as fibromata, lipomata, carcinomata, etc., especially tumors of the round ligament; (5) hydrocele of the canal of Nuck; (6) inguinal or femoral tumors. The treatment should be the radical cure of the hernia by operation, though special conditions may call for taxis and subsequent use of a truss or abdominal supporter. The results of operation are usually good and the risk is not so great as that involved in the persisting condition.

9. Certain Facts Concerning Faucial Tonsils.—Robertson states that eight per cent. of all tonsils examined were affected with primary tuberculosis, which enters the tonsil through the crypts, emptying into the supratonsillar fossar and furnishing seventy-five per cent. of tuberculosis of the tonsil, the infection taking place in the depth of the crypt. In such a way the tonsils are the cause of general infection of the blood which may produce tuberculosis in any part of the body, with a direct infection of the apex of the lung from the tonsil. Unless the tonsil is removed there will be failure of operations for cervical adenitis. A great number of patients develop lung tuberculosis when the cervical glands are not operated on. There will be resolution after the tuberculous glands have been removed. The gland when diseased must be removed; when operated on for removal it must be enucleated completely, and pockets left in the soft tissues around the tonsils must be destroyed. He advocates the use of ethyl chloride gas for narcosis in tonsil operations, giving a new method of administering the gas, and describes the set of instruments which he uses. Among the accidents which may occur should be mentioned hæmorrhages, injury to the uvula, dropping of

the excised tonsil into larynx, wounding the pillars, etc.

10. The Odor as a Guide in the Treatment of Chronic Suppuration of the Middle Ear.—Gradle says that with scarcely an exception the discharge of chronic suppuration is characteristically fœtid. It has been shown by bacteriological research that this offensive decomposition of the pus is due to anaerobic bacilli. This odor the author uses in the following way: In every case in which there are no urgent symptoms necessitating prompt operation, the ear is washed out until the water brings no further discharge or débris. Boric acid powder is then blown in lightly, and the odor will disappear permanently in successful cases. If this boric acid fails to remove the odor in the course of a few days, operation is made necessary. Whenever the odor can be removed by these measures, healing usually follows promptly.

MEDICAL RECORD.

November 24, 1906.

1. Report of One Hundred Consecutive Laparotomies; With Some General Observations, and a Special Reference to Appendicitis,
   By VICTOR F. MARSHALL and EDWARD W. QUICK.
2. Treatment of Cancer of the Larynx by Subcutaneous Injection of Pancreatic Extract (Trypsin). A Case of Growth, Supposed to be Carcinoma, Cured,
   By CLARENCE C. RICE.
3. Treatment of Prostatic Enlargement,
   By JAMES PEDERSEN.
4. Some Mental Symptoms Due to Disease of Nasal Accessory Sinuses, By J. A. STUCKY.
5. The Diagnostic Value of the Cystoscope and Urethral Catheter, By JOHN EGERTON CANNADAY.

1. Report of One Hundred Consecutive Laparotomies; with Some General Observations, and a Special Reference to Appendicitis.—Marshall and Quick state that they intend to operate in all cases of appendicitis at the earliest possible time, with the exception of such cases, in which no abscess has formed and in which the patients are decidedly better, where convalescence is progressing satisfactorily and the patients are on the mend. Under operation they mean a surgical procedure done in the interests of the patient's life, the least possible compatible with his interests. Relieve pressure and institute drainage—these are the keynotes. The exhibition of the perforated, gangrenous appendix is a minor consideration. As soon as the peritonæum is opened and pus is found, a large tube is inserted and retreat is made—even if there is an excess of peritoneal fluid turbid in character with a few flakes of fibrin on the presenting loops of intestine, further operation is immediately abandoned, and free drainage is established. These operations require but a few minutes and militate against the patient's chances of recovery. The authors ask: "How can they? Has anyone ever doubted the ancient dictum, 'Where there is pus evacuate'? is there anything sacred about a suppurating peritonæum? and is not this structure subject to the same laws of physiology and pathological physiology as are the pleura, the liver, and the large joints? Whenever your patient has an acute suppurative infection of the peritonæum open the cavity instanter; but once it is opened, beware of pernicious activity."

2. Treatment of Cancer of the Larynx by Subcutaneous Injection of Pancreatic Extract (Trypsin).—Rice reports a case of cancer of the larynx, the patient being treated with subcutaneous injection of trypsin and the pancreatic capsules called holadin. The treatment was a great success. The doctor has treated in this form four patients. So far no fixed rule as to the exact method of treatment has been formulated. The quantity of injection which he employed, from seven to ten minims every day, was much less than that employed by others. The successful case was the first patient. The second patient was a woman of sixty or more who was very near death when seen first. She had a cancerous growth involving the posterior wall of the larynx and the œsophagus. She had been unable to swallow food for many weeks. It was a hopeless case from any standpoint, and although the injections of trypsin were given no benefit resulted. In the third case the growth, which seemed to be a simple fibroma, was removed by snare and forceps. After such removal the trypsin injections were used without benefit. The growth recurred and the entire larynx was removed. The fourth case the author is treating now. This is probably an epitheliomatous growth attached to the lower pharynx on the right side which pushes the larynx and the epiglottis to the left. He thought for a time that he was getting marked benefit from the trypsin injections in this case, as the growth seemed smaller and softer and the swallowing was easier, but for the last two weeks there seems to be no improvement. The doctor observes that there may be one particular form of growth, and only one, which can be cured by the injections of trypsin, and it may be that the growth which he has seen removed is the particular type which can be controlled by pancreatic injections. What the exact quality of such a growth is, he does not know. All of these points must be ascertained by further study.

3. Treatment of Prostatic Enlargement.—Pedersen remarks that at the present stage of our knowledge it is not possible to say categorically when surgical intervention should be advised, neither is the exclusive advocacy of one operation as the operation of choice warranted. He cites five cases which he uses for illustrating five classes of patients who can be benefited by treatment. He concludes his remarks by saying that his paper should not be considered as a plea for catheter life as opposed to prostatectomy, for bare conservatism as against bare radicalism. It is submitted as an argument for discriminate intervention as against indiscriminate operating; for finer distinctions in the field of indications, and for a rational application of all the known methods and means of treatment in such proportions as shall gain the maximum results for each individual patient suffering from the condition known by the generic term prostatic enlargement.

4. Some Mental Symptoms Due to Disease of Nasal Accessory Sinuses.—Stucky says that it is very evident from the number of cases of melancholia and suicide which are reported as being due to grippe or influenza, that acute or chronic disease of the nasal accessory sinuses frequently give rise to serious forms of mental disturbances. From the nine cases the author reports he observes that in each case the ethmoid cells were extensively involved in the pathological process, and he does not now recall ever having seen a case of frontal or sphenoidal suppuration in which the ethmoid was not implicated. His observations almost force him to the conclusion that probably in the ethmoid, or its "offshoot" the middle turbinate, is to be found the cause for the majority of cases of infection of the frontal, maxillary, and sphenoidal sinuses, and the statement made by him in a paper on a similar subject in 1904 is repeated with greater emphasis at this time, that the middle turbinal most frequently causes obstruction of the natural openings of the accessory sinuses and thus interferes with free drainage and ventilation, and the early removal of its anterior third decreases the necessity for more extensive and radical operations later. The author cites W. Sohier Bryant, who says, that whether these symptoms and conditions are due to intracranial pressure, direct or indirect meningeal irritation, reflex nervous conditions, disturbed cerebral circulation, or toxæmia, is not determined. But the fact remains that in these cases ventilation of the occluded sinuses or cure of the purulent process cured the psychosis; on the other hand,

retention of pus aggravated the mental defect, or return of the purulent infection in the sinus was accompanied by return of psychosis.

5. **The Diagnostic Value of the Cystoscope and Ureteral Catheter.**—Cannaday concludes that the cystoscope as an accurate scientific instrument is of comparatively recent inception and perfection; that the other mechanical aids to the collection of the separate urines are not by any means absolutely dependable; that the cystoscope and ureteral catheter have their limitations, shortcomings, and defects, and are not ideal; that these appliances are of especial value in diagnosticating the causes of hæmaturia, in the discovery of calculi and foreign bodies in the bladder; that a careful study of the ureteral orifices gives more than an inkling of the conditions present in ureter and kidney. Definite information concerning the origin of a pyuria can be elicited by the use of the cystoscope and ureteral catheter which could not have been obtained in any other way.

BRITISH MEDICAL JOURNAL.

November 10, 1906.

(Seventy-Fourth Annual Meeting of the British Medical Association.)

Section of Surgery.

1. Discussion on Enlargement of the Prostate and Its Treatment, By G. A. Bingham, C. B. Shuttleworth and others.
2. Remarks on Posture as an Aid to Surgery, By M. MacLaren.
3. Fracture and Dislocation of the Spine, By A. B. Welford.
4. Operative Treatment of Irreducible Luxation of the Semilunar Cartilages of the Knee Joint, By J. Bell.
5. A Case of Extensive Tuberculous Ulceration of the Small Intestines which Necessitated the Removal of Five Feet of Ileum, By F. J. Shepherd.
6. Splenectomy and Banti's Disease, By G. E. Armstrong.
7. Surgical Treatment of Chronic Colitis, By I. Olmsted.
8. One Hundred Consecutive Cases of Appendix Operation, By H. W. Carson.
9. The Treatment of Congenital Clubfoot, By B. E. McKenzie.
10. The Surgical Relations of the Parathyreoid Glands, By W. G. MacCallum.
11. Intestinal Obstruction with or Following Disease of the Vermiform Appendix, By N. A. Powell.
12. Discussion on the Surgical Treatment of Ascites Secondary to Vascular Cirrhosis of the Liver, By S. White, G. G. Turner, and J. Stewart.
13. A Discussion on the Surgical Treatment of Duodenal Ulcer, By W. J. Mayo and G. C. Franklin.
14. A Discussion on Acute Septic Peritonitis, By C. J. Bond and H. Howitt.

Other Articles.

15. The Insanity of Childbirth, By A. Rigden.
16. Ethyl Chloride as a General Anæsthetic in Conjunction with Ether, By G. W. Daniell.
17. Notes on a Case of Quinine Hæmoglobinuria or Blackwater Fever, By A. D. Ketchen.
18. Tetanus in Two Brothers: Subdural and Subcutaneous Injections of Serum: Recovery, By J. Adam.
19. Improved Methods for Recognition of Blood and Seminal Stains, Especially in Tropical Climates, By E. H. Haukin.

1. **Enlargement of the Prostate.**—Bingham and Shuttleworth classify cases of enlargement of the prostate as follows: 1. Those cases seen early where the only symptom is obstruction to the urinary outflow due to an enlarged prostate, there being no cystitis or pyelitis, and the patient otherwise healthy with good arteries. The risks of operation are not great and radical interference should be advised. 2. Cases in which the patient is a physical wreck, with little or no ability to void urine, with overflow, cystitis, and perhaps pyelitis, and with sclerosed vessels. Here a radical operation is out of the question and the Bottini instrument, in skilled hands, may be used with great benefit. When a calculus is present, it should be removed by suprapubic cystotomy, followed by the use of the Bottini instrument. 3. Between the extremes of 1 and 2 are cases which should be given the benefit of operation. When the middle lobe is the chief offender, the suprapubic route should be adopted. But when the mass encroaches but little on the bladder, the perineal route is indicated. The anteoperative and postoperative treatment is most important. Uræmia and shock are the common causes of death. Thomas holds that: 1. In enucleation of the prostate there is no choice between the suprapubic and perineal routes as far as the mortality is concerned. 2. Both are sometimes followed by bad results (fistula, stricture, etc.), but the chances of complete recovery are about fourteen per cent. better by the suprapubic route. 3. In bad septic cases the operation should be done in two stages. 4. The suprapubic route is better for tumors of the middle lobe, for removal of calculi, and for the control of hæmorrhage. 5. The suprapubic route is unsuitable for surgeons with short fingers or flexible thin nails. 6. There is no post mortem evidence that the whole prostate has ever been removed. 7. It is impossible to remove the prostate in one mass without also removing with it the prostatic urethra.

8. **Appendicitis.**—Carson, from a study of one hundred consecutive operations for appendicitis, formulates the following views: In children the onset may be insidious, they can give no account of their symptoms, they resist examination, owing to the thin submucous coat abscesses form much more rapidly, and general peritonitis is much more common. Therefore the treatment of appendicitis in children should be to remove the appendix as soon as a diagnosis has been made. The most important disease to be excluded is pneumonia; the respiration is rapid, the alæ nasi dilate, and the abdominal muscles usually relax between respirations. The advantages of early operation are ease of performance, absence of adhesions, shortening of convalescence, nonoccurrence of ventral hernia, and subsequent disability due to adhesions. The signs of a severe attack are severe onset, facial expression, dry tongue, rapid pulse with a falling temperature, diarrhœa, recurrence of the initial vomiting, disappearance and recurrence of pain and tenderness, rigidity of the abdominal walls, presence of tumor, abdominal distention, and a high leucocytosis.

9. **Congenital Clubfoot.**—McKenzie's conclusions are: 1. The prognosis in ordinary, nonparalytic clubfoot is good. 2. The ideal time for active surgical treatment is early in the second year. 3. The deformity of the foot itself should be fully corrected; afterward the relation of the foot to the leg. 4. Cutting, other than subcutaneous section, is seldom required. Manipulative replacement and retention dressings are sufficient. 5. After treatment consists in a retentive high brace, and a proper leather shoe. 6. The open incision and removal of bone are harmful and unnecessary. 8. Restrictive methods, either by dressings or apparatus, should be used as little as possible. 9. Persistent manipulation improves function and development. 10. Operative treatment must be thorough. No part of the correction of the deformity must be left to mechanical means. 11. In patients under fifteen years of age, congenital clubfoot may be so perfectly cured as to give perfection of form and function. 12. Perfection of form may be secured in adults, but function is sometimes impaired. 13. The time required for active surgical treatment need not be more than three months. 14. Age is no bar to successful treatment.

19. **Blood and Seminal Stains.**—Haukin gives the following methods of recognition of blood and seminal stains. The suspected blood stain (on clothing) is cut out and put in boiling water for a few minutes. It is

then placed on a glass slide, wetted with ammonium sulphide, and placed under the microscope, a microspectroscope being used instead of an eye piece. If the stain is of blood the two absorption bands of hæmochromogen will be seen. Boiling the cloth prevents the coloring matter from going into solution. Suspected seminal stains are boiled for two minutes in a one half per cent. solution of tannin in 1 to 1,000 sulphuric acid. It is then washed for two minutes in a 1 to 400 aqueous solution of ammonia, transferred for two minutes to a two per cent. solution of potassium cyanide, rapidly washed in distilled water, scraped, teased on a glass slide, dried, fixed by heat, and stained. The breaking off of the tails is mostly due to inappropriate solvents The author has detected spermatozoa in a stain which had been covered with red ink and starch paste. The best stain is gentian violet. Boiling the spermatozoa prevents their solution by the potassium cyanide which dissolves all other proteid matter.

LANCET.

November 10, 1906.

1. Rectal Alimentation (*Bradshaw Lecture*) By S. J. SHARKEY.
2. Adolescent or Late Rickets, By H. H. CLUTTON.
3. Stokes-Adams Disease and Cardiac Arrhythenia, By J. HAY and S. A. MOORE.
4. Note on Determinations of the Amount of Physiologically Active Hydrochloric Acid in the Stomachs of Normal Mice and of Mice Suffering from Cancer Experimentally Produced. By S. M. COPEMAN and H. W. HAKE.
5. Erythema Autumnale, Harvest Rash, or Prurigo du Rouget, By J. C. THRESH.
6. The Treatment of Laryngeal Tuberculosis, By H. BARWELL.
7. Is Sodium Sulphate a True Intestinal Antiseptic? By J. MABERLY.
8. The Spirilla of the Mouth, By K. W. GOADBY.
9. A Case of Sclerema Neonatorum, By R. WATERHOUSE.
10. The Needs of the Body on Sunday, By H. HANDFORD.

2. **Adolescent Rickets.**—Clutton states that adolescent rickets must be looked upon as practically the same disease as infantile rickets, modified by age. In many, if not most, of the cases it is a distinct development, and not a continuation of the disease from infancy. New factors arise, one of the most important being the influence of the higher nerve centres upon metabolism. The period of from twelve to fourteen years of age is a time of great intellectual stress. This is more important than diet at this age. Sexual development is another factor, also want of air and exercise. There is no special treatment applicable to these cases—diet, education, and fresh air are the points to be inquired into. Correction by osteotomy of any deformity due to the disease should be postponed till all active signs of rickets have disappeared.

3. **Stokes-Adams Disease.**—Hay and Moore record a case of Stokes-Adams disease in its second stage, that is, in the stage of syncopal, apoplectiform, or epileptiform seizures. These seizures were of all grades of severity and tended to occur in groups with periods of comparative comfort intervening. The advent of seizures was usually indicated by definite prodromal symptoms. The necropsy revealed partial obliteration of the auriculoventricular bundle; this would cause a persistent depression of conductivity. An analysis of numerous pulse tracings revealed marked variations in conductivity, all grades from normal conduction to complete heart block being in evidence at one or another time. This suggests influences in addition to the organic lesion. Such influences were probably nervous in character and affected conductivity either directly through the vagus or indirectly by altering the auricular frequency.

4. **Gastric Acidity in Cancerous Mice.**—Copeman and Hake think that they have found a decided increase of physiologically active hydrochloric acid in the stomachs of mice with cancerous tumors (ulcerated or nonulcerated) over that occurring in normal mice. This is of course widely at variance with the accepted view that in man cancer of the stomach is accompanied by a marked decrease in the amount of hydrochloric acid found in the gastric juice.

5. **Harvest Rash.**—Thresh states that this eruption of the skin is caused by a mite parasitic upon the harvest spider; this mite (rouget) is the hexapod larva of the *Trombidium holosericeum.* The initial erythema is followed by an eruption of acuminate pimples on the arms, chest, and neck. The most beneficial treatment is the applicaiton of benzene to kill the acari, followed by warm baths, or the use of dilute vinegar to allay the irritation.

6. **Laryngeal Tuberculosis.**—Barwell tells us that tuberculosis begins in the larynx as an infiltration of the submucous tissues which sooner or later tends to break down and form an ulcer. The length of time depends partly upon the acuteness of the process, but chiefly upon the situation of the lesion. On the cords and vocal processes ulceration occurs later, while at the upper aperture of the larynx a large amount of infiltration may take place without ulceration. Antiseptic and caustic pigments are of great value in promoting the healing of ulcers and the shrinkage of granulations, but they have no effect upon massive infiltration underlying unbroken epithelium. They must be applied under guidance with a mirror on a strong cotton wool mop, and must be thoroughly and forcibly rubbed in. Lactic acid, in sufficient concentration, is most valuable. An excellent preparation is the following: Lactic acid, fifty per cent.; formalin, seven per cent., and carbolic acid, ten per cent. The carbolic acid acts as a local analgesic. For attacking massive infiltration at the upper aperture of the larynx, punch forceps or double curettes are necessary. No local anæsthetic is necessary for the application of pigments.

7. **Sodium Sulphate.**—Maberly contends that sodium sulphate, over and above its aperient action, is an intestinal antiseptic. He reached this conclusion by observation of its action in cases of dysentery and infantile diarrhœa; he now relies almost entirely on sodium sulphate in the treatment of all septic bowel complaints, and is perfectly convinced that the drug given in proper doses is a true bowel antiseptic. To obtain this antiseptic action we must avoid doses which have an aperient action. The dose should commence with about six grains for a baby under six months of age, increasing up to one drachm for adults, given every six hours in one of the flavored waters, such as fennel. Children over six months old are very tolerant of the drug and seldom exhibit any aperient effects from doses of fourteen to twenty grains. He also uses the drug in typhoid fever; the stools from being loose and fetid, become more normal in appearance and odor, and the temperature runs a lower course.

8. **Mouth Spirilla.**—Goadby calls attention to the occurrence of spirilla in all pathological conditions of the mucous membrane of the mouth. They are frequently associated with the diphtheria bacillus; are found in almost all cases of alveolar osteitis, and acute and chronic simple gingivitis. The organism can be stained very satisfactorily by means of Leishman's stain, also by using an extremely dilute solution of carbolic frechsin and allowing the stain to act for half an hour. The resemblance of the spirochætæ of the mouth to the Leishman-Donovan bodies of kala-azar and to the spirillum of relapsing fever is by no means close.

LA PRESSE MEDICALE.

November 3, 1906.

1. The Nature of Cancer and of the Cancerous Cachexia, By Professor DEBOVE.

2. Technique of Amputation of the Breast, By J. L. Faure.
3. The Neurosis of Anguish, By P. Hartenberg.

1. **Cancer.**—Debove discusses in a clinical lecture the parasitic theory of cancer and the theory of cellular anarchy. He believes that the cachexia is due not to a secretion of the neoplastic cells, but to the functional trouble of certain organs.

2. **Amputation of the Breast.**—Faure describes, with the assistance of several excellent illustrations, the operation for amputation of the breast and removal of the axillary glands with and without sacrifice of the pectoralis major.

November 7, 1906.

1. Experimental Researches in Regard to the Poison of Cancer. By Mme. Girard-Mangin and Professor H. Roger.
2. Alcohol and Fat in Diabetes, By R. Romme.

1. **Cancer Poison.**—Madame Girard-Mangin and Professor Roger conclude, after an extensive study of cancer in dogs and human beings, that most malignant tumors contain toxic substances which are the more active the softer the tissue. They seem to be of colloidal nature, are precipitated by alcohol, and are not dialytic, and thus resemble microbic toxines.

2. **Alcohol and Fat in Diabetes.**—Romme calls attention to the experiments of Benedict and Toeroek, the substitution for a portion of the fat in the food of a caloric equivalent of alcohol produced a manifest diminution of the acetonuria and glycosuria.

LA SEMAINE MEDICALE.

November 7, 1906.

Does the Centre of Motor Aphasia Exist? By Fernand Bernheim.

Does the Centre of Motor Aphasia Exist?—Bernheim replies in the negative, and gives his reasons for disagreement with the commonly accepted theory. They are repetitions of and additions to his findings in the brains of five patients who had suffered from motor aphasia, reported in a thesis in 1900.

BERLINER KLINISCHE WOCHENSCHRIFT.

October 22, 1906.

1. The Specific Treatment of Tuberculosis, By E. Maragliano.
2. Methæmoglobine Poisoning Through Oil of Sesamum, By Rautenberg.
3. Atrophy of the Intestinal Mucous Membrane, By J. C. Rojas.
4. The Action of Heat in the Finsen Treatment, By H. Jansen.
5. The Cytology of Gonorrhœal Pus, By H. L. Posner.
6. External or Internal Operation for Empyema of the Accessory Sinuses (*Concluded*), By M. Halle.

2. **Methæmoglobine Poisoning.**—Rautenberg reports a very severe case of poisoning which resulted from irrigation of the bowel with from one third to one half a litre of oil of sesamum, most of which was voided with the stool. The principal symptoms were weakness, coldness of the peripheral parts of the body, and marked cyanosis of the face and extremities. The blood was very dark from the presence of methæmoglobine. The patient recovered. Leucocytosis persisted for a few days.

3. **Atrophy of the Intestinal Mucous Membrane.**—Rojas describes a case of typical atrophy of the mucous membrane of the small intestine found in a man, forty-three years of age, who had suffered from chronic and increasing ileus. He had no pernicious anæmia, and no changes were found in his blood.

4. **Finsen Treatment.**—Jansen gives the details of an experiment by which he asserts to demonstrate that it is incorrect to consider that the Finsen treatment is a form of treatment by heat, as has been asserted by Scholtz.

5. **The Cytology of Gonorrhœal Pus.**—Posner concludes that: 1. Vacuoles are present in polynuclear and mononuclear leucocytes in all stages, and are a sign of past phagocytosis. They are not specific for gonorrhœa and not diagnostic of that disease. 2. Mononuclear basophile cells are met with in every stage of gonorrhœa, but are particularly numerous, as a rule, only during the first days of the disease and in very chronic cases. 3. Occasional eosinophiles are always present. They are at their height in the fourth or fifth week of the disease, and when numerous indicate that the gonorrhœa is acute. 4. The presence of cells with spheroidal nuclei suggests that either there has not been a true gonorrhœal inflammation, or that the suppuration is no longer maintained by the gonococci alone, but by other microorganisms or toxines.

6. **Operation for Empyema of the Accessory Sinuses.**—Halle sums up his exhaustive paper with the statements that in every case of empyema connected with the nose the restoration of physiological respiration is of primary importance. An attempt should be made in every case to obtain a cure by means of free drainage into the nose. In a great many, perhaps the majority of the cases, the frontal sinus may be opened readily and without danger from within the nose. In cases of profuse and persistent suppuration, and when serious symptoms are present, the external operation should be performed. In such cases the after treatment can be carried out from within the nose, unless a total obliteration of the cavity by granulation is desired.

October 29, 1906.

1. Marmorek's Serum in the Treatment of Surgical Tuberculosis, By Hoffa.
2. A Simple Device for the Production of the Knee Jerk, By G. Krönig.
3. The Diagnostic Signification of Spirochæta Pallida, By E. Hoffmann.
4. The Toxolecithid of Bee's Poison, By J. Morgenroth and U. Carpi.
5. Pulmonary Anthracosis and Its Origin from the Intestine, By M. Cohn.
6. The Specific Treatment of Tuberculosis (*Continued*), By E. Maragliano.
7. A New Reaction to Free Hydrochloric Acid in the Contents of the Stomach, By F. Simon.
8. The Hydrotherapeutical Treatment of Tabes Dorsalis, By A. Laqueur.

1. **Marmorek's Serum in the Treatment of Surgical Tuberculosis.**—Hoffa believes that in certain cases Marmorek's antituberculous serums has a specific curative action on the course of the tuberculous process, but that in a majority of cases it produces no effect. He considers that it should be given a prominent position as a remedy in the struggle against tuberculosis, particularly as it is harmless and the technique of its use is simple and easy.

2. **A Simple Device to Aid in the Production of the Knee Jerk.**—Krönig ascribes to Jendrassic the suggestion that in cases in which it is difficult to obtain the knee jerk because the attention of the patient is called to the attempt, it may be obtained if the attempt is made when the patient at the command "now" takes a forcible inspiration and at the same time looks upward toward the ceiling of the room.

4. **The Toxolecithid of Bee's Poison.**—Morgenroth and Carpi find that the poison of bees, analogously to the poisons of snakes and of scorpions, contains a substance (prolecithid) of toxic or amboceptor like character, which unites with lecithin to form a peculiar hæmolytic toxolecithid.

6. **The Specific Treatment of Tuberculosis.**—Maragliano considers this subject under a number of heads, or rather propositions, of which the eight given in the first two installments of his paper are: 1. The living and the dead tubercle bacilli produce specific protective substances as soon as introduced experimentally into

the animal organism. These substances are antitoxic, bacteriolytic, and agglutinant, can be demonstrated, and can be graduated with fair accuracy. 2. The antituberculous substances which can be obtained experimentally with various bacillary materials always owe their origin to the same process of protection, whatever may be their forms or names. 3. In order to obtain antituberculous material suitable for the treatment of human beings the use of living bacilli is absolutely excluded. 4. The antituberculous substances are found in the cellular elements of the tissues, the leucocytes, the blood serum, and the milk of animals, in the eggs of hens, and in the tuberculous products of inflammation, which were producers experimentally with the bacilli. 5. The tuberculous infection calls forth the production of specific protective substances in man analogous to those obtained experimentally in animals. 6. Tuberculin and other tubercle poisons can call forth the production of specific protective materials in men suffering from tuberculosis. 7. The antituberculous material found in the organisms of treated animals can be carried in various ways to other organisms, and can produce there similar protective substances. 8. A specific treatment for tuberculosis may be instituted in two ways, with tuberculin and other tubercle poisons, or with the antituberculous substances produced in the bodies of healthy animals.

7. **A New Reaction to Free Hydrochloric Acid in the Contents of the Stomach.**—Simon says that if a cubic centimetre of a mixture of ten parts of spirits of nitrous ether and forty parts of alcohol is placed in a test tube upon five cubic centimetres of the filtered contents of the stomach a grayish white ring will be formed at the junction of the two, which will become blue after a few seconds if free hydrochloric acid is present, or green if the quantity of the acid is very small.

LA RIFORMA MEDICA

November 3, 1906.

1. Clinical and Anatomicopathological Observations on Forty-six Cases of Primary Intestinal Stenosis (*To be continued*), By LUCA FIORAVANI.
2. A New Microchemical Reaction of Spermatic Fluid Suggested by Barberio, By CALOGERO GALBO.
3. The Technique of the Shortening and Transplantation of Tendons in the Treatment of Strabismus. By GINO MONZARDI.

2. **New Reaction for Spermatic Fluid.**—Galbo, an assistant of von Schroen, of Naples, studies the new microchemical reaction of semen described by Barberio. The latter found (April 5, 1905) that by mixing a drop of a saturated solution of picric acid with a small amount of semen, either fresh or dried, a crystalline precipitate appeared. The crystals are four or five times as long as they are wide, and appear as rhombic needles, and are traversed longitudinally by a refractive line or corner. The obtuse angles are usually rounded, and in imperfect specimens the acute angles are also rounded. At times the crystal presents the aspect of an ovoid mass, or even of a round disk. Sometimes the crystals occur in pairs, chiefly in the form of crosses, or in groups, in the shape of rosettes. The average size of these crystals is between ten and fifteen mikra. Galbo's researches offer evidence that Barberio's crystals are found solely in human semen, and only in ejaculated semen. They were absent in semen of horses, cattle, rabbits, etc., and in testicular extract from human testes. Modica claimed that Barberio's crystals occur in prostatic fluid, but Galbo shows that this is not so. Nor is the statement of De Dominicis correct, that Poehl's spermin gives crystals similar to Barberio's. Neither the ejaculated semen of horses nor of bullocks shows any Barberio's crystals, and the spermin of Poehl is obtained from these animals. It is possible, however, that Poehl's spermin contains some foreign substances which are not in spermatic fluid, as urea and other constituents have been found in it. By heating ejaculated semen to 100° C., it loses its property to deposit crystals with picric acid. The only plausible theory for the origin of this substance is that it does not exist in the testes, nor in the vesicles, nor the prostate, but is formed in the union of these secretions in the act of ejaculation. The new reaction has a great value in the detection of seminal stains for medicolegal purposes. It is interesting also to note that von Schroen, in whose laboratory Barberio and Galbi are workers, is the exponent of the comparatively new science, mineral biology. Von Schroen described certain purposeful movements of young crystals, and his observations on the gemmation of crystals under polarized light led him to liken the process to one of cell division. The observations of von Schroen apply also to Barberio's crystals, and as these are probably crystals of a protomin base, it is apparent what a step in the direction of the unification of living matter, mineral, vegetable, and animal, their discovery constitutes.

ROUSSKY VRATCH.

October 14, 1906.

1. Pseudoleucæmia with Periodic Fever, By N. J. TCHISTÓVICH.
2. Renal Calculi, By A. P. KRYMÓFF.
3. Primary Atrophies of the Liver (*Concluded*), By S. P. SHUENINOFF.
4. The X Rays in the Treatment of Leucæmia (*To be concluded*), By L. I. USSKOFF and P. X. KALÁTCHIEFF.
5. Cocaine-Adrenalin Anæsthesia in Three Hundred and Twenty-eight Operations, By TH. O. ZÁRTSINE.

1. **Leucæmia with Periodic Fever.**—Tchistóvich treated a woman of thirty-eight who had periods of fever lasting from ten to fourteen days, at intervals of from eight to ten days, in which quinine and arsenic proved useless. Murchison, Pel, and Ebstein have reported cases of pseudoleucæmia with similar febrile attacks. In the present case there was no enlargement of the lymph nodes, but the blood presented the characters of pseudoleucæmia, namely, a moderate anæmia, and an increase in polynuclear neutrophile cells, a predominance of lymphocytes, chiefly the small ones, as well as the large mononuclear leucocytes. Although there was no history of syphilis, antisyphilitic treatment did the patient more good than any other medication, and the woman completely recovered. Tchistóvich suggests the adoption of the name "pseudoleucæmia cum febri periodica" for this type of cases, and believes that the connection with syphilis will bear investigation.

3. **Primary Atrophy of the Liver.**—Shueninoff studied two cases of primary atrophy of the liver, and seven cases of acute yellow atrophy, of which five were primary. As a result of his investigations he concludes that there is a special form of primary chronic atrophy of the liver, characterized by degenerative lesions which clinically may assume at its end stages the form of either acute yellow atrophy or atrophic cirrhosis.

5. **Cocaine-Adrenalin Anæsthesia.**—Zártsine presents the results of his experience with local anæsthesia in three hundred and twenty-eight operations in which he employed a mixture of cocaine and adrenal extract. For this purpose he used a uniform mixture of 6.0 grammes of a 1 to 1,000 solution of adrenal extract; 0.3 gramme of cocaine hydrochlorate and 60.0 grammes of distilled water. This mixture can be boiled two or three times without impairing its anæsthetic properties. The range of operations in which the method was used was very extensive, and while the author urges the great advantages of this mixture over ordinary cocaine solutions, he also warns against the secondary capillary hæmorrhages, which may occur after the effects of the adrenal extract have worn off. Operations on the penis are well suited for this method.

In circumcision the solution should be introduced into the margin of the prepuce, between the two layers thereof, 1.0 gramme of the mixture being enough. For ingrown nail operations it is unsuited, as the procedure of injection is too painful. He prefers for this operation to ligate the base of the toe tightly with an elastic band, and to freeze the entire operative field with ethyl chloride. Whereupon the nail can be removed painlessly by introducing a spatula under it. In the cocaine adrenal extract method a one half per cent. solution of cocaine is equal in anæsthetic properties to one much more concentrated. Large amounts of the mixture can be used, even for laparotomies, without danger.

ARCHIVES OF THE ROENTGEN RAY.

November, 1906.

Second Special Cancer Number.

1. The Action of Radium on Malignant Neoplasms, By W. Deane Butcher.
2. Radiotherapy and Cancer, By E. Laquerrière.
3. On the Treatment of Cancer by X Rays, By Foveau de Courmelles.
4. The Radiotherapy of Cancer, By Louis Delheim.
5. The Treatment of Malignant Disease by Physiatrical Modalities, By G. Reus.
6. A Case of Laryngeal Cancer Treated by Röntgenization After Excision, By Professor Grossmann.
7. A New Unit for Measuring X Rays, By H. Bordier and J. Calimard.

1. The Action of Radium on Malignant Neoplasms.—Butcher says that in the whole range of experimental medicine there is nothing better authenticated than the fact that a small superficial neoplasm—be it lupus, rodent ulcer, or epithelioma—may be destroyed by the radiations of radium. A wart, a lupus nodule, a syphilitic infiltration, a rodent ulcer, or a patch of epithelioma, simply wilts and withers away under the influence of the Becquerel rays, like an uprooted weed under the action of sunlight. As regards cancer, there are apparently two stages during which radium treatment is particularly indicated: During the very early stage when the young and immature neoplasm is struggling to develop amid the normal cells, and at a later stage when ulceration and partial destruction of the neoplasm has already commenced. In the former stage minimal doses of the radiations are indicated, since it is our endeavor to differentiate between normal and abnormal tissue, avoiding as much as possible any disturbance of the healthy cells. In radium therapy the question of technics is one of the greatest. The first factor is the activity of the radium preparation; the second, the quantity of the radioactive salt employed; the third, the frequency and duration of the exposure; and last, but not least, the form and material of the radium cell. The information at our disposal on any one of these questions is still in a very nebulous condition.

3. On the Treatment of Cancer by X Rays.—Foveau de Courmelles states that the forms of cancer which he has treated with epitheliomata of the nose the eyelids, the uterus, and the rectum; carcinomata of the breast; sarcomata of the face, the shoulder, and the thigh; scirrhus of the stomach; tumors operable and inoperable, tûmors which had been operated on, and recurring tumors. All of these were benefited by treatment by x rays or radium. As a rule he used the x rays, employing the radium tube only for the treatment of small epitheliomata of the face, which are rapidly destroyed by its action. In the case of small epitheliomata he has invariably had success by the use of the voltaic arc from his own clinical radiator, the small sparks from his regulable high frequency electrode, or by the application of radium. In the treatment of more extended lesions, however, he prefers to use the x rays. Under their influence the skin becomes darkened in color, whilst the tissues and surrounding glands are degenerated and become fibrous in texture. In disease of the stomach, radium, either applied externally or introduced by means of a specially constructed sound, not only subdues the pain, but promotes the digestion of food which could not be taken before. With fibromata which threaten to prove malignant, he has, for some years, found radiotherapeutical treatment most successful. When the séances are long and frequently repeated, the effect of the rays is to hasten the menopause, besides reducing the tumor and suppressing the hæmorrhage and pain. The symptom of pain will almost invariably yield to treatment with x rays, ultraviolet light, or radium.

6. A Case of Laryngeal Cancer Treated by Roentgenization After Excision.—Grossmann describes his treatment as follows: He first performs a tracheotomy, followed by laryngofission. Having thus exposed the neoplasm, he resorts to radical extirpation, afterwards destroying the attachment by means of the thermocautery. The laryngofissure should be kept open in order to allow the exposure of the site of the lesion directly to the focus tube. Daily séances should be given, and the penetration of the rays might be assisted by introducing retractors to depress the alæ of the thyreoid cartilage as far as possible. This procedure would not only allow of more intense and rapid action of the rays, but would also afford us a means of observing the process of healing, and enable us to study more minutely any recurrence of the lesion should the cure not prove permanent.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

November, 1906.

1. The Diagnosis of Renal and Ureteral Calculi, By J. W. Bovee.
2. The Environment in Therapeutics from the Standpoint of Physiology. By W. B. James.
3. The Physiological Limitations of Rectal Feeding, By D. L. Edsall.
4. The Results of the Use of Refined Diphtheria Antitoxine, Gibson's "Globulin Preparation," in the Treatment of Diphtheria, By W. H. Park and B. Throne.
5. The Relations of Hodgkin's Disease to Lymphosarcoma, By H. W. Gibbons.
6. Coagulability of the Blood in Yellow Fever, By L. H. Marks.
7. Unilateral Paralytic Chorea, By J. Gunker.
8. Postural Treatment of Otitis Media and Mastoiditis, By A. E. Schmitt.
9. Paralysis of the Tracial Nerve Due to the Eustachian Electrobougie, By J. B. Solley.
10. Clinical and Experimental Experience with Colloidal, Silver and a Virulent Streptococcus, By F. P. Vale.
11. A Note on the Production of Vascular Lesions in the Rabbitt by Single Injections of Adrenalin, By R. M. Pearce and L. K. Baldauf.
12. Bacillus Pyrogenes (Nov. Spec.) Associated with a Febrile Disease. By L. K. Hirshberg.
13. Certain Remote Consequences of Infections of the Biliary Tract, with Special Reference to (1) Cholelithiasis and Cholecystitis, (2) Adhesions of the Upper Abdomen, (3) the General Principles of Treatment, and (4) the Indications for Surgical Intervention, By A. O. J. Kelly.

1. The Diagnosis of Renal and Ureteral Calculi.—Bovee thinks the differential diagnosis of renal and ureteral abnormalities is most perplexing. Two groups of symptoms represent acute attacks, and a third group the chronic condition. In the first group there is intense pain in the kidney or ureter, vomiting, frequent micturition with bloody urine. The condition may continue from two to fifty hours, and be followed by great soreness. In the second group there are renal crises following exercise, vomiting, fainting, loss of control of sphincters, possibly a renal tumor, and recurrent attacks. In the third group there is only vague pain in the urinary tract, with a history of neglected urinary calculus. Chill and subsequent fever may be ac-

companiments, especially of acute attacks. Factors connected with the physical examination are the administration of large quantities of water, rectal, infravesical and vaginal palpation cystoscopy, ureteral exploration with catheter, probe, or wax tipped bougie, skiagraphy, and exploratory incision. In the differential diagnosis one must exclude tuberculosis of the kidney and ureter, hydronephrosis, especially from kinks of the ureter, pyonephrosis, renal neoplasms, acute nephritis, broad ligament tumors, ectopic pregnancy, fused kidney, double ureter, hepatic disease, appendicitis, intestinal new growth, gallstones, concretions in the pancreatic duct, and caries of the spine.

2. **The Environment in Therapeutics from the Standpoint of Physiology.**—James thinks modern therapeutics, especially in hospitals, fails to do as much as it could by neglect to use some of the conditions of environment. Confidence in the potency of drugs has weakened, while confidence in good surroundings, especially nursing, has become stronger. Consideration for the psychical influence of environment deserves more attention, the influence of those who are very sick upon those who are in neighboring beds is often distinctly harmful. The physical side of environment includes temperature, ventilation, barometric pressure, humidity, light, quiet, noise, etc. Fresh air in the treatment of disease is an influence which has not yet been fully appreciated. The author sees no advantage in maintaining an even or any fixed temperature in the sick room, he dwells particularly on the importance of a great volume of fresh air in the sleeping room. Open air life has been found especially helpful for children of bad physical inheritance. The influence of light, and the value of bright but not too vivid colors in one's surroundings, is shown to be of great practical importance, and a plea is made for the more general use of the roof in city houses and hospitals for the out of door treatment of disease.

3. **The Physiological Limitations of Rectal Feeding.**—Edsall states that the limitations of this method as a means of furnishing food, not its therapeutical limitations as a means of combating symptoms are very narrow. Those who are thus fed lose in general nutrition, and lose in weight. The fact that the patient himself feels better for this form of treatment is not evidence that he has improved in nutrition, though it may mean that the disease which has suggested this treatment has ameliorated. The amount which may be absorbed in twenty-four hours under favoring conditions is the equivalent in nutriment of one glass of milk. The chief advantages of rectal alimentation consist in furnishing mental satisfaction, water, and salts to the body, and to this extent it furnishes a direct and positive gain. As to the food substances, the protein, fats, and carbohydrates, all are absorbed by the lower bowel, but far less freely than when taken by the mouth. In cases in which there is troublesome vomiting or any other transitory cause rectal alimentation is most important, but it should be employed only so long as may be required by the conditions affecting the usual channel for food. Intestinal putrefaction has been observed to be excessive when the use of the rectum for feeding is prolonged.

4. **The Results of the Use of Refined Diphtheria Antitoxine. Gibson's "Globulin Preparation" in the Treatment of Diphtheria.**—Park and Throne, after the study of one hundred cases, found results which were so definite that it seemed safe to conclude that the removal of a considerable portion of the nonantitoxic globulins, as well as the albumins from the serum by the Gibson method means the elimination of much deleterious matter, and the consequent diminution in the rashes, fever, joint troubles, etc., which frequently appeared with the unrefined antitoxine. The globulin preparation when tested by animal experiments appears to retain all the antitoxic properties of the whole serum. It is probable that antitoxine may be still further refined until all appreciable deleterious ingredients have been removed. The present refined form has already been used in several thousand cases of diphtheria without accident. The concentration of antitoxine by the elimition of nonantitoxic substances is of clinical importance and tends to encourage large dosage. The refined solution like the serum becomes slightly cloudy at high temperature. The antitoxine which it contains retains its potency for as great a length of time as in the whole serum.

5. **The Relations of Hodgkin's Disease to Lymphosarcoma.**—Gibbons believes Hodgkin's disease is malignant. Those who regard it as infectious are influenced by the following data: 1. The clinical picture, which may be that of an acute or a chronic disease with fever. 2. The frequency with which it begins in the glands of the neck. 3. Quiescence with sudden recurrence and death in some cases. 4. The lymphoid tissue alone is affected. 5. The extension to contiguous glands. 6. The final stage of cachexia, diarrhœa, hæmorrhage, etc. 7. Beneficial effects of arsenic. 8. Histological appearances, which suggest an infectious process. The author concludes as follows: 1. He agrees with Reed and others as to the histological picture in this disease, but does not admit that it is necessarily due to an inflammatory process. 2. In most cases infiltration of the capsule of the diseased glands can be observed, in many cases there is extension beyond the capsule, and in some cases infiltration into adjacent structures. 3. Hence Hodgkin's disease should be classified with malignant tumors.

6. **Coagulability of the Blood in Yellow Fever.**—Marks calls attention to the fact that most of the early writers believed that the coagulability of the blood in yellow fever was either completely lost or most tardily established, the blood itself being always carbonized and its fluidity greatly increased. Recent writers, on the other hand, with better instruments for the study of the blood have taken the view which is opposite to the foregoing. The experience of the author is as follows: 1. He has repeatedly observed the coagulation of blood from the median vein of a yellow fever patient, the coagulation occurring during the three to five minutes while it was in the aspirator. 2. He has seen blood. drawn as described, and placed in a large test tube by the side of another tube containing normal blood, coagulate in a manner identical with the coagulation of the normal blood. 3. In performing filtration experiments he found it impossible to filter unaltered blood, and he added a solution of potassium oxalate to prevent rapid coagulation. In experiments which he made in eight cases of yellow fver the minimum time of positive coagulation was two minutes and forty-five seconds, the maximum four minutes and twenty seconds, the average three minutes and fifty-two seconds.

7. **Unilateral Paralytic Chorea.**—Gunker cites the case of hemiparesis following slight trauma in a previously healthy boy: At first there was limping and in ten days the paresis spread over the entire right half of the body, excepting the face. The reflexes were reduced on the affected side, there were no atrophies, spasticity, or sensory disturbance. In the differential diagnosis one must eliminate cerebral hemiplegia, neuritis, and poliomyelitis. Treatment in such cases should include rest, tonics, and a modified form of Fränkel exercise. The author emphasizes the fact that associated movements may be expected in every case of supposed chorea, while some degree of incoordination is almost constantly to be found, with various degrees of muscle weakness. Muscular twitchings and knee jerk retarded in its descent are valuable symptoms. Slow development of paralysis in an otherwise healthy child should always suggest paralytic chorea.

ANNALS OF SURGERY.

November, 1906.

1. Dislocation of Vertebræ in Lower Cervical Region, Followed by Symptoms of Complete Severance of the Spinal Cord Laminectomy. Later, Partial Restoration of Function, By W. C. Krauss.
2. The Omentum and Its Functions, By G. K. Dickinson.
3. A Further Report on a Case of Cirrhosis of the Stomach, By J. G. Sheldon.
4. Rupture of the Intestine, By W. W. Golden.
5. Report of a Case of Intussusception Subjected to Operation, By A. M. Cartledge and J. B. Bullett.
6. Angulation at the Sigmoid, By G. P. Laroque.
7. Hernia Into the Ileocolic Fossa, By E. R. Secord.
8. Transureteroureteral Anastomosis. I. Intraperitoneal. II. Retroperitoneal, By N. W. Sharpe.

1. The Dislocation of Vertebræ in Lower Cervical Region, Followed by Symptoms of Complete Severance of the Spinal Cord. Laminectomy. Later Partial Restoration of Function.—Krauss reports such cases which resulted from diving in shallow water. There was extensive paralysis of motion and sensation, pain over the fifth and sixth cervical spinous processes and involvement of the posterior thoracic nerves. It was believed that the cord was involved at the level of the sixth cervical vertebra. The control of the sphincters was lost, and cystitis and malnutrition developed. An operation was performed eighteen days after the accident, from which recovery took place. The sixth cervical vertebra was found dislocated, and a crushed and pinched condition of the cord, which accounted for the clinical symptoms, and the tests of complete transverse severance of the cord. Regeneration of the spinal cord followed the operation, accompanied by descending degeneration. It was believed quite remarkable that recovery of function should take place, and to such a degree that the patient was enabled to resume his duties as a telegraph operator.

2. The Omentum and Its Functions.—Dickinson summarizes his investigations in the following propositions: 1. The numerous bloodvessels and lax tissues of the omentum allow storage of blood, when the general arterial tension is high. 2. Local congestion may be relieved by venous anastomosis through the medium of adhesions. 3. The omentum rapidly absorbs fluids from the blood current by means of its large area which is freely exposed to surrounding tissues which are in motion. 4. By the lymph stream it is a free carrier of white blood corpuscles, encapsulating solid particles. 5. By its cohesive tendency it closes apertures in the abdominal cavity, to do which it may have been forced by intraabdominal pressure. 6. By its facility in the formation of lymph and in local proliferation it becomes attached to infected tissues, walls them off, prepares them for subsequent absorption by the action of phagocytes, and thus protects the peritoneal cavity. 7. Most of the phagocytes which protect the peritonæum come through the omentum, partly from the general circulation, and partly from the omental tissues. They are subsequently attached to the omental surface taken into the lymph stream, and are then more or less dissolved.

4. Rupture of the Intestine.—Golden finds that previous to 1890 few cases of intestinal rupture were treated surgically, and the result was usually a fatal one. From 1894 to 1904 there were thirty-two recoveries reported in English, American, French, and German literature. Though the accident is relatively rare, it is not infrequent in occupations in which traumatism by squeezing is of common occurrence. Lumbermen and coal miners are exposed to such accidents. Rupture usually occurs where the motility of the gut is restricted by a short mesentery. An early operation is most desirable. The omentum usually escapes serious injury, while the mesentery undergoes injury similar to that which is sustained by the gut. Conditions are more favorable for an operation when the accident occurs several hours after a meal. Rigidity and pain are the chief symptoms in directing one to a diagnosis, an injury to the abdomen having been received, which is liable to produce rupture of the intestine.

5. Intussusception.—Cartledge and Bullett report a case in a child, eight years of age. The colon was opened, and part of the intussusception excised. Enterostomy was performed for fæcal drainage, and subsequently there was excision of a segment of the small intestine and enterorrhaphy for suppression of fæcal fistula. The authors fear that there may be contraction at the site of excision of the intussusception, though the fæcal cord material at that location is usually fluid. In connection with the intestinal trouble this child suffered with the desquamation, the nephritis, and the swollen cervical glands of scarlatina.

7. Hernia Into the Ileocolic Fossa.—Secord quotes Moynihan, who describes the ileocolic fossa as a narrow fossa or chink between the anterior or ileocolic fold in front, and the enteric mesentery, ileum, and a small portion of the upper and inner part of the cæcum behind. The same author states that it is only of anatomical interest and has no pathology, and up to 1899 he was unaware of any reported cases of hernial protrusions into this fossa. The case reported by Secord is, therefore, of interest, as it was a distinct and undoubted hernia of the cæcum, appendix, and four inches each of the terminal ileum and ascending colon into the ileocolic fossa, with strangulation and obstruction caused by the anterior vascular folds. Abdominal section was performed, the obstruction was relieved, and the patient recovered.

Letters to the Editors.

THE INTERNAL SECRETIONS.

2043 Walnut Street,
Philadelphia, *November* 19, 1906.

To the Editors: Dr. Theodore G. Davis must have a curious idea of the rights of others if he believes that he can misrepresent and misquote a writer—even before his work is finished—without arousing a "discussion." I always hail with pleasure any criticism backed by evidence, but I draw the line on sweeping statements which have no foundation in fact.

As to the supposed "antagonism between the adrenals and the thyreoid," every one knows that iodine is the main active principle of thyreoid extract and that in cretinism, myxœdema, and kindred conditions thyreoid extract in *therapeutic* doses increases all oxidation processes, nutrition, growth, etc. Every one knows also that *toxic* doses act in the opposite way—namely, by inhibiting the heart. It does not take much thyreoid extract (three grains, three times daily, have caused death in a child) to bring about this result, while it takes a relatively large dose of adrenal extract to do so. Hence the *supposed* "antagonism between the thyreoid and the adrenals," which does not exist when carefully gauged therapeutic doses of both drugs are used experimentally. Moreover, the brilliant experiments of Crile, among others, have demonstrated the properties of adrenalin in exhaustion and shock, the restoration of vital activities, etc. Adrenal extractives thus do in acute cases of depressed vitality what thyreoid extracts do in chronic cases of a similar kind.

That both iodine and thyreoid lessen vascular hypertension is also a familiar fact. But how is this result brought about? Precisely in the manner defined above. I refer repeatedly in *Internal Secretions* and elsewhere (*Journal of the American Medical Association,* February 4, 1905) to the fact that hyperactivity of the adrenal system—which includes the thyreoid and there-

fore its thyreoidin—promotes the destruction of toxic wastes by enhancing oxidation. It is upon this fact that I based my contention that we should use adrenal stimulants, including iodine, in epilepsy, tetanus, eclampsia, etc., just as we use thyreoid extract in the tetany following thyreoidectomy to *prevent* spasm. Now, one of the most prominent causative factors in such disorders, as shown by Spitzka and others, is a high vascular tension. This being due to the action of toxic wastes, thyreoid extract, through its iodine, by stimulating the adrenals, increases the activity of all oxidations and the destruction of spasmogenic agents, with general vasodilatation as end results. It is to this action, in fact, that I attribute the beneficial influence of iodine and the iodides in diseases due to inadequate catabolism. C. E. DE M. SAJOUS.

1504 PINE STREET,
PHILADELPHIA, *November* 20, 1906.

To the Editors: If Dr. Theodore G. Davis, of Los Angeles, sees fit to publish over his own signature statements loose, inexact, or incorrect, he is at full liberty to do so. If he makes statements of this character concerning the findings of another, he, by that act, invites a possible "controversy," or at least correction. If he deplores the "controversy" thus initiated, it is a simple matter to substantiate on scientific grounds the facts controverted. I myself have been a careful student of Dr. Sajous's researches, and I am increasingly impressed with their practical value.

In France and Germany the subject of the internal secretions is absorbing attention rapidly. Soon America will learn of this and of a great many essential facts which Dr. Sajous was first to put on record nearly four years ago. J. MADISON TAYLOR.

* * * We cannot devote further space to this controversy. Interesting matter bearing upon the subject will be found in the proceedings of the Medical Association of the Greater City of New York which we publish in this issue.

Proceedings of Societies.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Meeting of October 15, 1906.

The President, Dr. T. E. SATTERTHWAITE, in the Chair.

The Therapeutic Uses of Thyreoid Preparations.—Dr. O. T. OSBORNE, of New Haven, read a paper on this subject. After referring to the physiological actions of the thyreoid, he laid stress on a point to which, he said, he had often before directed attention, viz., that all increased secretions of this gland would give symptoms, and all decreased secretions would give symptoms. He then went on to say that the gland was easily excited temporarily to increased secretion by emotion, grief, and sexual excitement, and for a more prolonged period during menstruation and pregnancy. It was thus seen that the thyreoid was a much more active and necessary gland in women than in men, and, in fact, nearly three fourths of all cases of disturbed thyreoid secretion occurred in females. The profuse menstruation of young girls was largely due to excessive activity of this gland, while underactivity of it gave amenorrhœa and chlorosis. Many times chlorosis was as successfully treated with small doses of thyreoid as with iron, and in amenorrhœa no drug was, in his opinion, at all comparable to the thyreoid. As age advanced, from fifty on, the thyreoid normally began to secrete less than at earlier ages. Vasomotor tension, therefore, increased and arteriosclerosis developed, and with it all the phenomena of connective tissue deposits. The nervous excitability of our present lives led to overstimulation of the thyreoid, and, with nervous tension, strain, and alertness, caused men to have arteriosclerosis earlier than formerly.

Another fact which had to be taken into consideration was that any gland might have its chemistry so disturbed as to offer a perverted secretion. This was doubtless the reason that in some cases of hæmophilia thyreoid feeding had been successful, while in others it had made the condition worse. The thyreoid, he believed, had something to do with the production or destruction of the red blood corpuscles. He had seen the blood count improve under thyreoid in cases of chlorotic anæmia, and he had seen cases of epistaxis and uterine hæmorrhages, in stout, overweight women, with slow pulse, have this bleeding stopped by thyreoid. On the other hand, thyreoid would make stout, overweight women who had amenorrhœa menstruate, and make normal women menstruate more profusely. The thyreoid also had something to do with sugar metabolism. Glucose had often been noted in the urine when thyreoid treatment had been pushed, and he had seen cases of diabetes have the sugar output greatly increased under such treatment. Myxœdema was often complicated with diabetes, and the same was true of acromegaly, a disease in which the thyreoid was always abnormal. Moreover, cretins had become affected with diabetes under thyreoid treatment.

Dr. Osborne thought it unnecessary to discuss the successful use of thyreoid in cretinism and myxœdema. In ordinary goître he believed it would often do harm by stimulating the gland to increased secretion, and perhaps causing Graves's disease to develop from a simple goître. Here an iodide was much safer than large doses of thyreoid, while in exophthalmic goître thyreoid was positively contraindicated. Cases of Graves's disease reported to have been improved by thyreoid were probably in a period when the gland was beginning to diminish its secretion and the case was naturally curing itself. There could be no doubt, he thought, that the proper treatment of this affection was by one of the antithyreoid preparations or sera. Obesity was well treated by small doses of thyreoid, long continued; but large doses were dangerous. Twenty to thirty centigrammes [three to four and a half grains] of the dried gland, two or three times a day, was generally sufficient, and this treatment was very valuable in the case of young people, especially in women under forty, with scanty menstruation. When perspiration was nearly absent, with a dry and scaly skin, whether occurring in infancy or in old age, small doses of thyreoid were of great service. The eczemas of old people could also be improved by the use of thyreoid. In high blood tension, after fifty, he had seen marked benefit from it, and the same was true of the asthma of old age.

The speaker said that he now had on his records a number of cases of epilepsy treated successfully with thyreoid. His attention had first been drawn to the use of this preparation in epilepsy by several cases of the disease occurring in women at the menopause, the patients showing a suggestive periodicity. In several cases also in young girls at the time of puberty the fits showed periodicity. He believed the trouble was purely toxic, and that the toxæmia was in excess periodically when the patient should have menstruated. In such cases he found he could control and prevent the epileptic attacks as well with thyreoid as with bromide, and with much better results to the system. He was also convinced that in uræmia thyreoid did good. While it could not cure the condition, it seemed to prevent the toxæmia which caused convulsions, and even warded off, for a time, the coma. In pregnancy he believed

that when there were headaches and many nervous symptoms, and especially if the kidneys were not doing perfect work, thyreoid should be given in small doses as a preventive of eclampsia.

Parathyreoids in Physiology and Therapeutics.—This paper was read by Dr. JAMES J. WALSH. He said that it was not long after the discovery of the importance of the thyreoid gland that attention was called to certain small glandular bodies in juxtaposition to the thyreoid, but readily distinguishable from it in histological structure.

Gley and Munk had shown that if the thyreoid was removed, while the parathyreoids were allowed to remain, the symptoms which had ordinarily followed upon removal of the gland did not occur. Later, MacCallum found that dogs from which the parathyreoids were removed had a series of symptoms very closely resembling those met with in severe cases of Graves's disease. As a result of these observations, Dr. Walsh and others had employed parathyreoid material in the treatment of the latter disease. In some instances it appeared to do good, and in others not, and the same was true in the obscure affections known as Parkinson's disease. One great obstacle to employing this agent was the extreme difficulty in getting pure parathyreoid, and this fact would perhaps account for the failures noted.

The Physiological Action and Uses of Adrenal Extractives.—This was the title of a paper by Dr. C. E. DE M. SAJOUS, of Philadelphia. Having stated that the prevailing view as to the entrance of oxygen into the blood and the elimination of carbon dioxide was that these occurred in accordance with the physical laws of diffusion of gases, he said that Landois had recently ascribed the absorption of oxygen to a chemical process. The only other conception of the respiratory process that had received serious attention was the secretory theory of Bohr, who in 1891 showed that, contrary to the prevailing view, the oxygen tension was not greatest in the alveoli, but in the arterial blood, and that pulmonary respiration could be accounted for only by the presence of "a kind of internal secretion," derived perhaps from the alveolar membrane and capable of taking up the oxygen of the alveolar air. Bohr's results were confirmed by other investigators, all of whom recognized the need of the secretion referred to. The main feature of Bohr's theory, however, had failed to come to light, viz., the source and identity of the internal secretion which absorbed the oxygen of the air. It was this function which, in a work published in 1903, Dr. Sajous ascribed to the secretion of the adrenals, a conclusion which additional researches had sustained.

He then presented some of the facts upon which this conclusion was based, and went on to say that, on the whole, the adrenal secretion, as he interpreted its functions, took up the oxygen of the air in the pulmonary alveoli, and became the constituent of hæmoglobin which carried on the oxidation process in all tissues. This conception appeared to him to afford a clear explanation of the rôle of the adrenal secretion in pathogenesis and of the manner in which adrenal extractives produced their therapeutic effects. Perhaps the most interesting relationship of the adrenal secretion with the genesis of disease was the experimental production of glycosuria in a number of investigators by injections of adrenal extract continued for a long period. In his *Internal Secretions,* Dr. Sajous had ascribed glycosuria to overactivity of the adrenals, the excessive oxidation in all tissues causing an increase in the production of the agent which converted glycogin into sugar. Such a process was readily accounted for by increased metabolic activity in the pancreas. Herter and Wakeman had shown, however, that glycosuria could also be produced by painting the pancreas with 1 c.c. of a 1 in 1,000 solution of adrenalin, a result also obtained by compressing the adrenals. The question as to how this form of glycosuria was produced introduced an important feature of Dr. Sajous's views concerning the physiological action of adrenal extractives, in the sense that it gave an insight into the manner in which these extractives produced their effects when applied locally, viz., that the active principle of the adrenal secretion was the general catalyzer of our tissue elements, thus fulfilling a rôle which Traube many years ago concluded was necessary to account satisfactorily for cellular oxidation. The adrenal active principle, having loaded itself with oxygen in the lungs, became in the tissues, owing to its catalytic property, an intense oxidizing agent.

When Herter and Wakeman painted an adrenalin solution over the pancreas, therefore, they incited a very active metabolism in all the cellular elements reached by the drug, because it behaved precisely as if it had reached them by way of the circulation. As a result of this overactivity, an unusual proportion of amylopsin (among other pancreatic ferments) was secreted, and glycosuria followed, just as if adrenalin had been injected into the blood stream, or as if the adrenals had been compressed. This did not mean that such was the only way in which adrenal secretion might produce glycosuria, but it afforded a good example of the general facts which led the speaker to conclude that a local application of adrenalin produced blanching and contraction of a given tissue by inciting excessive metabolism in that tissue, including its blood-vessels. This explained, he thought, how the surgeon could obtain a bloodless field for local operations, and why adrenal extractives prevented or arrested hæmorrhage in such organs as the liver, from vessels small enough to be occluded by constitution of their walls. Since Moore and Purinton had found 2½ cubic millionths of epinephrin to the killogramme of dog, capable of producing appreciable effects, it became evident that we must be dealing with an agent, such as catalyzer, one capable of inciting, in proportion to its own volume, enormous activity through the intermediary of some other agent—in this instance, oxygen. This accounted also for the gaping vessels, secondary hæmorrhages, œdematous infiltrations, etc., sometimes met with after operative procedures in which adrenal extractives had been used. Hence the advisability of employing as weak a solution as would satisfy the needs of the case when operating or when using this agent for the depletion of engorged tissue. Another action of adrenal extractives which Dr. Sajous's views seemed to elucidate was the production of arteriosclerosis by their prolonged use.

Shock was another condition in which adrenal extractives showed prominently their influence on metabolism. A fall in temperature was a characteristic feature of shock, and the function now ascribed to the adrenal secretion involved the conclusion that it was a prominent factor in sustaining the bodily heat. The brilliant results of Crile with adrenalin in salt solution, given very slowly and gradually for a long time, thus formed a normal explanation. He supplied the organism with the very substance which sustained the vital process in the tissue cells. Applying this general principle to the internal use of adrenal extractives, a salient feature asserted itself, viz., that whenever they had been found useful in a general disorder, it had invariably been in some condition attended with or due to lowered metabolic activity or adynamia. In conclusion, he referred to their use in cases of asthma accompanied by lowered vasomotor tone and in migraine, hay fever, neurasthenia, cardiac weakness, and Addison's disease.

Organotherapy from a European Point of View.—Dr. ARNOLD LORAND, of Carlsbad, said that some of the actions of thyreoid preparations could be explained by the iodine contained in them. Milk contained the internal secretions of the various ductless glands, including the thyreoid, and in this way iodine entered into the composition of the milk. In the thyreoid the iodine was contained in the colloid substance of the gland, and as the thyreoid of the infant was very poor in colloid substance, the infant received the iodine it required from the mother. The treatment with thyreoid extracts, in small doses, was harmless, even with their prolonged use, provided such extracts were taken from the fresh glands of healthy animals that were not too old, and that not much meat was taken by the patient. The experimental investigation of Breisacher and Blum regarding the action of meat in such cases showed that glycosuria might result from thyreoid treatment if a considerable quantity of meat was eaten at the same time. This had been observed by the speaker in two cases where previously no alimentary glycosuria could be produced after a test dinner in which a large amount of carbohydrates was ingested. He went on to say that the use of thyreoid had a favorable influence upon arteriosclerosis and cirrhotic conditions of the liver and kidneys. He had also seen good results in cases of chronic nephritis from the use of extracts of the fresh kidneys of the pig. In cases of defective elimination of sodium chloride he had observed a considerable augmentation of this after thyreoid treatment, which also increased the elimination of uric acid. In insomnia he had obtained excellent results in a number of cases from the employment of the serum of animals whose thyreoids had been extirpated. He had also found ovarian extract of service in the nervous symptoms following the menopause and castration. He believed that the further development of the subject of organotherapy promised much for the future.

Dr. EGBERT LE FEVRE had found that patients with pure myxœdema improved under thyreoid. In various other cases, more or less obscure, he had been somewhat disappointed in the results obtained, and he thought it worth while to utter a word of caution against the indiscriminate use of thyreoid. Dr. Sajous's theory, he thought, was a good working hypothesis, although he had to confess that, having read his work carefully, he had not quite been able to follow him in all his deductions.

Dr. S. P. BEEBE spoke of the continued good results following the use of the Beebe-Rogers serum in Graves's disease. In some instances in which there had been slight relapses after the withdrawal of the treatment a single injection had appeared to set the patients right again.

Dr. C. AMENDE spoke of the value of thyreoid fluid extract, made from fresh glands, in cancer cases, and presented a patient in excellent condition. In this case a laparotomy done by Dr. Delatour in March, 1905, subsequent to a right colostomy and the establishment of an artificial anus, had revealed an "inoperable" adenocarcinoma of the sigmoid flexure and upper part of the rectum. When the patient was first seen by Dr. Amende, in April, 1905, extensions had developed into the iliac fossa and along the anterior rectal wall. In this instance, as in others, the first result noted had been the disappearance of the cachexia, and it was his conviction that this extract contained a substance which acted as an antibody to the cancer toxines. Pain also was alleviated. Röntgen rays, too, acted in this way, but the united effort of the two exceeded that of either singly, and it was his practice to combine treatment by both these agents. Against growths protected by bones he thought no hope could be held out.

Book Notices.

La Fièvre bileuse hémoglobinurique dans le bassin du Congo. Par le Dr. LOUIS VÉDY, Docteur spécial de l'Université de Bruxelles, Médecin de Ire classe à l'Etat Indépendant du Congo. Paris: A. Maloine, 1907. Pp. 152.

The author in this practical, first hand study of hæmoglobinuric icteric fever, as seen in Central Africa, inclines to the view that the disease is an essential fever *sui generis,* often associated with and influenced by malaria, but independent of it. Neither is it to be confounded with the hæmaturia occasionally produced by the hæmolytic action of quinine, the salicylates, coal tar derivatives, and certain other medicaments. Dr. Védy's contribution will be of interest to all students of tropical medicine.

Handbuch der Sauerstofftherapie. Unter Mitwirkung von Dr. H. BRAT (Berlin), Dr. W. COWL (Berlin), Professor G. GAERTNER (Wien), Branddirektor E. GIERSBERG (Berlin), Professor E. HAGENBUCH-BURCKHARDT (Basel), Professor H. KIONKA (Jena), Professor A. VON KORANYI (Budapest), Professor LOEWY (Berlin), Professor N. ORTNER (Wien), Professor J. PAGEL (Berlin), Dr. H. VON SCHRÖTTER (Wien), Dr. L. SPIEGEL (Berlin), Dr. H. WOHLGEMUTH (Berlin), Dr. L. ZUNTZ (Berlin), Dr. N. ZUNTZ (Berlin). Herausgegeben von Dr. med. MAX MICHAELIS, Universitäts-Professor. Mit 126 Textfiguren und 1 Tafel. Berlin: August Hirschwald, 1906. Pp. vii-551.

The book is dedicated to Ernst von Leyden, the well known Berlin clinician, who writes an introduction to it. In these remarks he gives a condensed review of the history of the use of oxygen in therapeutics, and states that he himself began his therapeutical experiments with oxygen in 1866—forty years ago—at the medical clinic of the Königsberg University; but researches in other fields interested him more and took him away from oxygen.

The book is divided into two parts, the theoretical and the practical. Pagel, the historian of medicine of the Berlin University, gives us the history of oxygen on ten pages of text, with seven pages of references. The physiological bases of the oxygen therapy is the subject of the second chapter, treated by Loewy and Zuntz, while the experimental basis is handled by W. Cowl, in the later part assisted by E. Rogovin, of St. Petersburg. The chapter on physicochemical investigations on the oxygen therapy is by A. von Korányi, of Budapest. Chapters 5, 6, and 7 are contributed by Max Michaelis, of Berlin (technics of oxygen therapy, and the therapeutical indications of oxygen), and by Gustav Gärtner (intravenous oxygen infusion).

This brings us to part two, of twice the size of the first part, which consists of nine chapters, divided among H. von Schrötter, of Vienna (this is the most important subdivision, and it has been handled in a thorough manner without the cumbersome addition of a long list of references), H. Brat (the importance of oxygen inhalation in tissue hygiene), H. Kionka (oxygen treatment in poisoning), E. Giersberg (the practical use of oxygen therapy in mining and in fire departments), Leo Zuntz (oxygen in surgery), E. Hagenbach-Burckhardt (oxygen in gynæcology), Norbert Ortner (oxygen in medicine), and Leopold Spiegel (the new forms of oxygen medicaments). A tenth chapter is added, containing an addition by Loewy and Zuntz to their second chapter in part one.

The volume is a valuable addition to the literature on oxygen, unique of its kind, and should prove the leading textbook; it deserves its title.

BOOKS, PAMPHLETS, ETC., RECEIVED.

Consumption. Its Relation to Man and His Civilization. Its Prevention and Cure. By John Bessner Huber, A. M., M. D., etc. Philadelphia: J. B. Lippincott Company, 1906.

A History of the Boston City Hospital From Its Foundation Until 1904. Authorized by the Trustees and Edited by a Committee of the Hospital Staff, David W. Cheever, M. D., A. Lawrence Mason, M. D., George W. Gay, M. D., and J. Bapst Blake, M. D. Boston: Municipal Printing Office, 1906.

The Röntgen Rays in the Diagnosis of Diseases of the Chest. By Hugh Walsham, M. A., M. D., F. R. C. P., Chief Assistant in the Electrical Department of St. Bartholomew's Hospital, etc., and G. Harrison Orton, M. A., M. D., Assistant in the Electrical Department of St. Bartholomew's Hospital, etc. London: H. K. Lewis, 1906.

The Masters of Fate. The Power of the Will. By Sophia P. Shaler. New York: Duffield & Co., 1906.

Retinoscopy (or Shadow Test) in the Determination of Refraction at One Meter Distance, with the Plane Mirror. By James Thorington, A. M., M. D., Professor of Diseases of the Eye in the Philadelphia Polyclinic and College for Graduates in Medicine, etc. Fifth Edition, Revised and Englarged. Philadelphia: P. Blakiston's Son & Co., 1907.

The Nervous System of Vertebrates. By J. B. Johnston, Ph. D., Professor of Zoölogy in the West Virginia University. Philadelphia: P. Blakiston's Son & Co., 1906.

Transactions of the New Hampshire Medical Society at the One Hundred and Fifteenth Anniversary, held at Concord, N. H., May 18 and 19, 1906.

Transactions of the Twenty-eighth Annual Meeting of the American Laryngological Association, held at Niagara Falls, N. Y., May 31, June 1 and 2, 1906. New York: Published by the Association, 1906.

Travaux de chirurgie anatomo-clinique. Par Henri Hartmann, professeur agrégé à la faculté de médecine, chirurgien de l'Hôpital Lariboisière, etc. Troisième série. Chirurgie de l'intestin. Paris: Georges Steinheil, 1907.

Miscellany.

President Eliot to the Doctors.—President Eliot's address to the doctors in Sanders Theatre at the opening of the new Harvard medical buildings on September 25, 1906, is such a forcible and illuminating statement of the present needs and future scope of the medical sciences as to deserve the special attention of all intelligent persons. Nothing could better illustrate that broad grasp of complicated technical questions which has made President Eliot himself the virtual reorganizer of medical teaching in the Harvard School. The address is in the first place a singularly clear exposition of the way in which "medicine" has become "the medical sciences," and is now on the way to being absorbed in "science." Progress from the crude medicine of barely half a century ago has been due in chief part to the adoption of the methods of research followed in physics and chemistry, and one result has been to make the medical explorer also in some part chemist and physicist. The relatively small incursions that have so far been made into bacteriology, and the study of human relations with the infinite hosts of the microscopic world, have begun to show how important to mankind is knowledge that has hitherto hardly been recognized as a part of the concern of society. Medicine is becoming comparative biology, guided by chemistry and physics, and seeking the explanation of our bodily ills in the nature and conduct of primitive forms of life. Popular comprehension of this broadening scope of medicine is hardly to be expected, even though it offers a goal that we should aim to reach. President Eliot makes an important proposal on this point in declaring the need of popular instruction by the medical schools—of lectures and exhibitions which shall reach the working classes and lead them to see that there are broad principles applying to the maintenance of good health as clearly as other principles support good morals and public order. New social conditions, and the intercourse of all parts of the world with each other, have brought new problems into the question of the public health, and the public at large must be educated if the advice of experts is to be effective in warding off harm. Such lectures as are proposed are greatly needed, and unfortunately the need of them is not confined to "the working classes." On the contrary, "intelligent people" are astonishingly ignorant of many of the chief facts of their own structure and the principles on which their bodily well being—and to that extent the well being of society—depends. The promiscuous reading of "doctors' books" is decidedly not good for the layman. But there is a general understanding of facts and laws which would greatly better the public, and which the public now largely lacks. —*Boston Weekly Transcript*, October 5, 1906.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending November 23, 1906:

Places.	Date.	Cases.	Deaths.
Smallpox United States.			
Illinois—Galesburg	Nov. 3-10	15	
Indiana—South Bend	Nov. 3-10	9	
Louisiana—New Orleans	Nov. 3-10	5	
Montana—In 3 counties	Oct. 1-31	6	
Wisconsin—In 26 counties	Sept. 1-30	232	
Smallpox—Foreign.			
Argentina—Buenos Ayres	Oct. 6	18	
Austria—Galicia	Sept. 16-22	2	
Chile—Antofagasta	Oct. 6-20	13	
Chile—Coquimbo	Oct. 6-20	64	2
Chile—Iquique	Oct. 6-20		Present.
Chile—Talcahuana	Oct. 6-20		Present.
Colombia—Cartagena	Sept. 30-Oct. 20		Present.
India—Calcutta	Oct. 6-13		1
Italy—General	Oct. 22-29	2	
Yellow Fever—Foreign.			
Cuba—Cruces	Nov. 15	2	
Cuba—Habana	Nov. 15-20	7	
Cuba—Santa Clara	Nov. 17	1	
Cholera—Insular.			
Philippine Islands—Manila	Sept. 15-29	30	20
Philippine Islands—Provinces	Sept. 15-29	450	362
Cholera—Foreign.			
India—Calcutta	Oct. 6-13		28
India—Madras	Oct. 13-19		12
Plague—Foreign.			
Egypt—Alexandria	Oct. 12-24	4	3
Egypt—Gabieh Province	Oct. 24	1	
Egypt—Minieh Province	Oct. 14	1	
Egypt—Port Said	Oct. 21-24	2	1
Egypt—Suez	Oct. 15-25	6	4
India—Calcutta	Oct. 6-13		11
Japan—Osaka	Sept. 17-Oct. 6	21	14
Mauritius	Aug. 30-Sept. 14	24	20
Peru—Lambayeque	Oct. 6-20	2	
Peru—Lima	Oct. 6-20	4	
Peru—Paita	Oct. 6-20	1	
Peru—Salaverry	Oct. 6-20	1	
Peru—Trujillo	Oct. 6-13	7	
Turkey—Adalia	Sept. 26-29	3	1

Public Health and Marine Hospital Service:

List of Changes of Station and Duties of Commissioned and Noncommissioned Officers of the Public Health and Marine Hospital Service, for the seven days ending November 21, 1906:

AMESSE, J. W., Passed Assistant Surgeon. Orders to report at Washington, D. C., temporarily revoked. Ordered to report to Medical Officer in command at Ellis Island for duty.

CARRINGTON, P. M., Surgeon. Leave of absence granted Surgeon Carrington for fifteen days, from October 29, 1906, amended to read for ten days only.

DE VALIN, H., Assistant Surgeon. Granted leave of absence for three days, from October 15, 1906, under Paragraph 191 of the Regulations.

DUKE, B. F., Acting Assistant Surgeon. Granted leave of absence for twenty-five days, from November 20, 1906.

FOSTER, S. B., Acting Assistant Surgeon. Granted leave of absence for thirteen days, from November 17, 1906.

GRIBBLE, B. G., Acting Assistant Surgeon. Granted leave of absence for three days, from November 15, 1906, under Paragraph 210 of the Regulations.

GRUBBS, S. B., Passed Assistant Surgeon. Granted leave of absence for five days, from November 28, 1906.

GUTHRIE, M. C., Assistant Surgeon. Relieved from duty at Habana, Cuba, and directed to proceed to Ellis Island, N. Y., reporting to Medical Officer in command for duty.

HALLET, E. B., Acting Assistant Surgeon. Granted leave of absence for three days, from November 28, 1906.

MCCONNELL, E. F., Acting Assistant Surgeon. Relieved from temporary duty at Banes, Cuba, and directed to rejoin his station in Habana.

MCCOY, G. W., Passed Assistant Surgeon. Relieved from duty at Fort Stanton, N. M., upon expiration of leave of absence, and directed to proceed to Washington, D. C., for temporary assignment in the Hygienic Laboratory.

MCLAUGHLIN, A. J., Passed Assistant Surgeon. Directed to proceed to Trieste and Fiume, Austria, for special temporary duty, upon completion of which to rejoin station at Naples, Italy.

ONUF, B., Acting Assistant Surgeon. Granted leave of absence for twenty days, from November 23, 1906.

PETTUS, W. J., Assistant Surgeon General. Directed to proceed to Chicago, Ill., for special temporary duty, upon completion of which to rejoin his station at Washington, D. C.

ROBERTS, NORMAN, Assistant Surgeon. Granted leave of absence for six days, from November 19, 1906, under Paragraph 191 of the Regulations.

SAFFORD, M. V., Acting Assistant Surgeon. Granted extension of leave of absence for seven days, from November 21, 1906.

STILES, CH. W., Chief, Division of Zoölogy, Hygienic Laboratory. Detailed to represent the Service at the meeting of the Association for the Advancement of Science, in New York, December 28-29, 1906.

THOMAS, E. M., Pharmacist. Granted leave of absence for four days, from November 9, 1906, under Paragraph 210 of the Regulations.

VON EZDORF, R. H., Passed Assistant Surgeon. Granted leave of absence for fourteen days, from November 21, 1906.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, for the week ending November 24, 1906:

BRECHEMIN, LOUIS, Lieutenant Colonel and Deputy Surgeon General. Granted one month and twelve days' leave of absence, on surgeon's certificate of disability.

JEAN, GEORGE W., Captain and Assistant Surgeon. Retired from active service, with the rank of captain, November 7, 1906, on account of disability incident to the service.

PALMER, FRED W., Captain and Assistant Surgeon. Advanced to the rank of captain, from November 14, 1906.

WEBB, W. D., Captain and Assistant Surgeon. Relieved from further duty at Fort Huachuca, Arizona, and from further duty with the Army of Cuban Pacification, and will proceed from Washington, D. C., to Fort Snelling, Minn., and report for duty.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending November 24, 1906:

LANGHORNE, C. D., Surgeon. Ordered to duty at the U. S. Naval Medical School Hospital, Washington, D. C.

MINK, O. J., Assistant Surgeon. When discharged from treatment at the Naval Hospital, Yokohama, Japan, ordered to report to the Surgeon General, U. S. Navy, Navy Department, Washington, D. C.

PUGH, W. S., JR., Passed Assistant Surgeon. Detached from duty on the *Lancaster* and ordered to duty on the *Tacoma*.

RENNIE, W. H., Passed Assistant Surgeon. Detached from duty at the Naval Hospital, Pensacola, Fla., and ordered to duty on the *Wasp*.

SNYDER, J. J., Passed Assistant Surgeon. Detached from duty on the *Tacoma* and ordered to duty at the Naval Hospital, Philadelphia.

STITT, E. R., Surgeon. Ordered to report on December 1st to the president of the Naval Medical Examining Board, Naval Medical School, for duty as a member of that board.

The following named medical officers have been ordered to report to the president of the Naval Medical Examining Board, Naval Medical School, Washington, D. C., on December 1st, for examination preliminary to promotion, and when discharged by the board ordered to resume duty at present stations:

JENNESS, B. F., Assistant Surgeon.

PLUMMER, R. W., Passed Assistant Surgeon.

RYDER, C. E., Assistant Surgeon.

SHAW, HARRY, Assistant Surgeon.

Births, Marriages, and Deaths.

Born.

MCALISTER.—In Monterey, California, on Saturday, October 27th, to Dr. John A. McAlister, Jr., United States Army, and Mrs. McAlister, a daughter.

Married.

BISSELL—NUTTING.—In New York, on Thursday, November 22nd, Dr. Dougal Bissell and Miss Helen Nutting.

KEENS—DOWSE.—In Albany, N. Y., on Monday, November 19th, Dr. William George Keens and Miss Jane Dowse.

OFF—MARSHALL.—In Philadelphia, on Wednesday, November 21st, Dr. William Lewis Off and Miss Margaret Anderson Marshall.

PALMER—RIORDAN.—In Alameda, California, on Wednesday, November 7th, Dr. Fred W. Palmer, United States Army, and Miss Marie Riordan.

ROWE—COLE.—In New Orleans, on Thursday, November 15th, Dr. Alfred R. Rowe and Miss Clara Louise Cole.

Died.

ANGNEY.—In Philadelphia, on Monday, November 19th, Dr. William M. Angney.

CHANDLER.—In Bethlehem, Pennsylvania, on Friday, November 23rd, Dr. William H. Chandler, Emeritus Professor of Chemistry of Lehigh University, aged sixty-five years.

CRAWFORD.—In Mars, Pennsylvania, on Sunday, November 18th, Dr. Frank Hamilton Crawford, aged thirty-two years.

DAVIS.—In Elmira, N. Y., on Sunday, November 4th, Dr. E. Howe Davis.

DE LOSS.—In Chicago, on Thursday, November 15th, Dr. Sarah Cooper De Loss.

GERHARD.—In Harrisburg, Pennsylvania, on Tuesday, November 20th, Dr. J. C. Gerhard, aged sixty-four years.

GREENLEY.—In Saranac Lake, N. Y., on Friday, November 16th, Dr. Thomas W. Greenley, of Baltimore, aged forty-one years.

HATHAWAY.—In Milwaukee, Wisconsin, on Wednesday, November 14th, Dr. D. G. Hathaway, aged forty-one years.

KOYLE.—In Fort McDowell, California, on Saturday, November 10th, Mrs. F. T. Koyle, wife of Dr. F. T. Koyle, United States Army.

LAROS.—In Coopersburg, Pennsylvania, on Thursday, November 15th, Dr. John Laros, aged sixty-eight years.

O'DWYER.—In Detroit, Michigan, on Tuesday, November 13th, Dr. Joseph P. O'Dwyer, aged thirty-seven years.

WALTER.—In Washington, D. C., on Saturday, November 17th, Dr. John Walter.

WALTER.—In Washington, D. C., on Wednesday, November 14th, Sophia Emile Walter, wife of Dr. John Walter.

WETTON.—In Camden, N. J., on Sunday, November 18th, Dr. Charles Wetton, aged thirty-two years.

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Original Communications.

THE PRINCIPLE OF TOP MILKS.*

BY HENRY DWIGHT CHAPIN, M. D.,
New York.

Since the general acceptance of the idea that fresh cow's milk should be the basis of the artificial food for infants, there have been proposed a great many schemes for modifying milk in the home on the percentage plan. By a process of natural selection, the "top milk" method has been gradually gaining the ascendancy, and when its advantages become thoroughly and generally understood and appreciated it will undoubtedly displace all other methods. That this method of modifying milk is displacing the cream and whole milk mixtures in general practice, I think, all will concede to be true. Why is it that the top milk method is meeting with such favorable reception? There are several causes, the most potent one undoubtedly being that it is easy to apply, and it is pretty generally advocated in the newer editions of the textbooks. But aside from the mere advantage of convenience there are applied through this method several principles of great scientific importance which make the method more valuable than appears at first sight. By its use the food is ready for the infants several hours sooner after milking than when bought cream and whole milk are used, or when it is necessary to wait for cream to rise in the home, a fresher food being the result; there is less danger of secondary contamination of the milk; and a great variety of percentage combinations may be made up with remarkably accurate results, gross errors being practically impossible.

For top milk modification, bottled milk is almost a necessity. As is well known, if milk is placed in the usual quart milk bottles shortly after milking and kept cool, the cream will rise rapidly and within four or five hours will all have risen, leaving only a fraction of one per cent. of fat in the milk under the cream. When such instructions as to the care of the milk are given to the milk producer, the growth of bacteria in the milk will be retarded, and when the milk is delivered to the consumer, not only will the cream be risen, but the milk will be in much better condition from a sanitary standpoint than if shipped in cans, which are not so easily and quickly cooled. The milk in bottles will not be opened in transit, and the danger of infection by the hands of drivers, by dust, or flies, is greatly lessened. The top milk method thus insures a fresher and safer food than when bulk milk is bought and allowed to stand for the cream to rise, which takes much longer than when fresh milk is used.

The strong point of the method from the physician's own personal standpoint is the ease with which percentages can be varied, and the mixtures made up by the nurse or mother. There are some who have not looked deeply into the subject who think that the method is inaccurate, but as a matter of fact no other method approaches it in accuracy, unless standardized milk and cream are used.

The principles on which the percentage modification by the top milk method are based are very simple, and are as follows: The fat of the milk being lighter than the serum rises to the top as cream. The proteids and sugar remain distributed throughout the milk, but are slightly less in the very rich cream of the upper layers. There are about five to seven ounces of cream on a quart of milk. If this cream is *all* removed along with enough of the remaining milk to make sixteen ounces, there will be two pints of milk, one containing all of the fat of a quart of milk, and the other pint being practically fat free. It is self evident that the percentage of fat in the pint containing all of the fat of a quart, or two pints of the milk, will be twice that of the original quart. If this was four per cent. there would be eight per cent. in the top pint. If all of the fat was in one third of a quart of milk the percentage would be three times four per cent., or twelve per cent.

In practice all of the fat does not rise in the cream, so this mathematical ratio does not hold good, exactly, in practice. Thus, the top fifteen ounces are about twice as rich in fat as the original milk, and the top nine ounces three times as rich, instead of the top half, or sixteen ounces, or the top one third, or ten and two thirds ounces. This rule holds good with any milk, and has been confirmed by a great many assays. The error should not be made of thinking that the top fifteen ounces or top nine ounces will contain any definite percentage of fat regardless of the richness of the original milk, for that would be an impossibility. A quart of three per cent. milk could furnish only sixteen ounces twice as rich, or containing six per cent. fat, and a quart of five per cent. milk sixteen ounces containing ten per cent.

* Read before the Section in Pædiatrics, New York Academy of Medicine.

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fat. The top ten and two thirds ounces, or one third from the quart of three per cent. milk, could not be richer than three times three per cent., or nine per cent., and the top ten and two thirds ounces from the quart of five per cent. milk could not contain over three times five, or fifteen, per cent. fat. Now, milk does not run absolutely constant in fat percentage, so a margin of error must always be allowed for. But by working on a basis of four per cent. milk the error will always be only a little above or a little below the calculated percentage. If standardized milk was used there would be no error at all. For several years I have been having the milk at the babies' wards of the Postgraduate Hospital assayed to determine how uniformly this rule held good, and below are the average assays:

	Whole milk. Per cent.	Top 20 ozs. Per cent.	Top 16 ozs. Per cent.	Top 9 ozs. Per cent.
1903	4.4	6.5	8.4	13.9
1904	4.5	..	8	12.4
1905	4.8	6.5	8.5	13.1

These figures represent the average results obtained from 676 separate assays made during the three years mentioned. It will be seen that the percentage of fat in the top twenty ounces is almost exactly one and one half times that of the whole milk; in the top sixteen ounces a little less than twice; and in the top nine ounces almost exactly three times that of the original milk. If four per cent. milk had been used there would have been obtained theoretically:

Whole milk. Per cent.	Top 20 ozs. Per cent.	Top 16 ozs. Per cent.	Top 9 ozs. Per cent.
4	6	8	12

When these milks are diluted to reduce the quantity of proteids the error of fat would seldom be greater than one quarter of one per cent., which is negligible.

No such certainty can be depended upon when part of the cream is removed and mixed with milk, or when cream obtained separately from the milk is employed. Allowing that no error is made in calculating the proper quantities to use, the wide variations in the composition of creams introduces a source of error that may make the result fifty per cent. to one hundred per cent. greater than was desired, and so tangle up the situation as to cast discredit upon the whole system of percentage feeding.

To recapitulate, the principles involved in the use of the top milks are: First, the use of milk bottled at the dairy as soon as possible after milking. Second, the rapid cooling of the bottled milk, which promotes separation of the cream, and retards bacterial growth. Third, the taking of definite quantities from the upper portion of the quart of milk which shall include *all* of the cream and a portion of the under milk. If this is not done no constancy in composition can be expected. After these steps have been followed, preparation of the food consists in simply diluting and adding sugar. In addition to the accuracy of this method, the natural emulsion of the milk is not destroyed, and there is no combining of creams and milks of possibly different ages. Any desired layer of cream and milk can be easily removed by the author's cream dipper, holding just one ounce. The percentage of proteid in the whole milks or top milks will not vary much from three and one half per cent. in any milk generally obtainable. For purposes of ready calculation, it is enough to consider the proteids as very nearly running equal to the butter fat in the whole milk up to four per cent. In the top nine ounces the ratio of fats to proteids will be three to one; in the top sixteen ounces, two to one; in the top twenty ounces, one and one half to one.

51 WEST FIFTY-FIRST STREET.

EXOPHTHALMIC GOITRE FROM THE STANDPOINT OF SERUM THERAPY.

By JAMES EWING, M. D.,
New York,
(From the Department of Pathology, Cornell University Medical College.)

(Concluded from page 1069.)

Is There a Rational Basis for Serum Therapy in Graves's Disease?

The chemical studies of the thyreoid gland in simple goître and in Graves's disease seem to offer definite indications for serum therapy. As these studies strongly support the theory of hypersecretion the first problem should consist in a production of an antibody for iodothyreoglobulin. The possibility of producing such an antibody falls quite within the range of well known immunity reactions. A further problem presents itself in the form of an attempt to control the cellular hyperplasia and overactivity by a cytotoxic serum. This problem opens up an entirely new field, in which one can be guided only by the concrete results of experiments. It is first necessary to determine if a specific thyreotoxic agent can be produced.

In 1894 Ballet and Enriquez described certain degenerative changes in the thyreoid cells and diminution of colloid in animals receiving subcutaneous injections of thyreoid substance. Gontscharukov (1902) treated dogs with serum prepared in sheep against emulsions of dogs' thyreoids. The animals exhibited symptoms of tetany, and other nervous phenomena somewhat resembling those of cachexia strumipriva, and their thyreoids exhibited absence of colloid in the lymphatics, swelling and nuclear degeneration of the parenchyma cells, obliteration of some follicles, and new connective tissue between others. MacCallum (1903) injected twenty dogs with one to five doses of serum prepared from emulsions of dog thyreoids in geese. The animals developed cachexia and some died from intercurrent conditions, but only once were definite nervous symptoms, choreiform movements, produced. In this animal the thyreoid cells were extensively degenerated. Since most of the animals showed normal thyreoids, and the nervous symptoms developed before the usual period at which they appear after thyreoidectomy, MacCallum doubted if any specific action of the serum upon the thyreoid had been demonstrated, either in his own or previous experiments. Yates has confirmed MacCallum's results, finding no cytolytic effects from a serum which agglutinated thyreoid cells in the test tube. Portis prepared sera in goats against the crushed glands, and also against the colloid of dogs' thyreoids. The course of immunization was prolonged until ten dogs' thyreoids were injected into the peritonæum at once. The serum thus produced proved to be extremely active, causing depression, convulsions, vomiting, rapid breathing, and early death in some cases and cachexia in others. Serum freed from hæmolysin and that produced from the colloid alone were considerably less active. In the thyreoids he found loss of colloid, desquamation and degeneration of the epithelial cells, followed after a time by papillary proliferations and

reparative processes. The parathyreoids and hypophysis were not affected, but the hæmolytic agent seriously damaged the liver, kidney, and spleen. Recently Slatineano reports that small doses of a thyreotoxic serum prepared in the usual manner caused enormous overproduction of colloid, while large doses led to necrosis of epithelium and disappearance of colloid. When injected into one thyreoid artery it produced necrosis of cells and loss of colloid on that side, while the opposite portion of the gland showed much less marked changes.

All these studies indicate, therefore, that the thyreoid gland may be more or less specifically affected by cytolytic sera prepared from the crude mixed proteids of the gland, but not without rendering the animal very ill and considerably affecting the integrity of the other organs.

In view of the specific action of sera prepared against the pure nucleoproteids of different organs as employed by Beebe, it seems reasonable to expect that such antithyreoid sera may be chiefly limited in action to the thyreoid gland. Whether by means of such a serum overactivity of the gland may be safely reduced is quite another question. If large doses reduce the size of the gland and destroy thyreoid cells, and small doses increase the activity of the organ, as Slatineano found, it may prove to be a difficult matter to properly adjust the dose so as to secure a harmless inhibitory effect, if such indeed be possible. MacCallum has noted in a dog a distinct diminution of nitrogenous metabolism similar to that occurring after thyreoidectomy, as a repeated result of injections of antithyreoid serum.

There appear to be no other observations which assure that overactivity of an organ can be reduced by such a serum, although the anæmia and reduced size of the thyreoid observed after administration of cytotoxic sera also favor such a possibility. Definite contraindications are, however, equally wanting. Careful clinical observations of the effects of the serum, cautiously administered, seem to be the only available guide in this field.

In an acute toxic case of Graves's disease, reported by Dr. Rogers, receiving over a period of three days before death several injections of the pure nucleoproteid antiserum prepared by Beebe, and which had acted well in other cases, the thyreoid gland removed shortly post mortem, presented a very unusual appearance. It contained very little colloid, was very soft, extremely light colored as though fatty, and presented minute hæmorrhages. On section it showed extensive desquamation of lining cells, which appeared to be largely due to traumatism during removal; the cells were in an active state of granular degeneration, but were not fatty, some cells were necrosing, and a few miliary hæmorrhages were present. A complete autopsy was not permitted.

Limitations of Serum Therapy in Graves's Disease.

Granting that there is a good theoretical basis for the employment of antitoxic serum directed against the thyreoglobulin, and a somewhat less certain outlook for the action of an antibody prepared against the nucleoproteid of the thyreoid gland in exophthalmic goitre, there are many considerations pointing to extensive limitations in the use of such a serum in all stages of the disease. Appreciation of these facts is especially necessary for an intelligent criticism of the clinical value of this or any other serum.

1. It is by no means certain that the thyreoid gland is the sole primary source of disturbance in the disease. Setting aside the nervous system as the usual path by which the exciting influence reaches the thyreoid, as the chief channel for the expression of symptoms, and as a prominent factor in maintaining the vicious circle, some other organs may possibly figure as primary factors with the thyreoid in maintaining the disease. First, may be mentioned the relation of Graves's disease to the constitutio lymphatica, the features of which have been noted in pronounced form in the earliest studies, and have appeared rather uniformly in the reports of autopsies up to the present time. An enlarged thymus was first noted by Markham in 1827. General lymphoid hyperplasia, especially of the pharyngeal ring, sometimes of the spleen, and of the intestinal lymph nodes are reported by many observers. Hypoplasia of the genitals is described by Kleinwächter, Farner, and others. In all of the present fatal cases the anatomical signs of lymphatic constitution were the most pronounced which I have seen in adults, and included enlarged hyperplastic thymus, and general lymphoid hyperplasia, especially of the pharynx, or also of the spleen, thorax, and abdomen. Hansemann has fully emphasized the necessity of suspecting the thymus to be associated with the thyreoid as an essential factor in the disease. Möbius, among others, has gone so far as to employ thymus extracts in the treatment of Graves's disease, although without definite results. Reinbach, however, reported favorable effects from the use of thymus extracts in both simple and exophthalmic goitre, and Cunningham found thymus tissue almost as active as the thyreoid in relieving symptoms in thyreoidectomized dogs. Possibly these effects are referable to the iodine content of the thymus.

Whatever may prove to be the connection between constitutio lymphatica with its enlarged thymus and Graves's disease, the existence of this condition in the majority of fatal cases stands as an obscure factor, which may escape the influence of a serum directed against the thyreoid.

2. The relation of the parathyreoids to the thyreoid, in the present imperfect state of our knowledge, is a source of some uncertainty regarding the ultimate nature of Graves's disease, and the possible importance of these organs in influencing the function of the thyreoid necessitates great caution in assuming that measures directed against the thyreoid alone can control the course of its functional disorders. The main facts which concern the theory of the parathyreoid origin of Graves's disease are so contradictory and inconclusive that their full consideration cannot be profitably undertaken at the present time. The more important observations are briefly as follows:

The removal of the parathyreoids, especially in young carnivora, is followed in a few days by muscular weakness, tremors, spasms, tachycardia, vomiting, albuminuria, convulsions, and death. Edmunds (3) observed slight exophthalmos, or

enophthalmos, or no change in the eye. According to Edmunds, Vassale, and Lusena, removal of the parathyreoids is followed by changes in the thyreoid similar to those of Graves's disease, distention of alveoli, cellular hyperplasia, the cubical cells becoming columnar, and the colloid tending to disappear. These changes, however, do not appear to be constant, and the fact stated by Edmunds that the entire thyreoid tends to diminish in size after removal of the parathyreoids renders it doubtful if the changes are really equivalent to those of Graves's disease. Moreover, it is difficult to see how all the parathyreoids of a dog can be removed without injury to the thyreoid. Likewise, the removal of the thyreoid is followed by some hypertrophy of the parathyreoids (Edmunds). This is probably because some of the glandules are commonly removed with the thyreoid

That there may be a functional relation between the thyreoid and parathyreoid is suggested by the report of Lusena that parathyreoid feeding relieves the symptoms arising after thyreoidectomy as well as those following parathyreoidectomy. Yet thymus extracts also relieve the symptoms following thyreoidectomy (Cunningham) and some of the parathyreoids are often removed with the thyreoid. After removal of the parathyreoids MacCallum found none of the disturbance of nitrogenous metabolism that occurs after thyreoidectomy, which might be expected to occur if the former glands were essentially connected with the function of the latter. Gley found relatively more iodine in the parathyreoids than in the thyreoids, but Mendel has shown that the presence of considerable iodine is not confined to these two glands. Moussu proposed to have improved a case of Graves's disease by parathyreoid feeding, but the patient died of tuberculosis before a definite result was obtained. MacCallum reports one entirely negative result of such treatment.

Strongly against the parathyreoid theory stand the results of examination of these glands in Graves's disease, since no serious or constant changes have been found. Benjamins examined the glandules in sixteen simple and three Basedow's goitres without finding any noteworthy changes. MacCallum, in four cases, found in two no changes except diminution in size. In two others he describes distinct degenerative changes in the epithelium and overgrowth of connective tissue. Humphry found the glands largely replaced by fat invasion in two acute fatal cases, but his figures show the bulk of the gland intact. In two others there was moderate infiltration by fat and the cells appeared to be degenerating, or "the protoplasm appeared to be degenerating and the nuclei were large and crowded together." All of these changes have been noted by Welsh, Humphry, and Berkeley after death from other diseases, and must, therefore, be regarded as without special significance. In four of the writer's cases the parathyreoids failed to show any significant alterations. In two they were entirely normal, in one there was moderate fat invasion, and in one the cells were increased in size and pale staining. I have had opportunity to examine about one hundred presumably normal parathyreoids collected by Dr. Ferguson and Dr. Rogers in this laboratory, and find that the variations in structure of the gland and in the integrity of the cells cover a range rather greater than that reported by most observers, and quite as extensive as that so far observed in Graves's disease.

It is extremely difficult to form an opinion on the significance of the experimental studies of the parathyreoids, since the variable number and position of these glands render their complete removal without injury to the thyreoid a difficult and uncertain undertaking. It is certain that their complete removal may cause death, and probable that some of their functions are related to those of the thyreoid, but the nature of this relation is as yet unknown. MacCallum, in his latest study, seems to incline to the view that the parathyreoids are rather distinctly separated physiologically from the thyreoids. Gley has maintained that the parathyreoids represent embryonal thyreoid structures which are capable of vicariously assuming the function of the thyreoid. Yet, several observers, lately Dieterle, report cases of total aplasia of the thyreoid in which the parathyreoids were normal.

The symptoms following parathyreoidectomy, especially in young dogs, somewhat resemble those of acute Graves's disease, a fact that cannot be ignored in considering the nature of this disease, but parathyreoidectomy in older dogs and in other animals has not always the same effects, and until further knowledge has been obtained it seems premature to attribute to the parathyreoids an essential rôle in Graves's disease in man. At any rate, there is not sufficient evidence at hand to establish such an important relationship for the parathyreoids, but only enough to encourage their further study in this and other conditions.

(3) The hypophysis has been implicated in Graves's disease by theoretical considerations and by the discovery of certain pecular changes in this gland in several cases. Howell and Cyon find that extracts of the hypophysis increase nitrogenous metabolism as does iodothyrein. Schönemann found no relation between the weights of the hypophysis and thyreoid in Graves's disease, but describes a marked increase of chromophilic cells in the former, the appearances resembling those described by Rogowitsch and Stieda after extirpation of the thyreoid in rabbits. In three cases Farner reports changes similar to those described by Schönemann, but Hämig could discover no differences in the hypophysis in five fatal cases of Graves's disease from those in six subjects dying from other diseases. The relation of the hypophysis to Graves's disease does not appear, therefore, to be extremely important.

(4) The lesions in the thyreoid itself in the advanced cases of the disease seem to constitute a more serious limitation to serum therapy. When the thyreoid becomes much enlarged from cellular hyperplasia, with colloid reduced to a trace, with diffuse growth of connective tissue obliterating capillaries and lymph vessels, with arteries

tortuous and sclerosed, with hyaline degeneration of the stroma and cyst formation, it is difficult to see how any therapeutical agent can permanently affect the disordered function of the gland. In some of the very cellular thyreoids the grade of hyperplasia approaches very closely to that of a true neoplasm, and it is possible, as many have assumed, that the process may at times belong in the class of tumors. In such cases the task required of an antiserum is that of limiting tumor growth which must be a much more difficult undertaking from that of relieving a functional hyperplasia.

In several authentic cases Graves's disease has developed into myxœdema, and since the natural history of the thyreoid lesion includes an initial stage of hyperplasia, followed by terminal fibrosis and atrophy similar to those found in myxœdema, there must be many phases of these related disorders which are coincident. Accordingly, a serum treatment designed to influence the earlier stages of Graves's disease, if really effective in those stages, must become less and less potent as the character of the morbid process changes, and in the later stages of prolonged cases it may even do harm. These theoretical deductions seem to be supported by the results of treatment of advanced cases, as reported by Beebe and Rogers. The serum treatment must apparently be adjusted to each case and stage of the disease, and this requirement opens up a new and practical field for the clinical and chemical study of the disease.

(5) The most serious difficulties in the way of a successful serum therapy seem to lie in the anatomical changes which arise in advanced stages of the disease in various organs. In the nervous system pathological studies have shown that in a considerable proportion of fatal cases one may expect to find various stages of fibrosis up to complete atrophy of the cervical sympathetic trunk, and atrophy of the vagus and cardiac nerves, sometimes atrophy of the corpus restiforme and fasciculus solitarius, as well as a great variety of minor and accidental lesions of the brain and cord (Mendel, Müller).

In the circulatory system may be found hypertrophy and dilatation of the heart, endocarditis, interstitial myocarditis, fatty degeneration of the myocardium, and coronary arteritis. While none of these lesions can be regarded as constant or essential factors in the disease, yet most of them, when present, interfere with restoration of health, and many must give incurable symptoms.

Finally Graves's disease is often associated with other functional and organic diseases, such as psychoses, epilepsy, diabetes, nephritis, cirrhosis of the liver, anæmia, and other conditions which render the subjects unfavorable cases for any hopeful therapeutics. The action of a serum, therefore, can be safely judged only in earlier or uncomplicated cases. In the later stages so many self perpetuating functional and organic sequelæ arise that effective influence over the original disorder seems much less likely to be secured. It is from this point of view that the value of serum treatment should be judged. It would also appear especially unwise to expect striking results in that group of cases classed as atypical Graves's disease, in which there is a great variety of symptoms of undetermined and very uncertain origin.

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260 WEST FIFTY-SEVENTH STREET.

REPORT OF THREE HUNDRED OPERATIONS FOR HERNIA.

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The attempt to present anything new to the medical profession regarding the treatment of hernias would be a work of supererogation. And still, by the report of three hundred cases successfully operated on something may be contributed to the knowledge of the subject and to the support of work done by eminent surgeons everywhere.

Though able to make the statement that I have been very successful in operating hernias, I am far from recommending surgical interference in all cases. On the contrary, that the operation of this distressing ailment which occurs so frequently in every age and station in life may be of real benefit, and to avoid bringing the surgeon's work into discredit with patient and medical profession, the following strict classification of each case is imperative:

(1) Hernias in which operation is not necessary or is contraindicated.

(2) Hernias most favorable to radical cure by operation.

(3) Hernias in which surgical interference is imperative to avoid continued disablement or threatened danger to life.

Operation is contraindicated in all cases of children under four years, whether the rupture be congenital or acquired soon after birth, the latter usually resulting from strong abdominal pressure, or from continuous crying. For these the uninterrupted pressure of a truss obliterates the open processus vaginalis, which in such cases is the hernial sac, thus producing a natural cure.

There are exceptional cases among young children in which the ruptures resist every sort of mechanical treatment, and, instead of disappearing, increase in size, and show symptoms of

strangulation. I have operated in six such cases. The little patients stood the operation remarkably well and made an uninterrupted recovery. Umbilical hernias, so frequent among children, usually respond also to proper mechanical treatment. I have found most effective a button placed upon the umbilicus, and secured by a two inch wide strip of adhesive plaster reaching across the stomach, renewed every five or six days. All other bandages are unsatisfactory, because they too easily slip out of position. Operation is still more seldom necessary in these cases than among inguinal hernias of such young children.

Even as upon children under four years of age operation for the radical cure of hernia should be the last resort, so in old age, a rupture should not be operated on without sufficient reason. I fix no age limit. Much depends upon the general condition and the individual constitution. But I have made it a rule not to operate upon a patient well along in the fifties simply to avoid the use of a truss. Aside from all other objections to operating connected with advanced age, old people, because of the relaxed abdominal walls, are more liable to recurrence; if not at the original opening, a new hernia may appear either above or below the former one, making the benefit of the operation problematic. Among these last mentioned, exceptions also occur. I now recall three such cases in patients over sixty years of age in which the rupture could not be controlled by a truss, and caused intense agony to the patients, from which they asked, decidedly, by any means, to be relieved. The operations, which I performed, were in each case successful. Recurrence was avoided by the use of a bandage supporting the entire abdomen.

What cases may we, then, with clear conscience and definite expectations of cure, recommend for radical operation?

First, children over four years of age, who have worn a truss for some time, but in whom the processes of healing have made no progress. Since one cannot force children of this age to remain quiet, and while they are running, jumping, etc., the rupture can not be cured, operation, in which the danger has now been reduced to the minimum, is not only justified, but becomes imperative, as the one sure guarantee of permanent cure. I have used the radical operation upon seventy-five chuldren between four and fourteen years of age without the loss of a patient, or, so far as I am able to learn, a recurrence in any case. Of these, sixty were boys and fifteen were girls.

Indication to radical operation occurs in still greater proportion among cases of hernia appearing later in life. Even the most conservative surgeon of to-day would scarcely hesitate to operate on the hernia of a young, and otherwise healthy man; since a rupture, be it ever so small, is an ever present danger to a young man obliged to earn a living. Still greater is the danger when his labor entails the lifting or moving of heavy objects, in which danger any one is liable at some time to be placed. A rupture is also a barrier to the pursuit of all athletic sports; and I will add that men so afflicted are rejected by the civil service commission. Every reducible hernia may become irreducible, and may also, without apparent cause, become strangulated. I do not deny that, in spite of this, very many people afflicted with large ruptures accomplish the heaviest tasks; but it is also true that their whole life is passed in constant agony, while, at the present stage of surgery, they might be relieved.

Attempts to cure ruptures were made in the early ages, but they were only attempts. The methods then used have for us to-day only an historical value. It was of comparatively recent date—in 1845—that Gerdy employed the invagination of the hernial sac, to close, by this method, the hernial opening. His results were also of questionable value. It was not until the beginning of the new era in surgery, after the introduction of asepsis, that success was attained by methods of radical operation. Socin, Lucas, Championnière, Kocher, Czerny and, above all, Bassini were the European surgeons who deserve the greatest credit for developing this new field of surgery; while in America W. T. Bull, Halsted, de Garmo, and Coley were the leading men connected with it. Some of these developed their own methods of operation, each of which has doubtless its own advantages. In this short article I can not afford the space necessary to elaborate the technical details of each. I have myself operated on ninety per cent. of all my inguinal hernias according to Bassini's method; sixty per cent. of these I have been able to observe for a term of years after the operation; four per cent. had recurrence; three fourth per cent. of these patients with recurrences had originally been operated upon for irreducible, and one-fourth for reducible hernias.

While a patient with an irreducible hernia of moderate size may have the choice between wearing a truss or submitting to a radical operation, the latter becomes imperative as soon as the rupture is irreducible and has begun to cause distress. Here mechanical aid becomes not only unavailing, but may be of real danger. The truss applied to an irreducible hernia may cause severe inflammation of the omentum, or the prolapsed adherent loop of the intestine, which frequently lead to phlegmone and peritonitis.

Great care must be taken in the treatment of ruptures of long standing and poor circulation. Forcible and reckless attempts to reduce an irreducible hernia must be strictly avoided, as such rough treatment frequently results in gangrene of the gut. This "bloodless therapeutics" is more dangerous than the knife. Such a case I once operated in a man of sixty years, upon whom repeated forcible taxis resulted in an enormous hæmatom within the hernial sac, brought about by the rupture of a large vessel in the omentum.

Should a patient with an irreducible hernia refuse to submit to an operation, I should decidedly prefer not to treat the case at all, rather than to further endanger the patient's life by improper therapeutics. Should, however, the irreducible hernia have reached such proportions that, apparently, the greater part of the contents of the abdomen lies in the hernial sac, operation is out of the question; as the abdominal cavity has so

contracted as to leave no space for its former contents. All that can be done for these unfortunate sufferers is to recommend the use of a suspensory bag, and careful regulation of diet.

I have operated on one hundred and five (thirty-five per cent. of the whole number) large irreducible hernias. This high percentage is to be explained by the fact that an irreducible hernia causes much more trouble to the patient than the reducible ones. While the latter often cause very little discomfort, an irreducible hernia is frequently a source of severe pain to is bearer, symptoms of acute indigestion and constipation rendering him unfit for work, and so lead him to seek the doctor's aid. Although these symptoms are inseparably connected with irreducible hernias, far greater is the danger from strangulation. Prolapsed omentum and intestine may have dilated the opening from the abdominal cavity, but it is a fact frequently demonstrated that anatomic conditions exist in the interior of the hernial sac which predispose to strangulation.

A condition caused by carelessness and indifference of the patient regarding his diet is coprostasis, a form of chronic constipation in which the entire contents of the intestines are accumulated and retained in the prolapsed and adherent part of the gut. The prognosis of such cases is very doubtful, and the only case of all my three hundred herniotomies which ended fatally was such a one. The patient died of nephritis nine days after the operation.

Two other cases I may here mention, of almost the same history, and so characteristic in their symptoms of the irreducible hernia. Both were women with old adherent and inguinal hernias, which suddenly became strangulated. One was sixty-two years of age with a rupture of thirty-five years standing, which twenty years before had become adherent. The other was fifty-five years old, with a hernia of twenty years which for ten years had been adherent. The first, up to the time of strangulation, had suffered very little inconvenience; the second, on the contrary, had frequently severe attacks of pain, and had often considered an operation. In both cases a loop of small intestine had become incarcerated in a slit in the omentum. I operated upon both with complete success.

The decisive reason for operating on the irreducible hernia is relief from constant impending danger to life, and to put the patient in such a condition that he is able to work.

Of the one hundred and five irreducible hernias on which I operated, eighty-four were inguinal, sixteen femoral, and five umbilical hernias. Seventy of those operated upon for inguinal hernias were men, and fourteen were women. Of those operated upon for femoral hernias four were men and twelve women; while of the cases of umbilical hernias there were four men and one woman.

Three times I found the appendix adherent to the hernial sac, and of these the following case was particularly interesting:

F. C., nineteen years of age, had small, right inguinal hernia apparently perfectly reducible, but patient complained of severe pain, which was increased by the wearing of a truss. Operation showed that the appendix, the sole contents of the hernia sac, had become adherent in its entire length, and contained three gunshot which patient had swallowed during his play. The further use of a truss would doubtless have been followed by appendicitis.

In all cases of adherent omentum, this was pulled out and spread, fanlike, the different meshes and vessels separately ligated and resected, and after this the wound completely closed. None of all these cases was accompanied by any complications, and patients were discharged cured after three weeks.

When the adhesions of the intestines were very extensive and difficult to separate, parts of the hernial sac were left fastened to the intestinal wall and reduced into the abdominal cavity without causing any trouble.

The age of patients operated upon for irreducible hernias varied from twenty-two to sixty-five years; eighty per cent., however, were under forty-five years of age.

RECAPITULATION.

Inguinal hernias	Irreducible	84 cases.
	Reducible	150 cases.
Femoral hernias	Irreducible	16 cases.
	Reducible	19 cases.
Umbilical hernias	Irreducible	5 cases.
	Reducible	11 cases.
Ventral hernias, following appendicitis or laparotomy		15 cases.

Inguinal hernias	201 male. 33 female.
Femoral hernias	7 male. 28 female.
Umbilical hernias	10 male. 6 female.
Ventral hernias	8 male. 7 female.

6 patients were under 5 years of age.
71 patients were between 4 and 14 years of age.
32 patients were between 14 and 20 years of age.
139 patients were between 20 and 40 years of age.
31 patients were between 40 and 50 years of age.
18 patients were between 50 and 60 years of age.
3 patients were between 60 and 65 years of age.
Total, 300.

75 WEST FORTY-SEVENTH STREET.

COMPULSORY REPORTS AND REGISTRATION OF TUBERCULOSIS IN THE UNITED STATES.

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Since tuberculosis is known to be an infectious and communicable disease it might be expected that the first step to be taken toward controlling it would be to require each case to be promptly reported to the proper authorities, as is done with other communicable diseases; but when this course was first proposed it met with many objections, due partly to the lack of knowledge among the public as to the nature of the disease and partly to the fact that it differs in some important respects from other communicable diseases.

These objections came mostly from physicians, who are naturally conservative, and who opposed such reports on the ground that they interfered with the confidential relations of patient and physician; that they would be made public, and so cause patients to leave physicians who made such reports and go to those who refused to make them; that such patients would be injured in various ways by allowing others to know they had tuberculosis; and that a stigma would also be placed on the family in which the disease existed.

Experience where such reports are made has

shown that these objections are not well founded; and in order to bring this experience up to the present time an inquiry was made in the last part of 1905 and first part of 1906 as to such reports in all cities of the United States having according to the census bureau a population of 48,000 or more in 1903, of which there are eighty-six. The health department or board of health in each city was asked, among other things:

Whether the city had any ordinance or regulation requiring the report and registration of all cases of tuberculosis; whether or not such reports were kept private when made; whether any difficulty was experienced in keeping them pirvate; whether there was now any serious objection on the part of physicians to making such reports.

Replies received show that such reports are required in fifty-three cities out of the eighty-six, of which fourteen require reports of all forms; sixteen of pulmonary only, and twenty-three did not state whether reports of other forms than pulmonary were required or not (see Tables I and II).

TABLE I.—CITIES HAVING COMPULSORY LAW FOR REPORTS AND REGISTRATION OF CASES OF TUBERCULOSIS, WITH POPULATION AND DATE OF THE PASSAGE OF SUCH LAW IN CHRONOLOGICAL ORDER.

City.	Population, Census 1900.	Date of law.
New York	3,437,202	January 18, 1897
Camden, N. J	75,935	December 27, 1897
Cincinnati, O	325,902	August 19, 1898
Elizabeth, N. J	52,130	March 6, 1899
Boston, Mass	560,892	May 1, 1900
Buffalo, N. Y	352,387	1900
Rochester, N. Y	162,608	1900
Trenton, N. J	73,307	January 8, 1901
Bridgeport, Conn	70,996	April 23, 1902
Lowell, Mass	94,969	September, 1902
Worcester, Mass	118,421	October 8, 1902
Louisville, Ky	204,731	October, 1902
Atlanta, Ga	89,872	October, 1902
Oakland, Cal	66,960	1902
Providence, R. I	175,597	January 15, 1903
Hartford, Conn	79,850	March 4, 1903
Cambridge, Mass	91,886	March 11, 1903
Omaha, Neb	102,555	June 30, 1903
San Francisco, Cal	342,782	October 27, 1903
Los Angeles, Cal	102,479	October, 1903
Memphis, Tenn	102,320	1903
St. Paul, Minn	163,065	January, 1904
Minneapolis, Minn	202,718	August 26, 1904
Reading, Pa	78,961	September 1, 1904
Somerville, Mass	61,643	October 6, 1904
†Des Moines, Ia	62,139	October 28, 1904
Springfield, Mass	62,059	November 1, 1904
Cleveland, O	381,768	February 3, 1905
Youngstown, O	44,885	February 6, 1905
Yonkers, N. Y	47,931	February, 1905
Paterson, N. J	105,171	March 3, 1905
†Salt Lake City, Utah	53,531	March 9, 1905
Grand Rapids, Mich	87,565	March, 1905
St. Louis, Mo	575,238	April 7, 1905
†Baltimore, Md	508,957	April 8, 1905
*Philadelphia, Pa	1,293,697	April 27, 1905
New Haven, Conn	108,027	April, 1905
†Milwaukee, Wis	285,315	May 15, 1905
Fall River, Mass	104,863	June 13, 1905
Waterbury, Conn	45,859	September 5, 1905
*Pittsburgh, Pa	321,616	September 10, 1905
New Bedford, Mass	62,442	November 8, 1905
Columbus, O	125,560	1905
Erie, Pa	52,733	January 1, 1906
Chicago, Ill	1,698,575	January 1, 1906
Lawrence, Mass	62,559	February 19, 1906
Peoria, Ill	56,100	February 20, 1906
Detroit, Mich	285,704	
Holyoke, Mass	45,712	
Seattle, Wash	80,671	
Wilkesbarre, Pa	51,721	
Troy, N. Y	60,651	
Indianapolis, Ind	169,164	

* State law: enforcement in this city began at about this time.

† State law.

TABLE II.—CITIES WHICH DO NOT HAVE COMPULSORY REPORT LAWS FOR REPORTS OF CASES OF TUBERCULOSIS.

City.	Population, Census 1900.	City.	Population, Census 1900.
New Orleans, La	287,104	Lynn, Mass	68,513
Washington, D. C	278,718	Savannah, Ga	54,244
Newark, N. J	246,070	Hoboken, N. J	59,364
Jersey City, N. J	206,433	Evansville, Ind	59,007
Kansas City, Mo	163,752	Manchester, N. H	56,987
Denver, Colo	133,859	Utica, N. Y	56,383
Toledo, O	131,822	Kansas City, Kan	51,418
Allegheny, Pa	129,896	San Antonio, Tex	53,321
Syracuse, N. Y	108,374	Duluth, Minn	52,969
St. Joseph, Mo	102,979	Charleston, S. C	55,807
Scranton, Pa	102,026	Norfolk, Va	46,624
Portland, Ore	90,426	Harrisburg, Pa	50,167
Albany, N. Y	94,151	Portland, Me	50,145
Dayton, O	85,333	Houston, Tex	44,633
Richmond, Va	85,050	Schenectady, N. Y	31,682
Nashville, Tenn	80,865	Fort Wayne, Ind	45,115
Wilmington, Del	76,508		

In six cases the date when the law was passed was not given, but in the others it took effect as follows:

Year.	Cities.	Year.	Cities.
1897	2	1902	6
1898	1	1903	7
1899	1	1904	6
1900	3	1905	17
1901	1	Three months of 1906	3

This shows a decided awakening to the necessity of such reports.

The total population of these eighty-six cities by the census of 1900 was 17,270,126, nearly one quarter of the population of the United States. The fifty-three which require reports had a population of 14,030,381, or 81.2 per cent., while those not yet having such a law contained 3,239,745, or 18.8 per cent.

In the larger cities this proportion is still greater, for of the twenty largest cities sixteen containing 10,953,081, or 91.5 per cent., have such a law and four with 1,018,325, or 8.5 per cent., do not; so that considerably less than one tenth of the population in the twenty largest cities do not have this regulation, and such reports are required in all the thirteen largest.

As to privacy, nine cities do not state whether the reports are kept private or not, two say that no one has asked to see them, seven that the reports are kept private, and thirty-one that they are "kept private without difficulty;" while in only three—Seattle, Des Moines, and Wilkesbarre—is it stated that the reports are open to the public. This furnishes conclusive proof that such reports can be kept private, as they should be, and that the objection of harm to the patient or his family by reason of publicity from such a report is without force.

The information as to the attitude of the medical profession in the different cities is a little more difficult to classify, as circumstances vary, and, as the dates given show, the laws in twenty cities had been in existence but a year or less, and in some were apparently not yet vigorously enforced; but the substance of the replies was as follows:

Cities in which there is no objection, or practically none	34
Cities in which there is little objection	11
Cities in which physicians object	5
Cities which do not state	3
	53

One of the cities objecting is Detroit, Mich., where an attempt to enforce the penalty resulted in a law suit, which was carried to the Supreme Court of the State and was not decided at last accounts. Pending this no attempt is made to enforce the ordinance, which still stands. It is apparent, however, that opposition is decreasing with the increase of knowledge on the subject, and in New York city, where the law has had the longest and most thorough trial, it is said that there is now "no objection whatever." The rec-

ords show that in more than 90 per cent. of all deaths from tuberculosis in that city the case has been previously reported to the health department.

In many of the cities it is difficult to determine from the replies just what proportion of all cases is reported. Some cities are evidently lax in the enforcement of the law, but the greater number make an honest effort to secure reports of all cases, and one declares that so far as is known they get them all. The results indicate an increasing efficiency on the part of the authorities commensurate with the growing interest in the subject.

The laws differ somewhat as to the action to be taken by the health authorities when a case is reported, but many of them follow very closely the course of procedure in New York city. In case the attending physician requests that no action be taken nothing is done except to record the case, as it is not intended to interfere in the relations of physician and patient where the physician assumes the responsibility. If, however, the case is in a tenement house where close contact endangers other people, or if the physician does not request that nothing be done, the health department inspects the place and takes pains to see that proper sanitary rules are observed, and that the patient and others are informed as to what precautions are to be taken to prevent infection. If the patient is unable of himself to secure proper food or proper nursing, measures are taken to provide the necessary care and nourishment. A report of the removal of any patient to another dwelling is required, and upon such removal or upon the death of the patient, disinfection of the premises is insisted on.

Enforced in this manner, with due regard to the relation of the physician who assumes the responsibility in all private cases, but supplementing and making up for any lack of medical attention or any carelessness where others are endangered, it has been found that there is no reasonable objection to such a regulation. Dr. Hermann M. Biggs, who for years has been the chief medical officer of the Department of Health of New York city, says:

> The notification of a case of tuberculosis does not require any action on the part of the authorities, if it seems reasonable to assume that such action is unnecessary. The very fact that tuberculosis is notified by the attending physician as a communicable disease has the greatest educational value, and justifies the assumption in those instances, in which the case is under the supervision of a private physician, that reasonable and necessary precautions for the protection of others will be taken.
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> . . . Experience has shown that the obstacles are largely imaginary; that the harmful results which were predicted as certain to follow have failed to materialize.—(*Medical News*, February 20, 1904.)

It is because of this extended experience in New York city, which is confirmed by that of other cities which have since adopted similar laws, that the sentiment in favor of such regulations in the cities of the United States is growing so rapidly.

In this inquiry but two instances were found in which any hardship had been suffered by the patient on account of lack of judgment on the part of inspectors of the health department; but in order to prevent this it is important that the law be properly worded. From a study of all laws obtained from the different cities, the following form, which is intended to cover the principal points, has been suggested as reasonable and practical, and as such has received the approval of a number of physicians prominent in the National Association:

AN ACT to provide for reports and registration of all cases of tuberculosis in ....., for the free examination of sputum in suspected cases, and for preventing the spread of tuberculosis in .....

BE IT ENACTED, etc. That tuberculosis is hereby declared to be an infectious and communicable disease, dangerous to the public health. It shall be the duty of every physician in to report to the health officer of said , in writing, on forms to be provided by said officer the name, age, sex, color, occupation, and address of every person in said having pulmonary or any other communicable form of tuberculosis, who has been attended by such physician for the first time, within one week after the disease is recognized. It shall also be the duty of the chief officer having charge for the time being of each and every hospital, dispensary, asylum, or other similar public or private institutions in said to report in like manner the name, age, sex, color, occupation, and last address of every patient afflicted with pulmonary or any other communicable form of tuberculosis who is in his care or who has come under his observation, within one week of such time.

Sec. 2. That the health officer of said shall make, or cause to be made, a microscopical examination of the sputum of persons having symptoms of tuberculosis, which shall be accompanied by a blank giving name, age, sex, color, occupation, and address of the patient whenever it be requested by the attending physician or by the proper officer of any hospital or dispensary; and shall promptly make a report thereof, free of charge, to the physician or officer upon whose application the examination was made.

Sec. 3. That the health officer of said shall cause all reports made in accordance with the first section, and all reports showing the presence of tubercle bacilli received in accordance with the second section of this act to be recorded in a register, of which he shall be the custodian and which shall not be open to inspection by any one outside the health department of said ; and neither said heatlh officer nor any one connected with said health department shall permit any such report or record to be divulged in such manner as to disclose the identity of the person to whom it relates, except as it may be necessary in carrying out the provisions of this act.

Sec. 4. That in case the attending physician fails to request in his report that they shall not be furnished, it shall be the duty of the health department to supply to each patient, or to those in charge of such patient, printed instructions as to the methods to be employed to prevent the spread of the disease in each case of tuberculosis so reported.

Sec. 5. That in case of the vacation of any apartments or premises by death from pulmonary or any other communicable form of tuberculosis, or by the removal therefrom of a person or persons so afflicted, it shall be the duty of the attending physician, or, if there be no such physician or if such physician be absent, of the owner, lessee, tenant, occupant, or other person in charge of said apartments, or premises, to notify the health officer, in writing, of such death or removal, within twenty-four hours thereafter, and such apartments or premises shall then be disinfected by the

health department at public expense, or, if the owner prefers, by the owner to the satisfaction of the health department, and shall not again be occupied until so disinfected.

Sec. 6. That it shall be the duty of every person afflicted with tuberculosis and of every person in attendance upon any one afflicted therewith, and of the authorities of public and private institutions or dispensaries in said to observe and enforce all sanitary rules and regulations of the health department for preventing the spread of tuberculosis.

Sec. 7. That upon the recovery of any patient from the tuberculous condition for which he was previously reported a report to that effect to the health department, made by the attending physician, shall be recorded and shall relieve said patient from further liability to any requirements imposed by this act.

Sec. 8. That any person violating any of the provisions of this act shall, upon conviction thereof, be deemed guilty of a misdemeanor, and shall be punished by a fine not exceeding twenty-five dollars.

Sec. 9. That all acts and parts of acts contrary to the provisions of this act, or inconsistent therewith, be, and the same are, hereby repealed.

It will be noticed that this suggested law provides for free examination of sputum, which has been found to be of the greatest assistance in the discovery and regulation of cases. The inquiry showed that of the eighty-six cities, sixty provided for free examination of sputum for all persons, three for free examination to the poor only, sixteen had no such provision, and no answer on this point was received from seven.

In order to discover how far such a regulation has the indorsement of leading medical authorities on this subject in the United States inquiries were made of a number of prominent physicians who are directors in the National Association. All these, with the exception of one who gave a qualified approval, were decidedly in favor of reports of all cases, as the following extracts from some of the replies show:

Dr. Hermann M. Biggs, New York city:

At the present time I cannot conceive of there being one single valid objection to the regulation requiring the reporting of cases of tuberculosis. The practicability and value of this procedure have been definitely and positively established by our experience in New York.

Dr. E. L. Trudeau, Saranac Lake, N. Y.:

It is evident to most of us who have been familiar with the subject of tuberculosis for some time that the first requisite for its control by the authorities would be the registration of all cases—for how they can take proper action, or, indeed, any action at all until they know this seems questionable. I quite agree with Dr. Biggs that as the matter has been practically tried in New York city, there has not been found one single valid objection to the regulation requiring the reporting of cases of tuberculosis.

Dr. Frank Billings, Chicago, Ill.:

I consider a law which would require a notification in all communicable diseases not only good, but absolutely necessary. Such a law is necessary to protect the community, and is of great value in the study of the communicable diseases.

The above applies, of course, to tuberculosis.

Dr. Edward O. Otis, Boston, Mass.:

The definite benefit we have obtained in Boston by our law is that we are educating the people and physicians to the realization of the fact that consumption is a contagious disease. Secondly, we are more and more finding out the cases, which is the first step towards control.

Dr. S. A. Knopf, New York city:

It has been sufficiently well demonstrated that the compulsory reporting of all tuberculosis cases, independently of all social or financial situation of the patient, is one of the most valuable phases in the anti-tuberculosis work of a community. It is most important from a demographic and statistical point of view and often helpful in discovering underlying causes of the prevalence of the disease in certain districts.

Similar testimony from other directors and from health officers of some of the largest cities might be given.

From all this it will be seen that the growing knowledge of the nature of tuberculosis and the increasing interest taken in the subject are having their influence in adding to the number of cities requiring compulsory reports and registration of all cases of tuberculosis, and that the wisdom of what is logically the first step to be taken in the control of the disease is confirmed by experience where it has been attempted in the proper manner.

PSYCHICAL AND MEDICAL TREATMENT OF CONDITIONS UNDERLYING GASTRIC PEPTIC ULCER.

By M. R. Barker, M. S., M. D.,
Chicago.

A discussion of this subject entails a task of no small dimensions. The question at once arises: What are these conditions, and when should their treatment commence? A reasonable answer would be: When the conditions manifest themselves. Yes, an easy declaration to make, but when do these conditions commence, and how?

Gastric peptic ulcer is the culmination of a series of morbid events, or underlying conditions, the successful treatment of which would be the scientific method of preventing gastric peptic ulcer. Tracing these to their origin, we have gastric peptic ulcer, hyperchlorhydria, a neurosis causing the hyperchlorhydria, and some morbid mental or psychical condition causing the neurosis. For instance, worry, apprehensiveness, anxiety, heredity, infelicity, dietetic errors, habits and customs.

Prophylaxis is the acme of treatment of all diseased conditions if possible. But preventive treatment cannot be applied in a large majority of cases of gastric peptic ulcer by the internist. Heredity we believe to be one of its most frequently underlying causes. The worrying, fretful parent begets offspring of like disposition. This innate morbid condition produces the neurosis, which causes the gastric glands to over secrete, and hyperchlorhydria is the result, which in its turn produces gastric peptic ulcer.

But we cannot prevent the dyspeptic from producing his kind, neither can we change the conditions of life so as to eliminate from it that atmosphere, in which morbid mental conditions seem to develop and thrive. Neither can we change things so as to eliminate from life the numberless causes of infelicities. Our only hope for preventive treatment in these cases, then, lies in a system of training, which shall in time eliminate from the

mind those morbid processes, or at least so educate it that it is not dominated by them.

The public schools, colleges, and universities, are the institutions established by civilization as the proper training places for the youth. In these institutions they are placed as quickly as they are able, for a few hours each day, to leave the parental hearthstone, and in these they remain during the formative period of life. From these institutions they enter the struggle for existence, which, in most cases, is life lasting.

We would not utter a word that would in the slightest degree impede the great work of these institutions if we could. But could we express a thought, or emphasize an idea so forcefully that it would be utilized by them for the good of humanity, the thought itself would be our greatest reward. In all of these institutions, from the primary grade to the termination of the university course, provision is made for the maintaining and promoting the physical side of humanity. This is fine and as it should be. Curricula are also devised by men trained in these things, the purpose of which is to mold the minds of those who pursue them symmetrically and so fashion them that they are better suited to meet the varied exigencies of a complex existence. Nothing could be more commendable.

In this magnificent system of training, we believe, one exceedingly important subject has been overlooked. To this we can only call attention in this paper. We refer to those morbid conditions of mind, inherited by some, and by others acquired, that are characterized by worry, over anxiety, apprehensiveness, jealousy, and others of like importance. Would we suggest the thought that our institutions, the business of which is the training of children and youth for usefulness in the world, and which practically control the mental and physical culture of these, from the ages of six years to twenty-one, should undertake the task of eliminating from the mind these morbid processes, or at least so cultivating the mind that it is not dominated by them? Certainly. Why not? Is it a reasonable policy for these institutions to pursue to train the body and mind for years that they may be strong and symmetrical, and leave certain morbid elements of the mind unnoticed to work havoc and ruin at the first opportunity, or by their continued action produce those neurosis which in turn produce diseased conditions, which render all the years of training, and life itself, of no value?

It would probably be impossible, under the best directed effort, to completely eliminate from the human mind these morbid processes. But we believe much could be done, if in every institution where the young are trained, a special system of psychological teaching was instituted, in which the viciousness of these morbid mental processes were impressed, and the youth taught how to grapple with the problems of school life, and after this in life's work, without apprehension; how the greatest successes are to be attained in life's struggle, with worry eliminated; that if they are to attain to their highest capabilities they must rise to a plane higher than that dominated by these morbid conditions. They should be taught to become mental masters of these morbid conditions, and never become their prey. We believe if the young were thus systematically trained, and when the effect of such training became widely disseminated, the neuroses which are caused by these morbid conditions and which in turn cause so many diseased conditions would markedly decrease.

In training of this nature we believe lies the preventive treatment, for all neuroses due to morbid mental conditions, among which, that which terminates in gastric peptic ulcer. We believe by a training of this kind, scientifically conducted and persisted in, that a large proportion of the inherited morbid conditions would be eliminated, by the beneficial action of such training upon future parents, and nearly all of those acquired by habit cured.

This brings me to another thought, in this connection, that is perhaps critical in its nature. This thought is, that these institutions for training the youth, by their present methods, foster, promote, and develop these morbid elements. No sooner does the child enter the institution in which he is to be trained to meet the responsibilities of life, than he commences to worry over some task assigned, or about some problem he cannot solve. Instead of being trained to use his normal mental powers in doing the work assigned, he commences to cultivate the morbid elements of his mind by using them. The habit of apprehensiveness is developed in much the same way, he becomes apprehensive lest they fail in certain requirements.

We do not criticise the effort of the trainer of the young in making them work and do things. But this is the point. Teach them to work and not worry, teach them to toil without apprehensiveness, impress the fact that they must do things but do them without undue anxiety. Teach them to divorce work and worry, toil and apprehension, the doing of things and anxiety. Commence this kind of training when the training of the child commences, and continue it as long as the training lasts.

It requires toil to keep the weeds from the cornfield, and thus produce the best conditions for filling the bins with perfect ears, instead of nubbins. He who would successfully cultivate the mental field should with equal zeal fight the morbid growths and stimulate those qualities, which, when matured, are perfect mental and physical results, instead of nubbins. Hence in answer to the query: Where should the treatment of these conditions commence? We reply: When the training of the child commences.

These thoughts are along the line of preventing morbid mental conditions, and thus preventing the neuroses that so often follow them.

We are now to discuss the treatment of conditions, when the neurosis is established, or hyperchlorhydria, the precurser of gastric peptic ulcer, is a fact. The case now properly belongs to the internist, and we believe that in the majority of cases of hyperchlorhydria, those efforts of the internist that are directed to changing the morbid mental conditions of his patients will result in most good. Do not misconstrue my ideas as rambling in the domain of Christian science. I am dealing only with scientific medicine. It is true that morbid mental conditions produce neuroses, and that these in turn produce hypersecretion of the gastric glands and symptoms of hyperchlorhydria result. It is rational scientific treatment to change

these morbid conditions in order that the neuroses cease, and the action of the gastric glands become normal.

The morbid conditions of mind which produce neuroses are not alone worry and kindred conditions, but they are multiple. Any morbidity which destroys the equilibrium of mind and matter may be culpable. One of my most aggravated cases was a religious fanatic. A constant brooding over the wickedness of the world had produced a neurosis, followed by hyperchlorhydria.

While all cases of hyperchlorhydria do not have their inception in a morbid mental condition, a large majority belong to this class, and in this class the hardest problems for successful treatment are found. The treatment of this class of cases, then, resolves itself into the use of methods by which the patient's mental attitude may be changed, and the flow of thought directed from morbid currents into healthful channels. How is this to be accomplished? Each case presents its own peculiar problem. Scarcely can any two be dealt with alike, even though the neurosis is produced by the same morbid mental condition; for instance, two who are given to excessive worry cannot have their condition changed by the same method. Reasoning may be effectual in one, while fear of results must be impressed upon the other.

Change of environment will work wonders in some cases. Change in habits and customs will be of the greatest value in others. The recluse must be enticed from his seclusion, while he who allows himself to be chased and chaffed by every bugbear, must be shown the insanity of his ways and made to change them.

In bringing about these changes in the minds of men and women, the internist will be called upon to use not only psychic powers, but therapeutics, dietetics, and hygiene will play important rôles in the work he assumes. Sometimes he will have to resort to measures that are only palliative, but which bridge over, and are indispensable. Among the most important which we may mention is gastric lavage. Some of the alkalies are also of value here, calcium phosphate, sodium bicarbonate, and magnesia. Their action neutralizes the acidity of the gastric juice and offers temporary relief.

It is not necessary to dwell upon the magnitude of the task of the internist in this class of cases. All of his tact, talent, perseverance, and skill will be necessary. To change the morbid mental conditions which are acquired is hard work, but to change the innate mental qualities of men is monumental, yet in this class of cases this kind of service is required.

As before stated, the neuroses that cause hyperchlorhydria are not always due to morbid mental conditions, but in a smaller class are cases in which the neurosis is due to abnormal physical conditions and habits of various kinds. In order that the treatment may be best directed in this class it is necessary to discover the peculiar morbid physical condition of each of its members that causes the neurosis in his case, and apply the remedy accordingly. Several subdivisions of this class may be made, due to the difference in ætiology, or due to the difference in the morbid conditions that cause the neurosis in each subdivision.

In this paper we can only refer to a few of the most peculiar of these subdivisions.

There is a certain subdivision of this general class in which diet and the long continued ingestion of large quantities of food produce hyperchlorhydria because of habit. In other words there is a class of individuals who for reason of hard, physical exertion, for long periods of time, demand large quantities of food during this time, and the food ingested by these is frequently difficult to digest. The gastric glands in these cases are called upon to supply large quantities of gastric juice, which they do normally, and they continue to do this normally as long as the demand is made. But when for some reason the physical efforts of these individuals is decreased or stopped, and food in such large quantities is no longer required by the system, nor ingested, the flow of hydrochloric acid from the gastric glands does not decrease, but continues from habit, the same as when needed by the presence of large quantities of food in the stomach. Hence a hyperchlorhydria due to habit. In this class of cases, or in this subdivision of the general class, that class of remedies represented by atropine are of the greatest value. They are of value because of their peculiar action of decreasing the secretions of glands.

We have another subdivision of this general class in which hyperchlorhydria exists, but the examination of the stomach contents constantly shows no more than a normal amount of hydrochloric acid in the gastric juice and sometimes even less. In these cases there exists a hyperæsthesia of the mucous membrane of the stomach. These stomachs are peculiarly susceptible to the action of hydrochloric acid and the normal amount of hydrochloric acid for digestive purposes, is not borne by them, and symptoms of hyperchlorhydria exists though the hydrochloric acid is normal. Some neurosis may be the underlying cause in these cases, but we believe that the trouble is more correctly chargeable to defects of nutrition. Anæmics are frequently found in this class. Therapeutics and other measures directed to the building up of the whole system are indicated. Arsenic and iron represent these remedies.

We may mention another subdivision of this general class, in which the principal ætiological factor is a direct application to the mucous membrane of the stomach, and the gastric glands, of certain irritants that produce a hypersecretion of hydrochloric acid, among which irritants we may mention pepper, spices of different kinds, mustard, and alcohol. These irritating spices are specially active when mixed together in the form of condiments, thus rendering them more indigestible and causing their retention longer in the stomach. To this subdivision belong people who take alcohol into the stomach several times daily, for long periods of time, or in other words, the moderate drinkers and a class of women, whose social duties include numerous functions, at which these mixtures are served, their vicious action being enhanced by the excitement of the occasions, under which digestion is always retarded. In these cases the habits and customs of the patients must be changed, diet changed, and those remedies exhibited which serve as sedatives, hyoscine and the bromides represent this class of remedies.

It would be useless for us to try to record in one short paper all the underlying causes of hyperchlorhydria. These are questions for the internist to solve, and we do not question his ability to do so. In this paper we have tried to impress some truths concerning the causes and treatment of those conditions which lead to gastric peptic ulcer, with the hope that our feeble effort may be reinforced by others and an impression made, and an effort started, which shall culminate in so training the young, that morbid mental conditions shall receive their proper attention. If these vampires of the mind could be eradicated, or if by cultivation of the mind it could be made so strong as not to be dominated by them, the physical ills of life, that now demand the services of physicians and surgeons, would markedly decrease, and the happiness of mankind greatly enhanced.

With our present methods of dealing with those conditions which lead up to gastric peptic ulcer, many cases will develop in spite of the best efforts of the internists. Do these cases still remain medical cases, or are they now properly in the domain of surgery? Without any hesitation, we say they are surgical cases. Let us repeat that we may not be misunderstood. When a case has been rationally treated for those conditions which result in gastric peptic ulcer, and the ulcer has developed in spite of such treatment, it no longer remains a medical case, but should be treated surgically.

We must not be understood, by this, as placing all cases of gastric peptic ulcers in the surgical category. There is a class of cases that do not apply for nor receive rational treatment, until the ulcer has developed. In these cases the underlying causes have not received adequate attention. In these cases often times the efforts of the internist are successful. But the internist should know his limits and not retain these cases too long, looking for results which do not come. In other words. these cases should be referred to the surgeon before they become hopeless. Cases in which the ulcer returns after being cured medically are, we believe, surgical cases. Of course in that class of cases where pyloric stenosis results from ulcer, the cases are surgical.

Some enthusiastic surgeons declare, that as quickly as ulcer of the stomach is diagnosticated, the case is surgical. It would be gratifying to some of us, who are more conservative, if surgery of the stomach could show such satisfactory results as to justify this view. While surgery of the stomach has developed at a remarkable pace, and rightfully occupies a leading place among surgical procedures, it is as yet imperfect. In other words, our present operative work upon the stomach is not accepted as the best that can be presented. The surgical mind is restless here and seeking something better. In other words, the surgical mind is not quite satisfied with present methods. When surgery of the stomach has reached the acme of perfection to which it is destined, all cases of gastric ulcer will belong to surgery. But not now.

Thus far we have desisted from the discussion of the treatment of gastric ulcer by the internist. We are ready to grant that he should be better acquainted with these methods than the surgeon is. But for the purpose of this paper we may be pardoned if we touch upon this subject. When ulcer is present the internist may be in doubt as to which of the various therapeutical methods to adopt. He will think of the bismuth method of Flexner, and the calcium carbonate method of Ewald, and the olive oil method of Cohnheim, and the sodium bicarbonate method of Krauss, all of which are rational and all of which are expected to serve about the same purpose. The bismuth and oil are best introduced into the stomach through a tube, though they may be given without the tube. The consensus, I believe, is that the stomach tube should not be used when ulcer is present, especially if there has been a recent hæmorrhage, in which cases silver nitrate and iron perchloride are the principal remedies, due to their astringent qualities.

In all cases of gastric ulcer, however, one thing is always indicated, and that is rest. Whatever else may be done, this is the most important. This is secured by rectal feeding, and very little if any stomach alimentation for a week or two in aggravated cases. The patient should remain in bed during all this time. In conjunction with this any of the methods detailed may be adopted which in the judgment of the internist best suits his case.

4625 GREENWOOD AVENUE.

MULTIPLE CHANCRE: REPORT OF A CASE WITH FIVE INITIAL LESIONS ON THE PENIS.*

By FRANK CROZER KNOWLES, M. D.,
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Probably all those who delve, more or less, constantly into the mysteries of syphilis have the opportunity of seeing multiple lesions. Contrary to numerous statistics on this subject I consider the multiplicity of the initial lesion as unusual. During the last three years I have had the opportunity of seeing over two hundred cases of primary syphilis, and of this number but three had multiple lesions, in one case three chancres on the breasts (1), in another two on the penis, and the last described below. From this statement it can easily be seen how very small my percentage of multiple cases has been as compared to other observers, notably Beaurain and Dumont (2), with twenty-five multiple lesions cases in ninety-one consecutively recorded. It might prove interesting to take the statistics of one foreign observer, Queyrat (3), with 26.2 per cent. of cases with multiple lesions and compare them with an American observer, Büchler (4), with twelve per cent. Of course some of the foreign statisticians have a much smaller percentage, as Lewin (5), with ten per cent. of multiple cases. As a whole, the physicians in the foreign centres report from one half more to double our number of multiple chancre cases. Various competent observers have reported so many lesions in certain cases that it almost seems as if multiplying spectacles must have been worn. Ehrmann (6) apparently heads this list, with thirty-six chancres in one case. Queyrat (3) reports two cases, one with twelve and the other with thirteen initial lesions. Danlos (7) records an interesting case with seven lesions of primary syphilis.

* Read before the Northern Medical Association of Philadelphia, on October 12, 1906.

Large numbers of multiple cases have been reported, chiefly by French and German authorities, with ten or more lesions. In six per cent. of Büchler's (4) cases of multiple chancre, five lesions were present, while nine per cent. were noted in Queyrat (3). The following case was seen in the genitourinary clinic of Dr. H. M. Christian at the Polyclinic Hospital:

A man, aged twenty-eight, and a laborer by occupation, came to the genitourinary dispensary of the Polyclinic Hospital on February 13, 1906, complaining of "tumors" on the penis. His past venereal history consisted of a bubo, which was opened, at twenty, and gonorrhœa at twenty-four. On examination of the penis an unusual condition was immediately in evidence, as five distinct, separate, swellings could be differentiated. Both chains of inguinal, the epitrochlear, and the posterior cervical glands could be easily palpated. The patient stated that his hair had been falling for over a week, and that it "hurt to swallow;" pains in the bones and muscles were also present. As far as could be ascertained the primary incubation period was about one month, the man having had frequent and promiscuous intercourse. On the glans penis on the right side and extending back to the corona was a dime sized indurated swelling. Two and a half inches from the aperture of the frenum on the right side of the shaft of the penis was another dime sized indurated lesion. At the base of the shaft of the penis on the left side, there was a third dime sized, raised, buttonlike, indurated lesion. Two other similar, indurated lesions were present on the anterior surface of the penis on a line one half inch behind the corona glandis almost in the median line. There was also a paraphimosis present at the site of these last two lesions. All of these lesions were densely indurated and could be lifted up between the fingers. It is only fair to state that all of these lesions had been cauterized, a few days after their appearance, by the physician first in attendance; but as the induration increased during two weeks' observation and as the inguinal enlargement was bilateral and noninflammatory, the deduction was obvious. On the patient's first visit an indefinite mottling could be detected on the chest. To insure against any possible error the case was watched for a few days, local treatment only being given. Our caution was rewarded by the appearance of a typical maculopapular eruption. The patient's powers of observation being limited, we had to take his statement guardedly, but he repeatedly stated that two of the lesions appeared synchronously, the third in a week and the remaining two followed in two weeks. If the man's statement indeed was true this case would come under the heading of Taylor's recent papers (8), (9); Evolution of the Initial Syphilitic Lesion or Lesions in Successive Crops, and Sabaréanu's (10) publication on Chancres syphilitiques successifs.

The man made a rapid recovery and after a few weeks' treatment disappeared from view. On August 3rd, five months after his last visit, I again had an opportunity of examining the patient and found the following: Pigmentation was present on the body at the site of the old lesions, five cicatricial scars were on the penis, and a quarter dollar sized, sharply marginate, raised, corrugated, moist, condylomatous lesion was noted to the right of the anal opening.

This case was exhibited before the Philadelphia Dermatological Society and the diagnosis of five chancres of the penis was concurred in.

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PYELONEPHRITIS.*

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Pyelonephritis appeals with equal interest to the physician, the obstetrician, the gynæcologist and the surgeon. A disease, which is overlooked by reason of its relative infrequency and its subtle onset, which often complicates other diseases and grades into these so stealthily as to arouse no suspicion, which unrecognized is fraught with ultimate danger, and early diagnosticated is capable of curative treatment, must invite the willing attention of all. A review of the literature of this subject indicates that the profession has paid it but little attention until recent years; the microscope, the cystoscope, the ureteral catheter, and the Röntgen ray have given new interest and impetus to its study.

The ætiology of pyelonephritis is predisposing and infective. Whether the predisposing cause be stone in the kidneys, pressure of gravid uterus, or tumor upon the ureters from without, congenital or acquired obstruction, or lowered resistance, it must never be lost sight of that these conditions are but preparation of the soil for the growth of the various microorganisms which invade the pelvis of the kidney either from the blood stream, the lymphatics, or as an ascending infection from the bladder.

Whenever in pyelitis or pyelonephritis obstruction to free outflow by the ureter occurs, pyonephrosis supervenes, and the organ suffers injury and ultimate destruction of tissue unless surgical relief is afforded. Pyonephrosis differs from pyelonephritis only in amount of distention.

Pyelonephritis of tuberculous origin forms a large and vital chapter in this subject which must in the present paper receive but brief notice. It is either primary or secondary to general infection; in the latter case the bacillus reaches the kidney through the lymphatics, or blood current, not by ascent from the bladder.

It possesses no distinctive physical features, though its symptoms are usually severe, and it depends upon the microscope, or often solely upon animal inoculation for identification. One must be especially suspicious of tuberculous infection in the pyelitis of infants, where it occurs frequently without apparently the presence of other foci.

Infection through the blood seems the explanation of the pyelonephritis of floating kidney, when torsion of the ureter has occluded its lumen; as also in imperforate ureters, congenital

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or acquired. Renal congestion from obstructive prostatitis, urethral or ureteral stricture, narrow meatus, paralysis from spinal cord injury, and pressure of new growths are predisposing conditions; pyæmia, septicæmia, erysipelas, burns, osteomyelitis, and infectious diseases in their later and grave stages are also responsible for a small number of cases. Surgically unclean instrumentation, with no credit to the profession, has given to this disease the term surgical kidney.

Since the infection is commonly an ascending one, the ætiology of pyelonephritis will most often depend upon the organisms found in the bladder and urethra of the subject. In women and female children it is in most cases the *Bacillus coli communis;* the juxtaposition of the anus, in females, rendering access easy through the short urethra. Pasteur in 1859 suggested the bacterial origin of cystitis; Escherich in 1886 discovered the colon bacillus, since which date many important papers have appeared developing the present established theory of the infective nature of cystitis and pyelitis, from the standpoint of both the bacteriologist and clinician. Notably among the former were the works of Reblaud (1), Wreden (2), Reymond (3), Sternberg (4), Escherich and Trumpp (5), Finkelstein (6), Hutinel (7), and especially the brochure of Melchior (8). Among clinicians Sir Henry Thompson (9), Henry Morris (10), Danforth (11), Allen (12), Fordyce (13), Alexander (14), and T. R. Brown (15), of Baltimore, have written important papers.

Recognizing that pyelitis and pyelonephritis in a great majority of cases are but an ascending infection from the urinary bladder it becomes of vital importance, I repeat, for us to comprehend the ætiology of inflammation of this viscus. Cystitis is frequent; the infection of the kidney much less so. I think it then, not out of place to present the abbreviated conclusions which Melchior (8) reaches in his résumé of elaborate bacteriological investigations.

(1) Every cystitis is due to microbes (barring rare cases from chemicals).

(2) Ordinarily we find one pure culture in enormous quantities.

(3) The bacillus found most frequently and described by other authors under different names, is identical with the ordinary intestinal parasite, the bacterium coli communis. It is pyogenic and infectious, of very variable virulence.

(4) In the urethra and prepuce of males, and in the vagina of females are frequently found these pathogenic bacteria, which introduced into the bladder can provoke a cystitis.

(5) The microbe alone does not produce cystitis, except in certain cases where the proteus vulgaris is present, which is a determining cause, by virtue of its energetic action in decomposing urea.

(6) The microbe can not cause a cystitis until the bladder has been rendered vulnerable by the influence of different predisposing agents like retention and traumatism.

(7) Retention or traumatism alone are insufficient, a microbe is always the cause.

(8) In every cystitis pus will be found but in varying quantities. The existence of a catarrhal cystitis is doubted.

With equal interest we examine the labors of the clinician. Most instructive are the investigations of T. R. Brown (15) reported in 1901. In his analysis of one hundred cases in women with suggestive symptoms, he found in two acute pyelitis, in twelve chronic pyelitis and pyelonephritis, in six tuberculous pyelitis and pyelonephritis. In Sternberg's collection from literature of twenty-nine cases of pyelonephritis in which the colon bacillus was the exciting cause, in twenty he found it in pure culture. In Brown's series of twenty cases of pyelonephritis in women he obtained in pure culture colon bacillus seven times, tubercle bacillus six times, proteus vulgaris four times, staphylococcus two times, and in one negative results.

By courtesy of Dr. Louis Lehr of this society I am able to incorporate in this paper the results of work recently done by Dr. H. H. Young and Dr. Lehr, which will be published in the April number of the Johns Hopkins Hospital Reports. Dr. Young and Dr. Lehr have collected from literature four cases of pyelonephritis or pyonephrosis showing pure culture of the typhoid bacillus and themselves report two most interesting cases in which the kidney manifestations were quite latent for some years after the fever had completed its course.

In the first of these two cases pyuria was noted at the beginning of an attack of typhoid in 1893. In 1898 the bladder was aspirated, and pure typhoid culture found in the urine, and it was then considered solely a bladder infection. In 1903, ten years from the original fever, the patient by accident discovered a mass in the right side. Up to this time his only symptoms had been frequent ill defined fevers and lassitude. The urine was acid, and urinary symptoms were wanting. Nephrotomy revealed a large pus kidney, with pure typhoid cultures and a calculus, in the centre of which Dr. Lehr discovered the proteus vulgaris in pure culture.

Thus the original infection of the proteus, which was responsible for the stone, had died out and been supplanted, on a favorable soil, by the typhoid bacillus during the fever attack. Manifestly the proteus developed stone, preceded the attack of typhoid. Recovery followed a final nephrectomy. The second case reported exhibited no physical signs or symptoms of kidney infecting barring general low health for years, following an attack of typhoid fever, until six months before he entered the hospital, when he complained of slight irritation after urination, without unusual frequency, and of nausea and vomiting. The urine was slightly acid and purulent. Death supervened before operation could be done, but autopsy revealed pure culture of typhoid bacilli from the pus of the kidney and a calculus, in the centre of which was a nest of typhoid bacilli.

This case, in the judgment of the investigators, was a primary pyelitis induced by typhoid bacilli, without preceding pathological conditions, and seems to throw some doubt upon Melchior's (8) sixth postulate, that the microbe can not cause an inflammation except the tract has been rendered vulnerable by predisposing agents. I report briefly from my own practice a case which seems to point to streptococcus infection solely through the blood.

A lady of seventy years, stepping out of her bath, slightly bruised her leg five centimeters below the insertion of the tendo patellæ. One week later a swelling at this point became pronounced and painful, and two days afterward she developed a sharp chill and high temperature. A free opening revealed a breaking down

hæmotoma infected with streptococci. The wound healed normally, but ten days after the evacuation of the infected cavity the patient developed chill, temperature was 105, there was extreme right lumbar pain and abundant pyuria in a secretion previously normal. Right lumber mass was palpable. Though now enjoying comfortable health moderate pyuria is constant.

Rovsing (16) has shown that through injection into the vein of the ear in animals cystitis and pyelitis can be produced.

Dr. F. R. Hagner presented before this society on January 17th a ball valve stone removed from the ureter of a man, twenty-one years old. This case is important as it demonstrates stone without bacteriuria or pyuria. At seven years of age this patient first suffered pain in the right lumbar region which continued intermittently until time of operation. He had discovered by accident that inversion of the body, with head low and deep inspirations usually relieved the pain and practised this method frequently during fourteen years. On examination Dr. Hagner could enter the ureteral catheter but two centimeters before impinging an obstruction, but by pressure he was able to raise the object a few centimetres upward. Collected urine from this ureter was normal in every respect and of sufficient quantity. Röntgen ray confirmed diagnosis of stone.

This case as well as those of uric acid stones from the kidney pelves of new born and young infants, not associated with pyuria, reported by Jacobi and others, confirmed the seventh postulate of Melchior (8), viz: Retention or traumatism alone is insufficient; a microbe is always the cause.

During the present week, Stanton (17), from the Bender Laboratory, Albany, has reported a case of pyelonephritis due to the ray fungus of cattle, the actinomyces confirmed to the right kidney. Cultures from the right kidney for other organisms were sterile. Rurah (18), Mallory (19), and Kobler (20) have also reported cases of actinomycosis, of the pyogenic form, involving the kidney.

In pædiatric literature which dates from papers of Monti (21) in 1883 and Holt (22), 1884, I have been able to find but thirty-seven cases of primary pyelitis or pyelonephritis reported, nearly all in female infants. Thompson (23) in 1901 reports eight cases, females, all containing colon bacilli in pure culture, and in most of the others in which bacteriological examinations were made colon bacillus was found in pure culture. In one of my own three cases, in infants under two years, soon to be published, I was able to secure a bacteriological examination, which revealed colon bacilli in pure culture.

An instructive group is the pyelonephritis of pregnancy. Williams (24) refers to the collection of twenty-seven cases made from literature by Brigand, beginning with five cases reported by Reblaud in 1892; since this publication at least eight cases have been reported, the latest in January of the present year by Cumston (25). I myself have met with one such case in practice.

Löhlein (26) and Olshausen (27), in sections on women dying in labor, have found practically in all cases some dilatation of the ureters. The ureter penetrates the pelvis at the sacroiliac junction. Ricard, as cited by Cumston, has shown that the distance which separates the ureters from the sides of the uterus is but 1.5 centimetres; as the uterus rises into the abdominal cavity it approaches nearer the ureters, and these are drawn somewhat out of position, flattened by direct pressure of the uterus and distended by the urinary stream from above. In many cases they reach the diameter of a goose quill and have been found dilated to the calibre of the small intestine, the right being usually the larger. This dilatation never appears in the intrapelvic portion of the ureteral tube, hence the pressure is from the gravid uterus at the superior strait. (Cumston). This dilatation of the ureter results in less of muscular contractility, mucous hyperæmia and consequent susceptibility to the invasion of such microorganisms as may be present in the urinary bladder.

The diagnosis of pyelonephritis is simple when lumbar pain, tumor, septic fever, and pus and kidney elements in the urine are all present. Not so, when one or all of these factors are wanting. In acute cases pain, excepting the pelvis lodges a calculus or pyonephrosis exists, is constantly absent; in chronic cases fever is not noted. barring exacerbations, which may be separated by months or even years. In a large group of cases, pus in the urine is intermittent, and many examinations will be made of specimens perfectly normal.

Literature abounds in undiagnosticated cases. Fischer (28) reports an obscure case without pyuria but with chills and irregular fever, diagnosticated malaria. Later on right lumbar tumor developed and was operated. Allen (29) reports a case of a woman of forty years reduced to a skeleton. The disease remained unrecognized for two years.

Thompson records a case in an infant mistaken and treated for pneumonia.

Radnitz (30) refers to a case with classic symptoms of appendicitis.

Gee (31) saw a case of extensive tuberculous destruction of kidney undiagnosticated, repeated urinary examinations being negative for pus, albumin, or blood, while autopsy revealed a shut off kidney. Frank (32) reports a case of double tuberculous pyelonephritis discovered by accidental examination of the urine, as the patient was perfectly well and without symptoms. Fuller (33) notes a peculiar case, previously in perfect health, developing during infection by glanders; both kidney pelves were purulent, on autopsy. Edington (34) saw a child of five years with symptoms dating back to the age of eighteen months, undiagnosticated. Autopsy revealed sacculated pelves and renal tissue destruction. There had been no rise of temperature until the day before death. Krotoszyner (35), in the present year, failing of diagnosis by all modern methods in a case of pyuria and suspicious history, exposed the kidney and found it a fluctuating sac, containing hardly any kidney tissues. Dr. J. Ford Thompson (36), of this society, in 1901 reported a case in a male child with grave bladder symptoms. Suprapubic cystotomy was performed but revealed no stone. Autopsy showed double pyelonephritis.

Dr. Claytor (37), of this society, in the discus-

sion of Dr. Thompson's paper, reported a male dying of pyelonephritis in his service at the Garfield Hospital; a diagnosis was not made during life.

In infants the disease has been constantly allowed to progress for long periods without establishing a correct diagnosis, mistaken for malaria, atypical typhoid, or prolonged intoxication of gastroenteritis. In young infancy the danger of error is increased by the infrequency and difficulty with which the urine is obtained. A valuable suggestion was made to me some years ago by Rotch as to the method of securing specimens of urine employed in the Boston Children's Hospital. A circular ring of cotton is covered with oiled silk or other impervious material and the infant is caused to lie on this pad, hollow in the centre, until urination occurs. It should be well borne in mind that rigor in infants under two years is almost unknown, excepting in pyelitis and pyelonephritis. Chills, septic range of temperature, and purulent urine, usually acid, are the cardinal symptoms in infancy.

In adults the use of the ureteral catheter is necessary in determining if one or both kidneys are involved and in ascertaining the urea eliminating capacity of the sound kidney in cases requiring nephrectomy. Howard Kelly (38) irrigates the kidney pelvis. Should the washings contain a little black debris which sinks to the bottom of the vessel, stone is indicated. In searching for stone in the pelvis he employs the ureteral catheter, the end of which is coated with a mixture of dental wax and olive oil, the bright smooth surface of which, under a low power lens will indicate stone, by its scratched appearance. The method is not available in male cases. A leucocytosis materially assists the diagnosis.

Finally we must appeal to the urine. Specific gravity in this disease is usually low. The distinction generally accepted, that pus in alkaline urine is referable to the bladder, in acid urine to the kidney, is not supported by late investigations; the great majority of infections of both bladder and kidneys are associated with acidity, i. e., with organisms which do not split up urea. In Roovsing's (16) series of sixteen cases of pyelitis without cystitis colon bacilli were found fourteen times in pure culture, all in acid urine. In Brown's (15) twenty cases of pyelitis in women, seven cases gave colon bacilli and six tuberculous bacilli in pure culture, i. e. thirteen cases with acid urine. *Proteus vulgaris* was found four times and a urea decomposing white staphylococcus twice, i. e., six cases of alkaline urine. In Brown's (15) series of twenty-six cases of cystitis the infecting agent was colon bacillus fifteen times, staphylococcus seven times, bacillus pyocyaneus and bacillus typhosus each once, in other words acid urine in pure cystitis in twenty-five of the twenty-six cases, and alkaline urine once only, from the proteus vulgaris. It is interesting to note that in all of Brown's fifteen cases in which urea decomposing organisms were present, a renal calculus was found, composed of phosphates and carbonates of lime and magnesium. From the centres of two stones a pure culture of the infecting organism was isolated, the agglutinated bacteria forming a nucleus for the precipitating alkaline salts. In only one case with acid urine did stone appear, composed of uric acid and urates.

The epithelium found in the urine does not definitely assist a differential diagnosis between bladder and kidney infections. Osler (39) says that in comparing the scrapings of the mucosa of the renal pelvis and bladder: "Both belong to the transitional variety and in both regions the same conical, fusiform and irregular forms with long tails are found." Simon (40) says: "Caudate cells are especially found in cases of pyelitis; similar cells are also found at the neck of the bladder." T. R. Brown writes me, February 7th: "I have never attached much importance to the diagnostic significance of the caudate cell, though I have paid a great deal of attention to the matter in the past." Dr. John M. Thacher, in a recent private communication, informs me that he places no dependence upon the fusiform long tailed cells in diagnosticating the kidney lesion. Clinical teachers of distinction, however, still regard the caudate cell as diagnostic of pyelitis. Holt (22), Rotch (41), and Morse (42), in recent communications, regard it as diagnostic in infancy. Rosenfeld (44) maintained that creation of pus cells was characteristic of pyelitis, but the theory is not confirmed.

Albumin is present in cystitis and in pyelonephritis. Broadly speaking, in bladder infection, albumin is slight; in kidney infection, especially when kidney tissue is involved, the amount is considerable. Rosenfeld (43) found that in severe bladder infections the amount of albumin was never above 0.1 per cent., in kidney infections it is 0.3 per cent. upwards. It is somewhat different in the primary pyelitis and pyelonephritis of infants, where, as a rule, only as much albumin appears as can be accounted for by the amount of pus present. Casts are definite evidence of kidney involvement.

The treatment of this disease is prophylactic and curative. The former consists, not only in strictly sterile instruments for catheterization and all operative work, but in antiseptic irrigations of the urethra and bladder preparatory to their introduction, delicacy in instrumentation, and in as infrequent manipulation as is consistent with necessity. Melchior (8) has shown in animal experiments that merely planting of colon bacilli in a healthy urinary tract produces no morbid condition; lowering the resistance by ligature or slight traumatism, the colon bacilli being present, is invariably followed by suppuration; these conditions exactly correspond to retention, and to rough manipulation in the human subject.

The urine should be carefully examined after operation on the urinary path and after labor, for the first indication of pyuria, and urinary antiseptics for ten days in all cases, as prophylaxis, is good treatment. Abundant water by mouth or colon is an adjuvant. These measures with bladder irrigation by boric acid or one of the silver salts, will prevent or cure most cases in the acute stage of infection.

Curative treatment also demands nephrotomy and drainage in case of stone or pyonephrosis; nephrectomy in tuberculous kidney and in such

later stages of pyonephrosis as have resulted in structural disintegration of the kidney. Joseph Price (44) recommends early incision and drainage in most cases of pyelonephritis. Alkaline urine should be rendered acid by benzoic, boric, or camphoric acid, and hyperacidity, a condition reported in a large proportion of infant cases, neutralized by alkalies.

In my personal experience hexamethylenamine and helmitol have proved of the utmost value. Since there remains considerable difference of opinion as to the value of hexamethylenamine I shall cite a case reported by McCay (45) of pyelitis in a child of seven years:

The urine was acid with a moderate amount of pus, and abundant colon bacilli. Potassium citrate rendered the urine alkaline and diminished the pus, but had no influence on the bacilli, which continued numerous and active; on the administration of hexamethylenamine, however, they at once lost motility, the number of colonies was lessened, and after a few days they entirely disappeared, and the patient made a rapid recovery.

The pyelonephritis of pregnancy, that startling complication, with high sepsis, rapidly recurring chills, and excessive temperature and prostration, demands prompt and speedy action. The vitality of the fœtus is already compromised; the integrity of maternal renal tissue soon will pass beyond repair.

Such a case five months pregnant came under my care two years since at Palm Beach. Leucocytosis 18,000, pus in acid urine, irregular intermittent temperature alternating between 105° and 106° and subnormal, caused me, following the advice of Williams (24), to quickly demand that the uterus be emptied. It was at the end of the season and the patient was removed to her home in Chicago, where it developed, in consultation, that the ablest surgeons advised nephrotomy. It was conceded, however, as probably a preliminary step, to induce premature labor. In five weeks the patient had absolutely recovered with pus free urine and so has continued.

Induced labor, performed as soon as diagnosis is established, will probably prove the only treatment required in the pyelonephritis of pregnancy.

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RELAXATION OF THE SACROILIAC SYNCHONDROSES, WITH REPORT OF CASES.

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It is the purpose of this paper to call the attention of the profession to a condition, new in its conception, and most important from a diagnostic standpoint.

In the *American Journal of the Medical Sciences*, January 1, 1878, Dr. Charles T. Poore reviewed the literature on the diseases of the sacroiliac joint. In his paper he referred to the cases of relaxation due to the puerperal state, which he excluded, including only those cases due to direct injury, or secondary to inflammation of the soft parts within the pelvis. I believe that many of the cases, due to injury, represented the more serious forms of relaxation, but were not recognized as such.

In the *Boston Medical and Surgical Journal,* of May 25, and June 2, 1905, Dr. Goldthwait and Dr. Osgood, first described the condition of relaxation of the sacroiliac synchondrosis, in an exhaustive article, together with results of rather an extensive anatomical research.

It has been my good fortune to have seen a number of these cases, examples of which I herewith report, together with a review of the subject as presented by Dr. Goldthwait.

Anatomy: Up to the presentation of Dr. Goldthwait's work, it had been generally accepted by the profession, even including many of the anatomists, that motion did not exist in the sacroiliac synchondrosis, except, as a phenomenon associated with pregnancy. By a series of experiments it was shown that motion did exist in practically every specimen examined, the test being made with bodies immediately after death at autopsy and in the anatomical laboratories of the Harvard Medical School. Probably, the most beautiful demonstration of motion was obtained by a cross section of the pelvis at about the level of the second sacral vertebra. In this section it was seen that a great arc of motion exists, and that the joint could be readily dislocated. Naturally when this dislocation could be so easily performed in the anatomical specimen, the same motion could take place in the living subject when the ligaments were not in tone.

Ætiology: The ætiological factors are numerous and varied, including the same factors which would cause a relaxation or sprain of ligaments in any part of the body.

Since disease of these joints also produces somewhat similar symptoms, and are often almost impossible to distinguish, these conditions will also be enumerated. The ætiological classification may be as follows: I. Physiological: a, pregnancy; b, parturition; c, menstruation; d, general lack of tone. II. Traumatic: A, acute; 1, direct blow to sacral region of back; 2, twisting of back in falls or sudden wrenching; 3, strain due to lifting heavy objects, the so called "stitch in the back." B, Chronic; 1, relaxation of lumbar curve of spine of spine due to long recumbency, i. e., typhoid fever, fractures, etc.; 2, body malformations causing prominent pendulous abdomens; 3, faulty methods of dress; 4, occupations and attitudes. III. Disease: a, infectious arthritis; b, hypertrophic arthritis (osteoarthritic); c, atrophic (rheumatoid) arthritis.

Symptomatology: Whereas the ætiological factors are numerous, the history in many of these cases bears a marked similarity. Backache is nearly always the complaint. The usual history, especially in my cases, seems to date back to a definite injury, since which time there has been difficulty in all motions or postures requiring a movement of the sacral region of the spine, such as sitting, getting up and down, stooping, or even lying, especially when a soft bed is used and a certain amount of anterior bending of the spine is produced, and a relaxation of the lumbar curve causing a strain on the sacroiliac ligaments.

The patient frequently gives a history of having used a pillow under the small of the back for the relief of this pain, or on lying have to guard their posture so as not to cause motion of the lower portion of the back, such as turning in bed or lying on side. The pain is almost always elicited by movements of the joints; otherwise they are comparatively free from discomfort. This, of course, only applies to the mild cases, there being extreme disability in the more advanced cases, as may be especially noted in one of my cases. (Case I.) As the mobility increases, the pain and disability increase, especially the referred pain to the gluteal and thigh regions, and along the course of the sciatic nerve. There may even be a dislocation, and in this condition the prostration is usually most marked. The pain which is always definitely referred to one or both of the joints, is evidently similar to a sprained condition of any joint, while the referred pain which is so often found in a part or entire extent of the leg Dr. Goldthwait alleges is due to a true sciatica produced by a mechancal irritation of the lumbosacral cord, where it passes over the brim of the pelvis, its point of passage being just as the sacroiliac joint. In such a sciatica pain may be obtained by point pressure over the course of the nerve, as in any classical sciatica.

On inspection of the sacral region often nothing can be seen, but usually one or more of the following signs may be made out: a, Prominence of sacrum; b, rigidity of spinal muscles (muscle spasm); c, lateral curvature of spine; d, obliteration of the spinal curve; e, swelling due to distention of the joint with fluid. And on palpation and manipulation: a, tenderness to pressure over the joint; b, mobility, elicited in several ways. 1. Patient in standing position, with one hand over the joint and the other over the symphysis pubis, have the patient actively or passively lift the leg with the knee flexed; 2, patient in prone position, leg lifting with knee straight, the arc of motion is limited on the pathological side at point of pain. It being practically painless to flex leg at hip with knee flexed, thereby relaxing the hamstring muscles, which when held in the tense position, cause a rocking of the pelvis about the sacrum as in the former case. 3, by compressing the crests of the ilia, thereby producing a flaring of the inferior strait with motion at the synchondrosis. It can readily be seen from this, how an improperly constructed corset, especially those compressing the waist line, or the so called straight front corset, causing lordosis, will have a tendency to produce a chronic strain.

The motions of the sacroiliac joint may also be demonstrated by the ordinary spinal motions which are of great importance in diagnosis: *a,* anterior bending being limited in the lumbar region; *b,* lateral bending more limited away from the affected side, the motion of either side being controlled at the point of pain; and *c,* hyperextension, like forward bending, being also limited. If these motions are attempted with the pelvis tightly held, it will be seen that all are much more freely executed.

The pelvic or rectal examination is often of value. In the cases of relaxation, as might be expected, nothing is made out, but where there is definite disease, swelling and tenderness may be obtained. It is quite important in such an examination, that it be made by one who is familiar with the normal conditions.

The history together with a combination of one or more of these symptoms, is practically diagnostic. An absolute diagnosis often being derived at by the

application of a properly fitting support, thereby relieving the symptoms.

Differential Diagnosis: In the past this condition has so frequently been incorrectly interpreted, and the treatment so inconsistent with the real condition, that it seems most important to point out some of the past mistakes, and if possible show the differentiations of the condition.

Among the faulty diagnoses of these sacroiliac conditions, may be enumerated the following: 1, hypertrophic or osteoarthritic spine; 2, chronic sciatica; 3, neurasthenic or functional spine; 4, lumbago; 5, muscular rheumatism; and 6, typhoid spine.

The condition hardest to distinguish is, hypertrophic (osteo-) arthritis of the spine. This is an especially difficult differentation to make when such a condition may also exist in the spine and other parts of the body; however, the special examination which produces motion of the synchondrosis will often make the diagnosis. An hypertrophic arthritis of the sacroiliac joint alone, however, would give quite similar symptoms and be practically impossible to differentiate.

True sciatica may be recognized by its cardinal symptoms, pain on pressure, or any movement producing a stretching or irritation of the nerve. It would seem, however, on reading several textbook descriptions of sciatica, that many of the cases heretofore recognized as sciatica as an entity, are in fact a sciatica produced by the mechanical irritation set up by the movement at the sacroiliac joint, and rather than having in many of the cases a disease, we have a very prominent symptom of another condition. The differential diagnosis is quite difficult, the condition of sciatica being present in both conditions. It is quite important, however, to demonstrate other of the signs of a relaxed sacroiliac joint, such as motion at the joint itself with accompanying pain, as demonstrated in many of the aforesaid ways, and by relieving the condition by treatment of the relaxed joint.

Neurasthenia, with symptoms of pain in the back, is a diagnosis that has been made altogether too frequently, there being, no doubt, such a condition, but the cases with definite pain referable to the lumbar region and legs, seem much more likely to be a mild form of this condition of relaxation. In fact I have seen two cases which had been treated for neurasthenia at one of our best institutions for a period of two years; and when treatment for relaxation of the sacroiliac synchondrosis was instituted, immedately began to improve. The diagnosis of neurasthenia being due to ignorance of this condition.

"Lumbago, one of the most common and painful forms of muscular rheumatism, affects the muscles of the loins and their tendinous attachments, it occurs chiefly in working men, comes on suddenly, and in very severe cases completely incapacitates the patient who may be unable to turn in bed or to rise from a sitting posture." This is a description of lumbago in one of our most popular textbooks on the practice of medicine; could we find a better description of an acute sacroiliac lesion? And yet for this condition we are advised acupunture. Muscular rheumatism, being another term similarly applied to lumbago, may be likewise disposed of.

The typhoid spine has been little understood from a pathological standpoint. At a recent meeting of the Association of American Physicians, Dr. Thomas McCrae reported a case with definite boney changes as demonstrated by the Röntgen ray. I have seen a number of cases where this diagnosis had been made, which cleared up so quickly, and where the symptoms were so similar to the condition of relaxation of the sacroiliac joint, and as many cases have been brought on by debilitating illnesses, I would suggest the possibility of some of these so called typhoid spines, indefinite in character, being a true relaxed sacroiliac joint.

Prognosis: The outlook for these cases when the conditon has been recognized, is an extremely bright one, especially in comparison with the continued suffering of the past. In the milder cases complete cessation of pain follows almost immediately upon institution of treatment. Others of a more severe character will be somewhat less readily controlled, but in every case I have seen, with a little patience on the part of both patient and physician, especially the latter, the symptoms may be completely relieved.

As to the ultimate success in relieving the relaxed condition of the ligaments, it is to be said that the general condition, etc., have great influence; however, most of the cases have been able to go about comfortably wthout support in from three to six months after the institution of treatment; while, on the other hand, some might require a support indefinitely.

Treatment will consist in a support which will properly hold the sacroiliac synchondrosis in place. Different methods are elaborately described in Dr. Goldthwait's paper.

In concluding I would refer especially to the history of trauma in each of these cases. In my series of twenty cases almost without exception, I have been able to obtain a history of trauma. The pathological conditions of the sacroiliac synchondrosis other than relaxation, are distinguished usually by definite symptoms in other parts of the body. As this condition seems to be so prevalent it is to be hoped that many more correct diagnoses will be made as so much relief can be given by proper treatment.

Case I.—A young unmarried woman; occupation, nurse. In November, 1904, she fell from a hammock, she says "she felt something crack, or give away at base of spine," and on attempting to rise found she could not straighten up for some minutes; following this she was obliged to stay in bed for three or four days. From that time she has always had stiffness in lumbar region on bending, and has to support her back on attempting to straighten up. A year later the pain became more persistent, increased by walking, and walking on pavements was almost impossible; the pain was often confined to one small spot over the right sacroiliac articulation, but at times over the whole lumbar region.

The diagnosis at this time was floating kidney, various belts and supports were tried without result. When she found she could not get relief she decided to "let Nature take its course," and worried along for some time in practically the same condition.

In April, 1905, after walking on tiles and stone floors for five months, she had an attack of "lumbago," which was followed by pain along the course of the

sciatic nerve, and slight cramps in the calf of her right leg when walking. She obtained no relief from sodium salicylate or potassium iodide with salicylates. The pain increased from slight discomfort to acute agony, the right leg, in walking, was held with knee bent and heel raised so as to relieve the limb as much as possible. Pain was usually greater on first lying down, gradually subsiding. During July she was treated for neuritis, by electricity and violet rays, but pain gradually increased; finally standing was almost impossible, and sitting extremely uncomfortable, due to pain in back of thigh and calf of leg, this pain was relieved only by lying down.

When seen by me the last day of July, the pain was especially referred to feet, calf of legs, and thighs. All spine motions were guarded; leg lifting very painful, especially the right; it was practically impossible to test for motion in the sacroiliac joint as standing was so difficult; the feet were greatly relaxed, the arches being completely obliterated when standing, accompanied by severe pain throughout feet, and extending up legs to knees. Support for feet was given; following this, there was slight improvement for two weeks, patient gradually walking about; at the end of that time she over exerted and had to go to bed, remaining there for a month. Back was strapped with adhesive plaster, but patient took it off during the first night; plaster jacket was applied without success; a corset belt was then tried and after she had worn it for some time, night and day, the pain began to disappear, and she was able to get about quite comfortably, but sitting was still painful. About the middle of September elastic trunks were applied, they seemed to hold much better, and improvement began very rapidly. By the end of November she was able to walk several miles a day, and had begun to gain in weight. By January 1, 1906, patient was doing private nursing, walking several miles daily, and had gained twenty pounds.

This case represents a complete relaxation of all the ligamentous tissue, especially demonstrable in the sacroiliac joints and the feet. The joint having been formerly injured by the fall.

Case II.—A maiden lady of middle age. Complaint: "Tired feeling below waist line in back, pain below left hip and down left thigh often extending to heel."

About twenty years ago, while sitting on a camp stool, the stool broke, and she struck the end of her spine on rung of stool; following this she suffered a great deal with sick headache. Twelve or fifteen years ago she had an attack of sciatica which, she says, was not very severe. About five years ago she had another fall which jarred her spine considerably, but she was not incapacitated to any great extent. For several years she has had "tired feelings" below the waist line, which came on after exertion, almost always following physical exertion, but at times after board meetings and social functions. For the past year her suffering has been such that she had to lie down most of the afternoon, resting better when lying on abdomen.

Her chief pain was referred to the tuberosity of the left ischium and down left thigh, often extending to the heel, with an uncomfortable feeling over the whole sacral region. On examination there was a moderate curvature of the spine with high left hip, patient was quite fleshy and the outlines of the sacrum were obliterated, motion at sacroiliac joint impossible to make out, all spinal motions were free, and, in fact, with the exception of a slight scoliosis, the examination was negative. The diagnosis of relaxation in this case was made from the history. A corset belt was applied, and when last heard from, she was perfectly comfortable with support, and taking more exercise than for years.

Case III.—An active man of seventy. Complaint: "Lumbago and sciatic pains." Three years ago he fell from a carriage on attempting to alight, and struck the base of spine again a projecting root; the injury was accompanied by very severe pain, but he was able with difficulty to get back into the carriage with the help of his daughter. He remained in bed five days, he could then get about on the same floor, with the assistance of two people; after two months he was able to walk with comparative comfort, but going up and down stairs was extremely painful. When lying still on right side he was quite comfortable, but any motion of lower part of back would cause pain; and should he move in his sleep so that he would lie on his left side, he would awaken immediateiy with sharp agonizing pain in back and left thigh; but for these sharp pains, and soreness in left thigh, he was comparatively comfortable. He remained in this condition for about five months. The following winter without definite cause the same trouble returned in slightly milder form, and lasted about three weeks. A year ago, two years following the accident, he had another attack lasting eight or nine days, and the present trouble had lasted about three weeks. He stated he had been treated for "rheumatic gout"; had been on a strict diet for two years or more; had taken salol internally, and had had hot soda baths, dry salt rubs, and heat applied to base of spine, in form of hot irons.

Examination: Lumbar curve of spine was obliterated almost completely giving a very flat appearance to buttocks; all motion of spine in lumbar region restricted; right lateral bending was especially limited (during examination he said that these motions were impossible during last attack); abdomen quite prominent; other parts of examination unimportant.

The patient was strapped, which gave immediate relief; on returning the next day he said that he had been more comfortable than at any time since accident. Three days later webbing belt was applied which gave him excellent support; he remained since without pain. All of the general treatment was discontinued, patient was told to take a full diet. After about four months the belt was left off with, so far, no return of symptoms.

Case IV.—Mr. B., age thirty-seven. Complaint: Intense pain in lower part of back. He had always been healthy and athletic. Twelve years ago he was injured in a railroad wreck; was struck across back of neck, small of back, and legs. The diagnosis of the railroad surgeon at the time was sciatica; he was in bed for over two months, the pain in leg continued for eight or ten months, when apparently there was complete recovery. About four years ago he began to have severe pain in back, which was thought to be kidney trouble, but he was not relieved by treatment, and urine showed no albumen.

Lately the pain has become so intense that he was almost incapacitated for work. He described the pain as feeling like muscular contraction in the lower part of the spine; this was more pronounced at night when lying flat on back, relief was obtained by putting support under small of back; most comfortable position in bed was lying on right side. When getting up or sitting down, he had "catch in back." He thought he felt the pain less when walking and when busy, which fact, he suggested, as perhaps due to having his mind occupied.

At present he becomes exhausted at end of day, and has to go to bed between seven and eight o'clock. Within the last year he has lost from twenty to thirty pounds.

At examination, there was a slight left dorsal, right lumbar curve; sacral region prominent; in spinal motions anterior bending was free, but recovery painful; lateral bending restricted on both sides, especially towards the right; hyperextension free; when prone, leg

lifting was restricted to small arc, due to pain in sacroiliac joints, this was especially so on the left side. Quite free motion was made out in both sacroiliac joints, being more marked in left.

This case represented a moderate relaxation of the left sacroiliac joint, the joint having been badly sprained at the time of the railway accident, and now in a state of chronic lack of tone, with more marked symptoms evidently due to a general run down condition with loss of weight.

The treatment in this case consisted of a webbing belt, for support, and general building up of the system.

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DISINFECTION OF PHYSICIAN'S HANDS.

By Paul Shekwana, M. D.,
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In these enlightened days it is a common saying, not only among doctors and scientific people, but also among the lay public, to say, disinfect and sterilize everything in order to get rid of bacteria and avoid infection. This saying is perfectly true and should be observed by everybody, because any person, whether a man or woman, young or old, physician or not, who is infected with a disease may become a source of infection to the community. The author, however, believes that this saying is much more applicable to practicing physicians than to the rest of the people. This announcement may sound very startling, but, nevertheless, it is perfectly true, and is founded on the author's personal observations and experiments; that is to say, he has found that the skin of the hands of a practitioner is always more dangerous than that of other people. We know that the skin of the hands of everybody is full of germs, but, fortunately, they are not disease germs. While in the case of a practicing physician who treats various infectious diseases, many of these germs are disease producing microorganisms, and he may thus, by contact or other means, infect other people.

How common it is for a physician to say to the members of his community: Do not go to such and such a house, because some one is suffering from typhoid fever, or diphtheria, or tuberculosis, or measles, etc. We believe that if a person goes to an infected house he is liable to catch the disease, carry it to his home, and become the source of infection to his family and others. Then, believing all this, which is quite correct, what have we to say about a practitioner? For example, a physician has, say, six patients afflicted with different kinds of disease. He starts on his visit and sees the first patient, from there he goes to see the second one, and so on. Is he not carrying the germs of the first patient to the second, and the germs of the second patient to the third, etc.? This transmission of germs is more possible with a physician than with an ordinary man, since a doctor has not only to see a patient, but also to handle and examine him, consequently a physician's hands ought to be always kept sterile. Should his hands be not sterile, is he not becoming a very dangerous source of infection to his own family as well as to the rest of his community? Is it not for this very reason that quarantine is established in a house where an infectious disease exists, and people are prevented from going to that house, because they might get infected and infect others? Would not this be true and even worse with a physician who goes to see the patient and touches him with his unsterile hands?

Therefore, the best and only remedy for this is, that every practitioner should have with him a small bottle containing some disinfectant. As soon as he starts on his visits he should disinfect his hands in order to make them sterile. After he examines his first patient and leaves the house, he should put some of this disinfectant on his hands again in order to kill the bacteria which might have fallen on his hands from the first patient, and in that way he will avoid infecting the second patient with the first patient's disease and so on. This system will make it very safe for the physician himself, his family, and for all those who come in contact with him. In all civilized countries and among enlightened people of the present days, this system of self-disinfection will make a physician much more prominent and trustworthy, because people will realize that they will not be infected with various diseases which the physician has been treating. (A physician should always disinfect his mouth thermometer as soon as he has finished a temperature examination.)

As to the disinfectant to be used, it is a matter of choice. The author, from personal experiments on his own hands as well as on other people, can recommend the following disinfectants:

A solution of bichloride of mercury, 1 in 1000, will sterilize the hands in from five to ten minutes.

A solution of from 4 to 5 per cent. carbolic acid will act in from ten to fifteen minutes in a similar manner.

A 2 per cent. solution of lysol will act in about ten minutes, and render the hands sterile. (It must be mentioned that in disinfecting hands unclean with pus, or disinfecting substances containing pus or albuminous matter, it is not advisable to use bichloride of mercury, but carbolic acid or lysol, as the former forms insoluable compounds with albuminous substances and loses its disinfecting properties.)

Of course there is a difference between different hands, the rougher the hands the longer it will take the disinfectant to act. None of these three mentioned solutions is injurious to the hands, and, for instance, if some people find that a 4 to 5 per cent. solution of carbolic acid is a little too strong, a little alcohol mixed with it will make it pleasant for application without impairing the disinfecting properties of the solution, or, better still, it may be mixed with a little glycerin.

If this self-disinfecting system were to be practised by every physician, a practitioner would himself be less liable to catch a disease or transfer it to others.

The Proportion of Mortality from Tuberculosis.—Robin demonstrated a law referring to the mortality from tuberculosis. He stated at a meeting of the Académie de médecine at Paris that the mortality from tuberculosis becomes less in proportion to the decreased density of population. He based his statements upon French statistics of 1903, which showed the following: The mortality in Paris was 45.2 in 10,000 inhabitants. In cities of 100,000 to 492,000 inhabitants it was 34.4; 30,000 to 100,000, 32.8; 20,000 to 30,000, 30.8; 10,000 to 20,000, 26.6; 5,000 to 10,000, 23.4; 1,000 to 5,000, 20.4. The total was, therefore, 24.4 in 10,000 inhabitants.

Our Readers' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LVI.—How do you treat sciatica? (Closed November 15, 1906.)

LVII.—How do you use mercury in syphilis? (Answers due not later than December 15, 1906.)

LVIII.—How do you treat acute synovitis? (Answers due not later than January 15, 1907.)

Whoever answers one of these questions in the manner most satisfactory to the editors and their advisors will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short; if practicable, no one answer to contain more than six hundred words.*

All persons will be entitled to compete under the regulations laid down by the postal authorities. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL.

The prize of $25 for the best essay submitted in answer to question LV has been awarded to Dr. Leigh F. Watson, of New York, whose article appeared on page 1038.

PRIZE QUESTION NO. LV.

THE TREATMENT OF ACUTE ARTICULAR RHEUMATISM.

(Concluded from page 1090.)

Dr. Egil T. Olsen, of the United States Public Health and Marine Hospital Service, observes:

The patient, if not in bed when first seen, should be ordered to bed at once, and should remain there constantly, lying between two blankets. The room should be well ventilated, but without draughts, and should be kept at a uniform temperature of about 70° F. A calomel purge should be given at once, followed about ten hours later by a saline (magnesium sulphate, 25 grammes), and the bowels be kept open thereafter by small daily doses of saline cathartics (Epson or Rochelle salts).

Treatment.—For the treatment of this disease I have found nothing better than the salicylates combined with an alkali, and I am in the habit of giving sodium salicylate and sodium bicarbonate, in solution, in doses of one gramme each. This is given at intervals of two hours until eight grammes of each have been given, by which time the patient is usually well under the influence of the drug. The interval is now increased to four hours, and unless its toxic effect is manifested, this dosage is maintained during the entire period of acute illness. Should the patient show signs of constitutional disturbance from the effects of the salicylate, as manifested by tinnitus, headache, gastric distress, etc., the interval is still further lengthened, or the drug is stopped entirely for twelve to twenty-four hours. Should the patient be unable to retain the medication when given by mouth, it is administered per rectum.

The affected joints are thickly wrapped with absorbent cotton, the dressing then saturated, and subsequently kept continuously wet with a saturated solution of sodium bicarbonate, and an outer casing of oiled muslin or silk applied. These joints are then placed and kept in a comfortable position, being moved only by the nurse from time to time as the patient may desire. This treatment usually causes the pain to subside sufficiently in a few hours to enable the patient to rest comfortably and go to sleep, although in severe cases morphine is frequently required initially for the relief of pain, and then 0.015 gramme (grain ¼) is given hypodermatically. Coal tar derivatives are not used at all on account of their depressing effect on the heart. The pain, local tenderness, and swelling usually subside entirely in a few days, the temperature declines gradually, and the patient is soon able to change his position and move about in bed with comfort.

High temperature is combated by means of external cold, sponge or tub baths being used according to the height of the temperature and the degree of their efficiency in each case.

Special symptoms are treated on general principles.

Diet.—During the acute stage this is limited to milk only, which is given hot or cold as the patient may desire. After the subsidence of the acute symptoms vegetable soups, farinaceous gruels, well cooked cereals, toast, and eggs are added gradually, but no meats are given until several days after all symptoms subside.

Convalescence.—This should be protracted and guarded. Early exposure and a possible relapse should be prevented by keeping the patient in bed for several days to a week after all symptoms disappear. The possibility and danger of subsequent attacks should be explained to the patient, and he should be warned as to the necessity for avoiding exposure to cold and wet, and advised as to the wearing of proper clothing during the seasons when changeable and inclement weather prevail.

Should endocarditis or pericarditis develop, an ice bag is applied to the præcordium, cardiac distress relieved by the use of morphine hypodermically, or Dover's powder, and if the pulse is full and bounding, tincture of aconite is given in doses of 0.06 c.c. (♏ 1). Convalescence from endocarditis should be especially protracted in order to permit of as perfect compensation as possible.

Dr. Isaac W. Brewer, of Fort Huachuca, Arizona, remarks:

In the treatment of acute articular rheumatism we should endeavor: First, to relieve the pain in the joint; second, to reduce the fever; third, to prevent the involvement of the heart, and to limit the disease as much as possible, should it become involved; fourth, to tone up the patient, and prevent the recurrence of the disease.

At the beginning of the treatment the bowels should be unloaded by a dose of calomel, and they should be kept open by the administration of cathartics when necessary. The patient must be put to bed in a room with its temperature about 70° F., and encouraged to drink freely of water. Carbonated waters are very useful at this time,

but any pure water will do. Frequent bathing either in a tub or by spongings is essential. During the first few days a strictly milk diet appears to be the best. Later as the condition of the stomach improves a more liberal diet may be taken, but it is well to avoid the starches because experience has shown that they apparently aggravate the disease.

The pain in the joint is often so exquisite that it is necessary to protect it from the bed clothes by a bed cradle. The limb must be kept quiet and often a splint is necessary. Lead and opium solution has been most efficacious in relieving the pain. Local applications of salicylic acid, ichthyol, or oil of gaultheriæ and olive oil will also relieve the pain. The tonsils should always be examined and all the follicles explored, and any retained secretions removed. Adenoids should be removed.

For the relief of the fever and the general symptoms our sheet anchor is salicylic acid or some of its compounds. The plain acid administered in capsules is probably the best. It should be given in doses of from 15 to 20 grains every hour until the temperature falls, or constitutional symptoms appear. The dose should then be reduced and the interval lengthened, but the patient must be kept under the influence of the drug for from ten days to two weeks. The irritation of the stomach which frequently follows the administration of the drug may be prevented by preceding it by a swallow of the emulsion of sweet almonds.

A favorite prescription and one which has rendered good service is:

℞ Wine of colchicum, ... ♏ x;
Potassium iodide, ... gr. xv.
S. Repeat three times a day.

As a rule the disease yields promptly to the salicylate, but occasionally there are cases that resist the drug. Many of such cases respond readily to antipyrine or phenacetin (acetphenetidine) in doses of five grains. Hyperpyrexia must be treated by cold baths or sponging with alcohol. The alkaline treatment has not been satisfactory, but where the kidneys are not acting well fifteen grains of potassium acetate in water repeated every three or four hours will aid elimination.

It should be a matter of routine to examine the heart at each visit. If the patient is seen early, while the heart's action is rapid, aconite in two minim doses repeated every half hour until the patient begins to perspire or until constitutional symptoms appear will relieve the condition. With the first sign of endocardial involvement cardiac sedatives are called for. One of the best of these is an ice bag applied to the præcordium. The patient in all cases must be kept in bed for at least ten days after the temperature becomes normal.

During the convalescence the patient should be in the fresh air as much as possible. Fowler's solution, iron, and strychnine and plenty of nourishing food are called for at this time. Persons subject to rheumatism should be warmly clad and avoid exposure to cold. The tonsils should be examined at frequent intervals, and any abnormal condition promptly treated.

Dr. Robert S. Macrum, of Sewickley, Pa., writes:

To properly treat acute articular rheumatism patient should be put to bed *at absolute rest* in a warm, well ventilated room, free from draughts, the temperature being maintained at 68° to 70°. Bed clothing should be light and night clothes of flannel, the latter being a precaution against sudden chilling of the body should the acid sweating become excessive and temperature of room be suddenly reduced. For diet I allow only milk, buttermilk, farinaceous articles, lemonade, and an abundance of pure water, as much as the patient can drink. This is continued as long as there is pain or fever, animal broths and semisolids being added later. When pain and fever have been absent for a week the ordinary diet is cautiously resumed.

The parts affected are wrapped snugly in flannel or cotton batting, and lightly bandaged. In severe cases I sometimes use padded splints on joints where they can be conveniently applied. Before covering the parts, however, I sponge them lightly with alcohol, to facilitate absorption, and when dry, apply methyl salicylate drop by drop or in ointment (gr. lxxv to lanolin ℥i), rubbing the latter in gently but thoroughly, in the entire circumference of joint. A layer of oiled silk or gutta percha tissue (or in their absence, oiled paper such as comes in cracker boxes) is interposed before cotton or flannel covering is applied. These applications are made twice a day. Sometimes I find it beneficial to heat the parts well by fomentations before using the methyl salicylate.

Salicylic acid internally is, of course, my standby. Salicin, aspirin (acetylsalicylate acid), sodium, and strontium salicylates have all been useful to me at times, and I have come to rely mostly on the last named drug. Preference is given to the strontium because it not only allays the pain and fever, but I have yet to see a patient's stomach upset by it, and there is little objection on his part to taking it. During the first twenty-four hours of the illness I usually prescribe gr. x every two hours, with half a glass of milk or water; after the first day every three hours. Alkaline treatment is now added, sodium bicarbonate or potassium acetate in 15 to 20 grain doses either with the salicylate or in the intervals. Sometimes it is necessary in extreme pain to use an occasional hypodermic injection of morphine, gr. ¼. This treatment is continued until the pain and fever have gone, when the local applications are also discontinued, still keeping parts enveloped in the cotton or flannel, however. For a week after the disappearance of the fever and pain, the patient is kept in bed. Internal medication is continued as stated, but at longer intervals, and I think it advisable to give both the salicylate and alkali in occasional small doses for several weeks after complete recovery from the attack.

I treat hyperpyrexia by sponging with cool water or alcohol whenever temperature exceeds 104.5°, and seldom resort to antipyretic drugs, although I see no objection to their moderate use in such conditions. Cardiac complications are met by proper tonics and stimulants should they

arise. Iron is sometimes necessary after convalescence.

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FORMALDEHYDE IN THE DISINFECTION OF ROOMS.

Passed Assistant Surgeon McClintic, of the Public Health and Marine Hospital Service, recently published an account of certain experiments of his relating to the value of formaldehyde in the disinfection of rooms and especially of railway sleeping cars, as we informed our readers in our issue for November 24th. It will perhaps be remembered that Dr. McClintic found that formaldehyde was a trustworthy disinfectant of smooth surfaces, but decidedly deficient in penetrating power, that its germicidal activity was much enhanced by a high temperature and especially by an atmospheric humidity of not less than sixty-five per cent., but that in air that was dry and cool it was almost worthless.

As concerned those of his conclusions that were unfavorable to formaldehyde as a disinfectant of rooms, Dr. McClintic was decidedly at variance with the Illinois State Board of Health, which, in a circular entitled *Practical Disinfection*, had strongly recommended formaldehyde (set free from its aqueous solution by contact with potassium permanganate) for the disinfection of rooms. The appearance of Dr. McClintic's pamphlet naturally led the Illinois board to repeat its own experiments. The board's new investigation has been conducted by gentlemen who were not engaged in the observations on which its original statements were founded, but it corroborates the board's early commendation of the gas, and the account prepared for the November-December number of its *Monthly Bulletin*, for advance sheets of which we are indebted to the public spirited and indefatigable secretary, Dr. James A. Egan, seems to account for Dr. McClintic's failure to observe the excellent results, practically independent of temperature and humidity, proclaimed by the board.

The Illinois board does not in the least recede from its original statements, and it certainly seems to have substantiated them by most convincing experiments. It finds that *Bacillus subtilis* is difficult to kill, but that all the other microorganisms upon which its observations were made, including *Bacillus pyocyaneus*, *Bacillus typhosus*, *Bacillus coli communis*, and *Bacillus dysenteriæ*, are readily rendered harmless by the gas. The report intimates that Dr. McClintic did not effectively seal the rooms in which his experiments were conducted, that he did not use sufficient amounts of the formaldehyde solution and potassium permanganate, and that he took no precautions to prevent loss of the heat generated by the reaction. The board very properly insists that its conclusions cannot be invalidated by procedures which violate the conditions that it had set down as necessary.

THE MODERN CÆSAREAN OPERATION.

There is hardly a more notable example of the immense progress of our art in recent years than is to be seen in the results of the Cæsarean operation as it is now performed. Physicians who are not yet old well remember that in their student days they were taught that to decide upon the performance of that operation was almost equivalent to signing the woman's death warrant. Now hundreds of women's and infants' lives are saved every year by a procedure essentially the same, though so wonderfully improved that it rarely fails of its purpose as regards either mother or child. We have not found these facts more forcibly set forth elsewhere than in a paper read before the Lisbon International Medical Congress, by Dr. James W. Markoe and Dr. Asa B. Davis, of the Lying-in Hospital of the City of New York, and recently published by the hospital.

In the original paper the authors reported forty-one cases, and in only six of them had the operation failed to be followed by the mother's recovery. Brief notes of nine additional cases, making fifty in all, are given in the hospital's publication. In all these nine new cases the mother recovered, and in all of them the particular method of operating recommended by the authors was followed. Concerning the six maternal deaths in the major series, it is mentioned that three of the women were in a septic condition

before the operation was begun, and that in the three other cases there were special features that sufficiently accounted for the fatal result. Four of the women who died had been operated upon "in ordinary tenement houses where the surroundings were of the most squalid character."

The notable points of the form of operation settled upon by Markoe and Davis are the following: The abdominal incision is short, usually not more than three inches long; it occupies the median line and lies wholly above the umbilicus; and the uterine incision, a little longer, is made through the fundus. The authors think that this mode of operating lessens the dangers of ventral hernia and embarrassing adhesions, for in any subsequent pregnancy less direct pressure is brought to bear upon the abdominal cicatrix, and the subsidence of the uterus upon the completion of the operation prevents such coincidence of the uterine and abdominal wounds as would favor adhesion of the organ to the parietes. If the placenta proves to be situated beneath the uterine incision, it is well, the authors think, to cut or tear directly through it, and then extract the child rapidly. We must say that the method commends itself to our judgment, though we may fancy that it might occasionally prove troublesome to hold the uterine fundus in its original high situation long enough for the sutures to be inserted through its wall.

THE ACCIDENTAL CONTAMINATION OF ANTITOXINES.

Few of our readers can have forgotten the disastrous consequences of the use of contaminated antitoxine a few years ago in St. Louis. In that instance it was the virus of tetanus that had been mingled with the therapeutic serum employed, and several deaths from that dreadful disease resulted. Now comes the news that in the Philippine Islands a number of prisoners have lost their lives in consequence of having been treated with serum contaminated with the germ of the plague. These sad occurrences are not unprecedented, except perhaps in the number of deaths they occasioned, but for several reasons they seem to call for particular comment. In the first place, they both took place within the dominions of the United States. This fact may be quite fortuitous, though we fear that in some quarters it may be taken to give color to a suspicion that we Americans are particularly prone to carelessness in the management of deadly agents. If we would stamp out such a suspicion, we must be superlatively careful in the future, and quite apart, of course, from the natural desire to amend our record, the horrible nature of the occurrences should make us bestir ourselves to establish a *tabula rasa*.

In the next place, both calamities took place as the result of the employment of agents produced by laboratories of municipal if not of national authorization. We have heard much of the alleged necessity of restricting the issue of organic therapeutical products to those turned out under governmental authority, or at least to those that had been subjected to governmental inspection. The cry never had any rational foundation, but it fell in with our democratic reverence for authority, and so it prevailed. Private producers, having every incentive to turn out none but irreproachable products, have in some instances been swamped by the insensate demand for authoritative articles.

But mistakes may occur in private laboratories as well as in those that are under governmental supervision. Is there, then, no remedy for errors that have resulted so disastrously? Danger may perhaps to a great extent be avoided by restricting the production of single laboratories to some one antitoxine. If, for example, the New York laboratory turns out a superior article of diphtheria antitoxine, let it supply that product to other cities and depend upon them for its supply of other antitoxic medicaments, drawing a single one from each of them.

IODOPHILIA.

The reaction of the leucocytes to iodine, originally observed by Ehrlich and known as iodophilia, consists in the coloration of certain constituents of the cells to a mahogany brown. The brownish color is found in the protoplasm; it is never seen in the nucleus. The reaction has been extensively studied by a number of observers. Recently Da Costa (*Proceedings of the Pathological Society of Philadelphia*, ix, 5) has contributed a paper treating of the results of the study of this reaction of the leucocytes in one hundred cases. He finds that iodophilia is uniformly absent from normal blood. In pathological blood it is present in a variety of conditions. When it occurs in typhoid fever, it is indicative of an intense infection or the existence of some complications, such as pneumonia, collections of pus, peritonitis, and possibly pronounced secondary anæmia. In thirty purulent and septic cases the reaction was positive in all. The intensity of the reaction depends probably upon the virulence of the infecting organism rather than upon the extent of the suppuration and the kind of the invading bacteria. In abscess the free permeability of the limiting

pyogenic membrane favors the occurrence of the reaction, while thorough walling off of the pus focus, as well as adequate drainage, is in favor of the absence of the reaction. In two cases of simple catarrhal inflammation of the vermiform appendix the reaction was present very conspicuously in one and was found unmistakably in the other. This fact shows that the test is not a criterion in the diagnosis between the catarrhal and the suppurative disease.

In seven cases of croupous pneumonia iodophilia was present in all. In no other disease was such a decided iodophilia developed. After the crisis the reaction rapidly disappears, and in uncomplicated cases it is completely gone within about forty-eight hours. Persistence of the reaction beyond this period may indicate delayed resolution, pulmonary abscess, empyema, or some other sequel of pneumococcus infection. In four cases of gonorrhœal arthritis iodophilia was present in a decided degree. In two cases of acute rheumatic fever, on the other hand, the reaction was absent. This fact is suggestive of a possible diagnostic use of the reaction, although the number of cases in which it has been tried is too small for the formation of a definite conclusion. A number of other inflammatory diseases gave the reaction, but it was not found in cases of endometritis, cholelithiasis, hepatic cirrhosis, malarial enlargement of the spleen, ovarian cyst, rhachitis, and acetanilide poisoning. As a rule the iodine reaction is seen in the cytoplasm of the polymorphonuclear neutrophile leucocytes. In some cases the lymphocytes show the reaction, and in other cases the neutrophile myelocytes show it. In two cases eosinophile cells showed the reaction. Frankly degenerated leucocytes, so long as they remain structurally intact, do not give the iodine reaction. One would suppose that the beginning of plasmolysis would be attended by the appearance of this reaction, but such is not the case. The degree of iodophilia appears to be determined by the intensity of the toxæmia and the inherent vulnerability of the cells. On the other hand, the reaction is not dependent on leucocytosis, on fever, or on anæmia.

From the point of view of the clinician, iodophilia is often a helpful sign, but is by no means pathognomonic of any one condition. In the distinction between various diseases by the use of this test one must be extremely cautious. So far, all that can be said is that the test furnishes corroborative evidence in distinguishing gonorrhœal arthritis and osteomyelitis from rheumatic fever, pure tuberculous disease from that affection with secondary pyogenic invasion, ovarian abscess from ovarian cyst, and amyloid liver from fatty and cirrhotic liver. In distinguishing purulent from nonpurulent lesions, it has to be remembered that the former give a positive reaction unless the abscess is so effectually walled off that the toxines cannot reach the circulation, and that the latter give a negative reaction unless there is in addition some source of toxæmia at work.

MEDICAL ERRORS IN WORKS OF FICTION.

The physician who is fond of turning occasionally from his serious professional literature to the relaxation afforded by good fiction will find in the novelist's treatment of medical subjects much to interest and divert him. Thus, Bocaccio, in the introduction to his *Decameron*, and also Manzoni, in *I Promessi sposi*, probably the greatest modern Italian novel, have given vivid descriptions of the Asiatic plague which are remarkable for their verisimilitude. George Eliot was another who was very successful in the delineation of medical themes. She has portrayed in a striking manner the symptoms of angina pectoris in one of her short stories, *The Lifted Veil*, and her study of the consumptive Jew, Ezra Mordecai Cohen, in *Daniel Deronda*, is a masterpiece which will always be regarded with admiration by the student of tuberculous disease. The neurologist and alienist will recognize the later stages of senile dementia in the pathetic scenes of the last days of Colonel Newcome, described with such painful fidelity by Thackeray.

Less careful writers have frequently stumbled. The medical mistakes of authors of fiction are usually either errors of fact or anachronisms. An illustration of the former is contained in Bret Harte's story of *The Man Whose Yoke Was Not Easy*, in which is described the sad case of an old soldier who was suffering from an aneurysm "caused by the buckle of his knapsack pressing upon the arch of the aorta." This is the more remarkable as the author in this instance had the assistance of a medical friend. The death of Krook from "spontaneous combustion," in *Bleak House*, Dickens has attempted to justify in his preface. Captain Marryatt has made use of a similar incident in *Peter Simple*. It is needless to say that no scientific man would admit the possibility of such an occurrence. Examples of anachronisms are numerous enough. Thus, Charles Reade, in *The Cloister and the Hearth*, the time of which is laid early in the fifteenth century, makes a melodramatic use of phosphorus, which was not discovered by the alchemist Brandt until two hundred years later, in 1669. Clarke Russell, also, in one of his clever sea tales, *Wrong Side Out*, which begins in 1860, describes the detection of

tubercle bacilli in the sputum of his consumptive hero, ignoring the fact that Koch's discovery was not made until some twenty years later, in 1882. Where there is so much to admire it will not be regarded as carping fault finding to direct attention to these occasional minor slips. It is only extraordinary that they are not more frequent among lay writers, who are now so fond of choosing medical subjects for romantic treatment.

THE SAN FRANCISCO RELIEF ADMINISTRATION.

In times of great national disaster in this country, such as the Charleston earthquake in 1886, the Johnstown flood in 1889, and the San Francisco earthquake in 1906, the administration of relief to the survivors ought to be in the hands of a properly organized and properly managed national body. The National Red Cross is the proper organization for the administration of relief on a scale demanded by the disasters above mentioned. When public charges of incompetence in management, not to say dishonesty, are made in the newspaper press of the country against such a body, the charitable person must necessarily hesitate when called upon to contribute from his substance to its treasury. The National Red Cross has been severely criticised for its management of relief in San Francisco. It was accordingly a wise policy for the directors of the American Academy of Political and Social Science to give Dr. Edward T. Devine, the chief field officer of the National Red Cross service in San Francisco, an opportunity to reply to his critics at a public meeting in Philadelphia on November 24th.

Dr. Devine said that the adverse criticisms which had appeared in personal letters and in the press were to have been expected. When they had related to isolated errors of judgment or individual cases of hardship they might have been justified. When, however, the criticisms passed to more general charges of "graft," incompetence, and neglect, they were false, and those who had borne false testimony on this subject in the newspapers and elsewhere were the ones who themselves had to answer for delays in the sending of funds and for uncertainties and unnecessary difficulties on the part of the San Francisco relief authorities as to the carrying out of their plans. Dr. Devine went on to say that, while the relief administration was not without flaws, while no one connected with it maintained that there was no hardship, or that there were perfect justice and equity in the distribution of relief, yet three things might justly be said: That no one had suffered from the lack of the necessities of life; that the funds entrusted to the relief authorities had not been wasted, stolen, or misappropriated; and that from beginning to end harmony of action had prevailed between the military government, the municipal government, the national and local Red Cross, the Finance Committee, the Relief Commission, and the Rehabilitation Committee.

Judge Advocate General George B. Davis, of the army, who was the chairman of the meeting, in his introductory remarks, substantiated the statements made by Dr. Devine and warmly praised his method of handling the situation. It is a matter for congratulation that the misstatements of the newspaper press have been thus publicly refuted; but it is a matter for regret that this same newspaper press is not more careful of its facts before it makes positive statements.

THE LATE DR. WILLIAM K. OTIS.

We have rarely seen in a medical journal anything more touching than an obituary notice of the late Dr. Otis which we find in the November number of the *Centralblatt für die Krankheiten der Harn- und Sexual-Organe*, signed "F. C. V.," and probably written by Dr. Ferdinand C. Valentine. It lovingly speaks of the deceased as "Billy," and by that endearing name he was indeed known among his intimates. The notice is concluded with this tribute: "Feinde hatte er nicht; seine Gegner waren auch unter seinen Freunden. In tiefer Trauer über seinen Tod sind alle vereinigt."

Obituary.

GLOVER C. ARNOLD, M. D.,

OF NEW YORK.

Though Dr. Arnold was by no means an old man, his health of late years had not been good, and the announcement of his death was not surprising to his friends. He was a general practitioner, but for a considerable period he paid particular attention to obstetrics. In that branch as well as in the general range of family practice his acumen and his fertility in resource made him notably successful, and his sympathetic nature endeared him to his patients. Dr. Arnold's activities were not wholly restricted to medicine. He was for many years a member of the vestry of the Church of the Transfiguration, and in that body the business training which he had received before taking up the study of medicine made his advice of conspicuous value. He was also much interested in Masonry, and at one time was master of Holland Lodge. He was a man of great geniality, though firm in the assertion of his opinions, and he was held dear by those few of his professional brethren who had the good fortune to come in intimate contact with him.

News Items.

NEW YORK CITY AND STATE.

Bequest to a Brooklyn Hospital.—By the will of Mrs. Caroline Goldbach, $3,800 is left to St. Catherine's Hospital.

The West Side Clinical Society of New York.—A meeting of this society will be held at the Hotel Marseilles, One Hundred and Third Street and Broadway, on Thursday, December 13th. Dr. F. E. Beal will read a paper on The Diagnosis and Treatment of Phthisis.

Bequest to the Nathan Littauer Hospital, of Gloversville, N. Y.—By the will of the late Randolph W. Day, a brother of Henry C. Day, one of the founders of the hospital, $1,000 is bequeathed to the institution. The gift will be added to what is known as the Day fund.

The Buffalo Academy of Medicine.—The programme for a meeting, to be held on Tuesday, December 18th, will be furnished by the *Section in Obstetrics and Gynæcology*, as follows: Fibroid Tumors, by Dr. Matthew D. Mann; Melæna Neonatorum, by Dr. William G. Taylor.

The Elmira Academy of Medicine.—The programme for a meeting, held on Wednesday evening, December 5th, included the following titles: Some Remarks on Cancer, by Dr. C. G. R. Jennings; Case Reported, A Sharp Thing, by Dr. T. A. Wales.

The Rochester Academy of Medicine.—The programme for a meeting of the *Section in Public Health, Hygiene, etc.*, held on Thursday, December 6th, included a paper on The Production and Handling of Milk by Old and New Methods and the Effect on Public Health (illustrated by lantern slides), by Dr. L. Emmett Holt, New York.

The Harvey Society Lectures.—The fifth lecture in the Harvey Society course will be delivered at the New York Academy of Medicine, on Saturday evening, December 15th, by Dr. Samuel J. Meltzer, of this city. Subject: Factors of Safety in Animal Structure and Animal Economy. These lectures are open to the public and all persons interested are invited to attend.

The Syracuse Academy of Medicine.—The following programme was presented at a meeting of this association, held on Tuesday, December 4th: Report of a Case of Resection of the Ulna, with presentation of the patient, Dr. E. S. Van Duyn; Nasal Diphtheria, Dr. I. H. Levy; Feigned Blindness, Dr. F. W. Marlow; Medicolegal Aspect of the Preceding Case, Dr. H. G. Locke.

The Glens Falls, N. Y., Medical and Surgical Society.—The annual meeting and banquet of the society were held at the Half Way House, Lake George road, on Thursday evening, December 6th. The paper of the evening was by Dr John M. Griffin, of Warrensburg, on Gallstones. Dr. J. Seward White, of South Glens Falls, and Dr. J. W. Hunt, of Glens Falls, led in the discussion of the paper.

The Saratoga Medical Society.—The programme for a meeting of this society, held on Friday evening, December 7th, consisted of a symposium on Arteriosclerosis, divided as follows: Ætiology and Pathology, Dr. M. J. Coruthwaite, Rock City Falls; Symptoms and Diagnosis, Dr. G. S. Towne; Complications and Treatment, Dr. E. A. Palmer; discussion by Dr. Loop, Dr. Sherman, and Dr. Resseguie; Report of a Case, Dr. J. F. Humphrey.

The Medical Association of Troy and Vicinity.—The following programme was arranged for a meeting of this association, held on Tuesday evening, December 4th: The Presentation of a Case for Diagnosis, by Dr. F. A. Hull; Report of a Case of Cornual Pregnancy in a Bicornual Uterus with Rupture, by Dr. G. L. Meredith; A Symposium on Gallstones, arranged as follows: Diagnosis and Medical Treatment, by Dr. M. Keenan; Ætiology and Pathology, by Dr. H. W. Casey; Surgical Treatment, by Dr. J. S. Harvie.

The Bereavement of Dr. William Warren Potter.—The following is from the *Buffalo Medical Journal* for December, 1906: "Emily Bostwick, wife of Dr. William Warren Potter, the editor of this *Journal*, died at the family home, 284 Franklin Street, Buffalo, Wednesday morning, November 28, 1906, in the sixty-eighth year of her age. While she had been in indifferent health for several months, the ending came somewhat suddenly, precipitated by cerebral apoplexy, with which she was seized about fifty hours before her death. The services of the Protestant Episcopal Church were observed at the house on Friday, November 30th at 3 o'clock, and the remains were incinerated at the Buffalo Crematory, the ashes being interred at Forest Lawn. The bearers were Dr. John O. Roe, of Rochester, and Drs. John Parmenter, Ernest Wende, H. E. Hayd, DeLancey Rochester, W. Scott Renner, William C. Krauss, and Lorenzo Burrows, of Buffalo."

A Prize Essay on the Ætiology of Epilepsy.—Dr. W. P. Spratling announces a prize of $500, offered by the *Association for the Study of Epilepsy*, for the best essay on the ætiology of that disease. The prize is given by persons interested, heart and soul, in the work of the association, and the conditions governing the award are as follows: All essays submitted must be in English, written in a clear, legible hand or on the typewriter, on one side of the paper only, and they must not contain more than 15,000 words. Essays must be in the possession of Dr. W. P. Spratling, at Sonyea, N. Y., not later than September 1, 1907. Each essay must be sent without signature, but must be plainly marked at the top of the first page with a motto and be accompanied by a sealed envelope having on its outside the motto on the paper and within the name and address of the author. All essays received will be placed in the hands of three physicians to determine their merit. Two of these physicians are members of this association, the third a member of the American Neurological Association. Announcement of the award will be made at the November, 1907, meeting of the association. The association will not feel bound to award the prize should no essay submitted be deemed of sufficient value to merit it. *Original research work into the ætiology of epilepsy will be a leading factor in fixing the award.*

The Late Dr. Emmet C. Dent.—At the annual meeting of the faculty of the New York School of Clinical Medicine and the trustees of the West Side German Dispensary, held on October 31, 1906, the following resolutions were adopted: *Whereas*, On January 12, 1906, through the sudden and untimely death of our beloved confrère, Emmet C. Dent, M. D., superintendent of the Manhattan State Hospital for the Insane; secretary and treasurer of the American Medicopsychological Association; member of the Medical Society of the County of New York, Medical Society of the State of New York, Physicians' Mutual Aid Association, New York Academy of Medicine and the Psychiatrical Society, we have sustained a grevious loss; and

Whereas, The profession has lost a representative of sterling worth; suffering humanity a skilful practitioner; his associates a most estimable colleague; and his intimates a loyal, open hearted, self forgetful friend; therefore, be it

Resolved, That we, deploring our loss, share with the bereaved family of Emmet C. Dent their sorrow and grief, and hereby tender our heartfelt sympathy; therefore, be it

Resolved, That copies of these resolutions be spread in full on the minutes, published in the medical journals, and a copy thereof sent to the afflicted family of the deceased.

Committee for the faculty and trustees: A. Ernest Gallant, M. D., John L. Adams, M. D.; William Friedman.

The New York Academy of Medicine.—The following programme was presented at a meeting, held on Thursday, December 6th: Election of Officers; Paper: Xanthin as a Cause of Fever and Its Neutralization by Antipyretics, by Dr. A. R. Mandel; discussion by Dr. Graham Lusk; Paper: The Effects of Water on Gastric Secretion as Shown in Dogs with Pawlow Fistula, by Dr. N. B. Foster; discussion by Dr. A. V. S. Lambert and Dr. A. N. Richards; Experimental and Practical Work on Rabies, by Dr. D. W. Poor; discussion by Dr. W. H. Park; Paper: Eosin Immunity in Tetanus, by Dr. S. Flexner (for Dr. Noguchi); discussion by Dr. F. C. Wood; Paper: An Experimental Study of the Sensation of Pain in the Abdominal Viscera, by Dr. S. J. Meltzer (with Dr. L. Kast); discussion by Dr. Joseph Collins, Dr. Joseph A. Blake, and Dr. Willy Meyer.

At a meeting of the *Section in Surgery*, held on Friday evening, December 7th, the following order was presented: Presentation of Patients; (a) Two Cured Cases of Trigeminal Neuralgia, by Dr. S. V. Moschcowitz; (b) A Case of Abscess of the Temperosphenoidal Lobe, by Dr. A. A. Berg; Papers: Schlosser's Treatment for Trigeminus Neuralgia, by Dr. Otto G. T. Kiliane; discussion opened by Dr. George W. Jacoby; (b) Operation *versus* X Ray in Sarcoma, by Dr. Aspinwall Judd; (c) The Choice of Procedure in Cases of Loose Kidney, by Dr. Robert T. Morris; Case Reports: A Case of Perforation of the Intestine by a Murphy Button, by Dr. Eugene H. Pool; Presentation of New Apparatus; Election of Officers for the ensuing year.

The *Section in Otology* will hold a meeting on Thursday evening, December 13th, with the following programme: Presentation of Cases; (a) Report of a Case of Mastoiditis Complicated with Thrombosis of the Cavernous of the Inferior Petrosal and of Both Lateral Sinuses, Cardiac Thrombosis, Leptomeningitis, etc., by Dr. R. Lewis, Jr.; (b) Reports of Four Cases of Mastoiditis in Diabetic Subjects, by Dr. J. D. Richards; Paper: Prognosis of Operative Procedures on the Mastoid Process in Diabetic Subjects, by Dr. E. G. Meierhof; Executive Session. Election of Officers for 1907.

The *Section in Pædiatrics* will hold a meeting on Thursday evening, December 13th, with the following order: Presentation of Cases; (a) Splenomegaly in a Child of Two Years (Twin), with Special Reference to Possible Ætiology, by Dr. Eli Long; (b) Congenital Heart in a Child of Thirteen with Good Compensation, by Dr. Malcom Goodridge; Paper: Pyelitis in Infancy with Remarks on the Urine, by Dr. Lewis Fischer; Election of Officers.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending December 1, 1906:

	December 1.		November 24.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	87	20	115	20
Smallpox	0	0	2	..
Varicella	74	0	79	..
Measles	152	7	112	5
Scarlet fever	136	8	119	7
Whooping cough	55	5	86	4
Diphtheria	291	32	298	43
Tuberculosis pulmonalis	319	162	307	158
Cerebrospinal meningitis	10	4	9	14
Totals	1,124	238	1,127	251

Society Meetings for the Coming Week:

MONDAY, *December 10th.*—Society of Medical Jurisprudence, New York; New York Medicohistorical Society (private); New York Ophthalmological Society (private); Corning, N. Y., Medical Association; Waterbury, Conn., Medical Association; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private).

TUESDAY, *December 11th.*—New York Medical Union (private); New York Obstetrical Society (private); Buffalo Academy of Medicine (Section in Medicine); Kings County, N. Y., Medical Association; Rome, N. Y., Medical Society; Medical Society of the County of Rensselaer, N. Y.; Newark, N. J., Medical Association (private); Trenton, N. J., Medical Association; Medical Society of the County of Schenectady, N. Y.; Practitioners' Club of Jersey City, N. J.; Northwestern Medical Society of Philadelphia; Practitioners' Club, Richmond, Ky.; Richmond, Va., Academy of Medicine and Surgery.

WEDNESDAY, *December 12th.*—Medical Society of the Borough of the Bronx, New York; New York Pathological Society; New York Surgical Society; Lenox Medical and Surgical Society (private); American Microscopical Society of the City of New York; Alumni of the City Hospital, New York; Brooklyn Medical and Pharmaceutical Association; Richmond, N. Y., County Medical Society; Medical Society of the County of Allegheny, N. Y.; Society for Medical Progress, New York; Pittsfield, Mass., Medical Association (private); Philadelhpia County Medical Society.

THURSDAY, *December 13th.*—New York Academy of Medicine (Sections in Pædiatrics and Otology); Society of Medical Jurisprudence and State Medicine, New York; Brooklyn Pathological Society; Medical Society of the County of Cayuga, N. Y.; South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia; Church Hill Medical Society of Richmond, Va.; Blackwell Medical Society of Rochester, N. Y.; Jenkins Medical Association, Yonkers, N. Y.; Practitioners' Society of Eastern Monmouth, Camden, N. J.; Society of Physicians of the Village of Canandaigua, N. Y.

FRIDAY, *December 14th.*—New York Society of Dermatology and Genitourinary Surgery; Yorkville Medical Association, New York (private); Dermatological and Genitourinary Society (private), Brooklyn; German Medical Society of Brooklyn; Society of Alumni of St. Luke's Hospital, New York; Eastern Medical Society of the City of New York; Saratoga Springs, N. Y., Medical Society; Medical Society of the Town of Saugerties, N. Y.

PHILADELPHIA AND THE MIDDLE STATES.

Charitable Bequests.—By the will of Anne Baze, St. Vincent's Orphan Asylum receives $50.

McKee's Rocks (Pa.) Hospital.—Application has been made for a charter for the Ohio Valley General Hospital, to be situated at McKee's Rocks.

The South Side Hospital of Pittsburgh, Pa., held donation day on November 20th. The Ladies' Aid Society served tea.

The Pennsylvania Orthopædic Institute and School of Mechanotherapy has awarded diplomas to fifteen young women, as a result of the work done in the midyear term in massage, gymnastics, electrotherapeutics and hydrotherapy.

Philadelphia Personals.—At a recent examination, held by the Civil Service Commission, Dr. Henry Sykes received an average of 78.54 per cent., and was consequently appointed chief resident physician of the Philadelphia General Hospital.

The Society of Normal and Pathological Physiology of the University of Pennsylvania.—At the regular monthly meeting of this society, held on Monday, November 26th, Dr. Leo Loeb read a paper on the Effect of Light on the Staining of Cells. Dr. D. H. Bergey read a paper on the Bacterial and Cellular Content of Cow's Milk, and Dr. H. C. Wood, Jr., read a review.

Smallpox in Pennsylvania.—Under the date of November 21, 1906, it was reported that smallpox had been discovered in Rossiter, a mining town about four miles south of Punxsutawny, Pa. A child died in the family of one of the foreign miners. In establishing the quarantine over the house there was some disturbance, which required the intervention of the State police. Seven families were quarantined by the State Board of Health.

Scientific Society Meetings in Philadelphia for the Week Ending December 15, 1906.—*Monday, December 10th,* Section on General Medicine, College of Physicians; Wills Hospital Ophthalmic Society. *Tuesday, December 11th,* Kensington Branch, Philadelphia County Medical Society; Philadelphia Pediatric Society; Botanical Section, Academy of Natural Sciences. *Wednesday, December 12th,* Philadelphia County Medical Society. *Thursday, December 13th,* Pathological Society; Section Meeting, Franklin Institute. *Friday, December 14th,* Northern Medical Association.

The Medical Council of the State of Pennsylvania held a meeting at Harrisburg, on November 23rd. Arrangements were made for holding the State board examinations in Pittsburgh, Philadelphia, and Harrisburg, on December 4th, and the following days. It was decided by the council that beginning June, 1907, and therafter, every candidate for examination must furnish a photograph of himself, certified by the dean of the college from which he was graduated. This rule is for the purpose of preventing impersonations. An informal discussion was held upon a proposition for reciprocity with the examining boards of other States.

The Nurses' Training School of the Philadelphia Polyclinic Hospital.—The class of 1906 of the Training School of the Polyclinic Hospital, Philadelphia, held its commencement exercises on the evening of December 5th. Miss Mary Richmond, secretary of the Philadelphia Society for Organizing Charity, made an address on The Avocation of a Nurse. Demonstrations were given by pupils of the three classes. Miss Sadie E. Zimmerman received a gold medal for proficiency in her examinations. Miss Kathryn M. Wood, Miss Zimmerman, and Miss J. Hume received scholarships. Miss M. McMulkin received a prize presented by the superintendent of the hospital for proficiency. Ten young women received their diplomas.

The Annual Report of the Philadelphia Society for Organizing Charity was read at the annual meeting, held on Tuesday, November 27th. During the year, which ended September 1st, the society's services were required in 4,712 families and in the cases of 1,025 nonresidents. Legal, medical, and other professional service was secured for 720 families, and other forms of friendly service for 1,243

families; 30,859 visits were paid; $18,747.59 was expended for material relief of families in distress. The society needs an increase of friendly visitors. The following were elected directors for three years: Mr. Henry B. Bonnell, Mr. Joseph P. Mumford, Mr. John S. Newbold, Mr. C. C. Binney, Mr. C. Bradford Fraley, Mr. Charles E. Pancoast, Mr. Henry C. Goodrich, Mrs. George Bacon Wood, and Mr. Horace Churchman. Mr. John S. Newbold was chosen president of the board.

Filtered Water for West Philadelphia.—That portion of Philadelphia lying between the Schuylkill River and the county line was supplied with filtered water on Sunday, November 4th. For the past year filtered water has been supplied to that portion of this district east of Thirty-eighth street. The completion of the filter beds at the Belmont filter plant has permitted the turning of filtered water into all the water mains in West Philadelphia. The filter plant at Belmont has a capacity of about 31,000,000 gallons a day, while the average daily consumption is 26,000,000 gallons; so that if the people in this part of the city are economical they will have a sufficient supply of filtered water. We shall watch with interest the typhoid statistics for this district.

The Budget of the Philadelphia Bureau of Health for 1907.—Director William M. L. Coplin has submitted the budget of the department of health and charities for 1907 to the committee on health and charities of the Philadelphia Common Council. The amount requested is $956,722, which is about $100,000 in excess of the budget of 1906. This budget provides for the erection of a municipal ice plant, at a cost of $45,000; for the enlargement and improvement of the nurses' home; and for alterations and refurnishing, for the use of the department of tuberculosis, of the wards formerly used by the department of neurology of the Philadelphia General Hospital. Director Coplin recommends that the force of cattle and meat inspectors be increased from six to twenty-five. An Assistant chemist is also recommended for the bureau of health.

Is the River Pollution Act of Pennsylvania Valid?—Edward Emmers, a hosiery manufacturer, of Royersford, Pa., who was recently convicted in the Montgomery County courts of polluting the Schuylkill River with drainage from his mill, has entered suit in the Superior Court of Pennsylvania to test the constitutionality of the act to prevent the use of streams for drainage purposes. The argument against the constitutionality of the act is based on the allegation that the instrument violates the national constitution, as it contains a provision exempting tanners and coal miners from its operation. The act also exempts individuals, private corporations, and companies, which at its passage were discharging sewage into the streams, unless in the opinion of the Commissioner of Health the sewage may become injurious to the public health.

The Prosecution of Illegal Practitioners of Medicine.—It has been suggested by prominent physicians in Philadelphia that the city, through its department of public health, in cooperation with the Philadelphia County Medical Society, might, with considerable chance of success, undertake a campaign against illegal practitioners of medicine and pharmacy. Dr. William M. L. Coplin, director of the department of public health, is said to have expressed the opinion that the Philadelphia County Medical Society ought to take up the subject on lines similar to those employed by the Medical Society of the County of New York. This includes the employment of counsel and the active prosecution of all quacks. It is understood that the common council of Philadelphia will be asked to appropriate $3,000 in 1907, for the purpose of prosecuting illegal practitioners, and the Philadelphia County Medical Society is to be asked to appoint a committee which shall work in harmony with the officials of the department of public health.

Bureau of Health Statistics.—During October, 1906, in the division of medical inspection, 4,100 inspections were made, exclusive of schools; 650 fumingations were ordered; 40 cases were referred for special diagnosis; 7,250 visits were made to schools and 1,305 children were excluded from school; 550 cultures were taken; 145 injections of antitoxine given; and 1,207 persons vaccinated. In the division of vital statistics, 1,848 deaths were reported, 2,848 births were reported, and 1,560 marriages were reported. In the division of milk inspection, 8,117 inspections were made of 163,022 quarts, of which 7,856 quarts were condemned. Microscopic examinations were made of 913 samples. In the division of meat and cattle inspection, 4,747 inspections of dressed meats were made, with 687 condemnations. Postmortem examinations were made of 1,970 carcasses, of which 192 were condemned. In the division of disinfection, 105 fumigations were made for scarlet fever, 312 for diphtheria, 130 for typhoid fever, 192 for tuberculosis, and 116 for miscellaneous diseases. Twenty-five schools were fumigated. In the bacteriological laboratory, 1,277 cultures were examined for the presence of the bacillus diphtheriæ, 440 specimens of blood were examined for the Widal reaction, 913 specimens of milk were examined, 108 specimens of sputum were examined, 3,859,000 units of antitoxine were supplied, and 8 disinfection tests were made. In the chemical laboratory, 113 analyses were made.

The Federal Pure Food and Drug Law.—The Food and Drugs Act, June 30, 1906, as the Federal pure food and drug law is now officially designated, marks the beginning of a new epoch in the progress of pharmacy in this country. The rules and regulations that have recently been issued, over the signatures of the secretary of the treasury, the secretary of agriculture, and the secretary of commerce and labor, are scarcely less interesting and important than is the law itself. To help pharmacists, and physicians who may be interested, to become more thoroughly familiar with the various provisions of the food and drugs act, and to acquaint themselves with the several innovations that will be brought about by the enforcement of this law, it is purposed to devote the next meeting of the *Philadelphia Branch of the American Pharmaceutical Association* to the discussion of The Federal Pure Food and Drug Law. The meeting will be held on the evening of Wednesday, December 12, 1906, in the lower hall of the College of Physicians, northeast corner of Thirteenth and Locust streets. The discussion will be opened by Dr. Harvey W. Wiley, Washington, D. C., on The Food and Drugs Act, June 30, 1906. Its Effect on the Composition of Medicines and on the Practice of Medicine; and Mr. Mahlon N. Kline, Philadelphia, Pa., on Practical Experiences with the Federal Pure Food and Drug Law. The subject will be further discussed, both from a medical as well as from a pharmaceutical point of view. All who are in any way interested in the enforcement of this law should avail themselves of this opportunity for securing information regarding the drug sections of this act.

Pennsylvania State Board of Health Establishes a Laboratory of Clinical Pathology.—Dr. Samuel G. Dixon, Commissioner of Health of the State of Pennsylvania, has recently sent circular letters to all the physicians in the State of Pennsylvania, informing them of the establishment of a laboratory of clinical pathology for their free use. Those physicians who already have access to a clinical laboratory in the larger cities are expected not to avail themselves of the assistance of the State laboratory. The University of Pennsylvania placed at the immediate disposal of the Department of Health of the State of Pennsylvania a suite of rooms well adapted to the needs of the laboratory. Dr. Allen J. Smith has been appointed director of pathology and Dr. Herbert Fox has been appointed chief of the laboratories. A pamphlet accompanying the circular letter indicates that examinations will be made of sputum, pus, exudates, fæces, and urine, for the presence of tubercle bacilli. Blood will be examined for the Widal reaction, and urine will be examined for the Diazo reaction, as aids to the diagnosis of typhoid fever. Blood will be examined for the presence of hæmamœba malariæ. Fæces will be examined for the presence of bacillus dysenteriæ, amœba dysenteriæ, and metazoan parasites and their ova. Sections of tumors will be examined by the methods of pathological histology, and bacteriological examinations will be made of pathological fluids to determine the presence of specific organisms. The laboratory does not undertake to make examinations of cultures for the presence of the bacillus diphtheriæ. Outfits will be supplied for taking specimens of blood for malarial examinations, for taking specimens of blood for Widal examinations, and for sending specimens of urine and other liquid or semisolid materials. If the physicians of the State of Pennsylvania take advantage of the aids offered by the Commissioner of Health, they ought to find the laboratory of great assistance to them in making proper diagnosis of their cases.

The Health of Philadelphia.—During the week ending November 24, 1906.—The following cases of transmissible diseases were reported to the Bureau of Health:

	Cases.	Deaths.
Typhoid fever	210	21
Scarlet fever	32	4
Chickenpox	59	0
Diphtheria	81	12
Cerebrospinal meningitis	1	0
Whooping cough	9	1
Measles	39	6
Tuberculosis of the lungs	68	47
Pneumonia	67	62
Erysipelas	6	1
German measles	3	0
Septicæmia	3	0
Mumps	4	0
Cancer	18	22

The following deaths were reported from other transmissible diseases: Malarial fever, 1; tuberculosis, other than tuberculosis of the lungs, 3; diarrhœa and enteritis, under two years of age, 16. The total mortality was 522, in an estimated population of 1,469,126, corresponding to an annual death rate of 18.48 in a thousand population. The total infant mortality was 95; under one year of age, 72; between one and two years of age, 23. There were 34 still births, 23 males and 11 females. The temperatures were high, and for four days a dense fog seriously interfered with transportation in the harbor. The total precipitation was .73 inch. The report of transmissible diseases shows quite an increase in the number of cases of typhoid fever. Fifteen cases of typhoid fever were reported from West Philadelphia, which is now being supplied with filtered water from the Belmont filter plant.

BOSTON AND NEW ENGLAND.

Another Vermont State Tuberculosis Commission.—By a decision of the State Legislature there is to be a second tuberculosis commission. In accordance with this, Governor Proctor has appointed the following as members of the commission: Dr. W. N. Bryant, of Ludlow; Dr. H. H. Lee, of Wells River; and Dr. D. C. Hawley, of Burlington. Their duties will be to inform the people of the State regarding the best method of preventing and curing consumption

The Mortality of Boston.—The number of deaths reported to the board of health for the week ending December 1st, was 167, as against 181 the corresponding week last year, showing a decrease of 14 deaths, and making the death rate for the week 14.46. The number of cases and deaths from infectious diseases were as follows: Diphtheria, 64 cases, 3 deaths; scarlatina, 29 cases, no deaths; typhoid fever, 12 cases, 2 deaths; measles, 12 cases, no deaths; tuberculosis, 32 cases, 14 deaths; smallpox, no cases, no deaths. The deaths from pneumonia were 24, whooping cough 1, heart disease 19, bronchitis 5, marasmus 3. There were 12 deaths from violent causes. The number of children who died under one year of age was 27, under five years of age 39, persons over sixty years of age 37, deaths in public institutions 57.

Requirements for Admission to Yale University Medical Department.—The Corporation of Yale University has announced the requirements for admission to the Yale Medical School, as applying to the ninety-seventh annual session, beginning in September, 1909. The requirements as they will apply to college graduates and to nongraduates are as follows:

I. Candidates who have received degrees in Arts or Science from approved universities or colleges will be admitted on presenting their diplomas or other satisfactory testimonials.

II. Other candidates must present evidence that they have complied with the entrance requirements of some collegiate institution of good standing or have passed equivalent examinations before some recognized examination board, such as the College Entrance Examination Board. They must also present evidence that they have performed with credit the equivalent of at least two full years of work of collegiate grade of fifteen hours a week. Such evidence may be furnished by certificate from an institution of good standing. Candidates who have not attended institutions able to give this certificate but who have otherwise fitted themselves for the study of medicine by work of corresponding grade may qualify by examination in this university on payment of a fee of $10.

All candidates for admission must furnish evidence that they have a satisfactory preparation in physics, general inorganic chemistry, and general biology.

BALTIMORE AND THE SOUTH.

The Tri State Medical Society, of Mississippi, Arkansas, and Tennessee.—At the annual meeting of this society, held at Memphis, on November 20th-22nd, the election of officers resulted as follows: President, Dr. F. J. Runyon, of Clarksville, Tenn.; vice-presidents, Dr. John Barksdale, of Vaiden, Miss., Dr. L. F. Heinz, of Marion, Ark., and Dr. J. B. Wetherington, of Munford, Tenn.; secretary, Dr. Richmond McKinney, of Memphis; treasurer, Dr. Marcus Haase, of Memphis.

CHICAGO AND THE WEST.

The Chicago Neurological Society.—The following programme was arranged for a meeting of this society, held on Thursday evening, December 6th: Presentation of cases, by Dr. D'Orsay Hecht; A Case of Syringomyelia, presented by Dr. L. Harrison Mettler, who discussed the Pathophysiology of Sensory Dissociations; Cases presented by Dr. J. Grinker.

Statement of Mortality of Chicago for the Week Ending November 24, 1906, compared with the preceding week, and with the corresponding week of 1905. Death rates computed on United States Census Bureau's figures of midyear population—2,049,185 for 1906, 1,990,750 for 1905:

	Nov. 24, 1906.	Nov. 17, 1906.	Nov. 25, 1905.
Total deaths, all causes	577	584	471
Annual death rate in 1,000	14.68	14.86	12.34
Sexes—			
Males	344	330	274
Females	233	254	197
Ages—			
Under 1 year of age	114	89	68
Between 1 and 5 years of age	40	46	32
Between 5 and 20 years of age	39	48	33
Between 20 and 60 years of age	259	272	226
Over 60 years of age	125	129	112
Important causes of death—			
Apoplexy	10	15	8
Bright's disease	45	45	49
Bronchitis	20	18	16
Consumption	53	60	60
Cancer	28	30	20
Convulsions	14	8	8
Diphtheria	13	19	8
Heart diseases	51	58	42
Influenza	1	3	0
Intestinal diseases, acute	31	30	25
Measles	3	1	0
Nervous diseases	19	14	16
Pneumonia	90	84	73
Scarlet fever	13	16	1
Suicide	5	9	7
Typhoid fever	8	12	4
Violence (other than suicide)	35	30	32
Whooping cough	3	9	1
All other causes	135	123	101

GENERAL.

The Sea Nurse.—A sea career is opening for several hundreds of nurses. Two graduate nurses from a New York hospital have been placed on passenger steamships of the Hamburg-American line, says the *New Orleans Medical and Surgical Journal,* for December, 1906, and more will be needed. Other first class steamboat lines will, no doubt, follow this example, and the trained nurse will become a recognized necessity of the first class steamship, as the physician has. The opportunities of the trained nurse are increasing very rapidly.

Trained Women Nurses for the Navy.—According to the *Army and Navy Journal,* for December 1st, Surgeon General Presley M. Rixey, U. S. N., strongly renews his recommendation of last year that congress be requested to enact a law authorizing the employment of trained women nurses for the navy. The services of women nurses in the army have proved highly satisfactory. Surgeon General Rixey points out that in all modern wars the services of women nurses have proved invaluable for the care of the sick and wounded. In time of peace such nurses would secure for the sick at naval hospitals a better medical and surgical nursing service than is now obtained and be of great use in teaching and training the men of the hospital corps. In time of war they would be needed, in addition, for hospital ships and their presence in hospitals would release a large number of hospital corps men for duty on men of war. The recommendations of the surgeon general for the establishment of a corps of trained nurses in the navy has met with the approval of the navy department. Senate Bill No. 2207, of the fifty-ninth congress, first session, provided for the organization of such a corps, which could be readily expanded to meet extraordinary needs, but this bill unfortunately failed to receive the necessary legislation.

Pith of Current Literature.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

December 1, 1906.

1. Uterine Myomata Complicating Pregnancy, By E. E. MONTGOMERY.
2. Excision of Cancer of the Head and Neck. With Special Reference to the Plan of Dissection Based on One Hundred and Thirty-two Operations, By GEORGE CRILE.
3. Dispensing Versus Prescribing, By M. H. FUSSELL.
4. A Method of Recording Changes in Body Weight Which Occur Within Short Intervals of Time, By WARREN P. LOMBARD.
5. The Opsonic Index in Medicine (*Concluded*), By NATHANIEL BOWDITCH POTTER, NORMAN E. DITMAN, and ERNEST E. BRADLEY.
6. The Rôle of Nuclein in the Animal Economy. With a Study of Uric and Phosphoric Acid Excretion in One Hundred and Twenty-nine Cases, By G. W. MCCASKEY.
7. Lactic Acid in Metabolism, By ARTHUR R. MANDEL and GRAHAM LUSK.
8. Chronic Catarrhal Deafness. Notes on Some Very Simple Experiments as to the Influence of Sound Waves on Ossicular Rigidity, By PHILIP D. KERRISON.
9. Otology in Its Relation to Rhinology and Laryngology, By CLARENCE JOHN BLAKE.
10. Multiple Neuromata of the Skin, By WILLIAM EDGAR DARNALL.
11. Types of Congenital Symbol Amblyopia, By J. HERBERT CLAIRBORNE.
12. Neurasthenia as Modified by Modern Conditions, and Their Prevention, By THOMAS C. ELY.
13. Effects of Aperients on the Peristalsis of the Stomach and Intestines, By E. PFAFF and E. NELSON.
14. Bromism. With a Report of Cases, By A. L. SKOOG.
15. Types of Insomnia and Treatment Without Drugs, By JAMES T. FISHER.
16. The National Formulary. Its Attitude to Pharmaceutical Proprietaries, By C. LEWIS DIEHL.

1. Uterine Myomata Complicating Pregnancy.—Montgomery observes that the conditions which would seem to justify interference during gestation are: (1) Persistent and more or less continuous pain over the abdomen; (2) such rapid growth of the combined tumors and uterus that life is in danger from pressure on vital organs; (3) such a situation of the growth as will make it a positive obstruction on the completion of pregnancy; (4) indications, hæmorrhagic and otherwise, that abortion or premature labor is impending. The interference would be an operative procedure. But experience has taught that artificial production of abortion or preamture labor is more grave than the continuance of the pregnancy. Hysterectomy, either complete or partial, without doubt, affords the procedure attended with the least mortality for the mother, but it absoluely dooms the other life and precludes all hope for offsprings and, consequently, should be accepted only where there is no hope for the continuance of the pregnancy or when alternative measures are absolutely contraindicated. Prior to the fifth month the existence of pregnancy does not form a bar to the enucleation of growths; on the contrary, the distention of the pregnant uterus renders the demarcation of the growth more distinct and its enucleation more readily accomplished. The manipulation of the uterus required for the removal of the growth and repair of the wound does not seem to increase the tendency to expulsion of the uterine contents. Indeed, the improved nutrition of the uterus seems to favor more rapid repair of the injury.

2. Excision of Cancer of the Head and Neck.—Crile remarks that as cancer is primarily a local disease each case at some period, is curable by complete excision. But the operation should be a thorough one, enlarged lymphatics of the diseased region should be excised. The immediate dangers attending such operations in the neck are local and bronchopulmonary infection, hæmorrhage, shock, and exhaustion. He concludes in saying that since the head and neck present an exposed field, cancer here, unlike that of the stomach, the intestines, or even the breast, may be recognized at its very beginning; that every case is at some time curable by complete excision; that the field of regional metastases is exceptionally accessible; that cancer rarely penetrates the extraordinary lymphatic collar of the neck; that the growth tends to remain here localized; that by applying the same comprehensive block dissection as in the radical cure of breast cancer, and by freely utilizing the modern researches of surgery the final outcome in cases of cancer of the neck and head should yield better results than that of almost any other portion of the body.

3. Dispensing Versus Prescribing.—Fussell places four questions before us: 1. Is dispensing for the advantage of the patient? 2. Is dispensing to the pecuniary advantage of the physician who dispenses? 3. What effect does dispensing have on the manner in which the physician conducts his cases? 4. What effect has dispensing on legitimate pharmacy? And answers them in saying that dispensing often gives to the patient drugs unfitted for his case, at greater cost to himself than if he obtained them on prescription. It helps to make it easy for the doctor to become routine and to neglect the proper study of his cases. It ruins the druggists in the neighborhood and leads them to become nostrum venders.

5. The Opsonic Index in Medicine.—Potter, Ditman, and Bradley, in reviewing the work which has already been accomplished on opsonins, say that the question of what practical use they may have is one of greatest interest. The great difficulty will arise from the fact, probably, that changes more or less profound are indicated at times by only slight variations of the indices, and that the variation is frequently not far beyond the limits of error in a method where opportunities for small errors in technics are numerous. Some aid in diagnosis may be had by determination of single indices; but before this can be considered a reliable method considerable work must be done to determine the degree of specificity of opsonins. Wright and Reid's work indicates that some diagnostic aid may be obtained by comparison of serum and exudates, and by the methods of heated and unheated serum. A wider field of application will probably be in the control of inoculation of vaccines to determine the optimum dosage and regulation of frequency of the same, but this will be somewhat limited by the clinical difficulties of the method. A field as yet but little explored, in which it may prove of great use, is in the determination of susceptibility to infection, especially in the inherited susceptibility to tuberculosis. Perhaps its greatest usefulness will be found in the laboratory, where it may prove to be a convenient and rapid method of testing the virulence of organisms and the strength of sera which are dependent on opsonins for their beneficial effects.

6. The Role of Nuclein in the Animal Economy.—McCaskey writes that in the nucleins the probable antecedents of all the purin bodies, including uric acid, and very rich in phosphorus, are widely distributed, but are especially prevalent in the nuclei of cells; hence glandular organs, such as the pancreas and the liver, made up, for the most part, of masses of cells, contain relatively large amounts. But the fluid constituents of the body also contain them in variable quantities. They are acids, have most remarkable physical and chemical properties, and stand in a class by themselves. One of their most striking characteristics is their invulnerability to the action of gastric juice; about the action of intestinal digestive fluid upon them is a conflict of opinion, but the latest researches indicate that the nucleinic

acids are somewhat changed by trypsin. It is an entirely unsettled question as to whether the nucleins are absolutely indigestible or not. If they are indigestible they are certainly unabsorbable, and our present conception of their rôle in dietetics would be entirely wrong. If the nucleins of food are finally proved to be indigestible, the only possible source of the nucleoproteids would be a synthesis from other proteids. The possibility of the synthesis of nucleins must be admitted on the basis of certain observations on the lower animals. They are also decomposed to a certain extent by boiling with water, and that the ordinary culinary processes may liberate varying quantities of purin bodies, which are, of course, readily soluble and absorbable. In the presence of an acid, the cleavage is more rapid and complete. If the uncooked nucleins are entirely indigestible, then raw meat, if parasitic ova could be excluded, would furnish for the body a purin free proteid food. On the other hand, the purin bodies can be very largely removed from finely comminuted cooked meat by repeated washings. Finally they appear to be both germicidal and in some of their cleavage products toxic in character.

9. **Otology in Its Relation to Rhinology and Laryngology.**—Blake says that the relationship between otology and laryngology has no physiological foundation, but between otology and rhinology there is both a physiological and a practical basis for collaboration, which is, however, especially concerned with that portion of the organ of hearing devoted to sound transmission and finds its own limitation of relationship in this respect. To attain the best results it is important that the two should not be too much merged, since each offers a broad field for study, in its particular region, which it is advisable to conserve, and each has individual points of departure along lines of its own association. To study rhinology from the otological standpoint alone is greatly to circumscribe rhinology, while to study otology from the rhinological standpoint only is to leave out of consideration much that is of importance to an organ of special sense which has varied relationships with the functions of other organs and with the well being of the human economy as a whole. The association of otology with ophthalmology was one of economical origin and without scientific reason, the association with laryngology has always been one of uncertain tenure, and it is the association with rhinology alone that has any substantial ground for persistence, and that to a limited extent, for, inevitably, as rhinology grows, and there could be no better evidence of growth than the number of valuable contributions, both in original research and in clinical observation, it will become more and more a distinctive field, capable of commanding the individual devotion of the scientific investigator and earnest practitioners, as otology has done from its beginning.

11. **Types of Congenital Symbol Amblyopia.**—Clairborne concludes that there is an incomplete word blindness which is congenital and which should be called word amblyopia. There is doubtless an incomplete congenital figure blindness, which may be called figure amblyopia. This may be the basis of the inability of some children to learn mathematics as easily as their general intelligence would lead one to expect. These two forms of amblyopia may be called symbol amblyopia. There is an incomplete congenital word deafness which should be called amblykusis to parallel the term amblyopia. There is doubtless an incomplete congenital musical note deafness which may be the basis of the inability of some people to remember and appreciate musical notes; this should be called music amblykusis, or amblymusia. When cases of these kind are met in the schools they should be carefully differentiated, properly grouped, and instructed. The basis of the instruction should be repetition, coupled with patience. It is reasonable to teach such children to become left handed, in order that the speech, symbol, and sound centres on the right side of the brain may be cultivated to the exclusion of those on the left, or as supplemental to the defects on the left.

14. **Bromism: With a Report of Cases.**—Skoog concludes: 1. That the bromids are often given in excessive doses continuously over a long period in epilepsy and some other diseases. In many cases they are contraindicated or the patient is not carefully enough observed during the course of treatment. 2. After a few weeks cellular resistance is lowered, the degree depending on the individual susceptibility and amount of drugging. 3. The great importance of an early detection of the mild beginning state of bromism is apparent. 4. Though the skin often gives the first evidence, other organs may be simultaneously affected and some few show the first isolated symptoms of bromism. For the future welfare of the individual, the gastrointestinal and mental derangements from the injudicious use of the bromids are of greater importance than skin lesions.

MEDICAL RECORD

December 1, 1906.

1. The Treatment of Diffuse Suppurative Peritonitis Following Appendicitis, By Franz Torek.
2. Hospitals Connected with Medical Schools, By D. B. St. John Roosa.
3. More Ether; Less Chloroform, By Joseph E. Lumbard.
4. An Important Factor in the Causation and Treatment of Many So Called Functional Disorders, By Carl G. Leo-Wolf.
5. Quinine Fever, By A. L. Goodman.
6. A Case of Perforation of the Soft Palate, Due to Tertiary Syphilis; Staphylorrhaphy, By H. Fred Lange Ziegel.

1. **The Treatment of Diffuse Suppurative Peritonitis Following Appendicitis.**—Torek understands under diffuse suppurative peritonitis following appendicitis cases of appendicitis, accompanied by the presence of free pus spread over the greater part of the peritoneal cavity, which was used to be designated as general peritonitis. Up to the present time he has operated in eighteen cases of diffuse suppurative peritonitis by his method, and he feels prompted to publish these for two reasons, (1) that he has had the good fortune of being able to save all the patients operated upon not later than seventy hours after the onset of the diffuse peritonitis, and even two on the fourth day; and (2) because his method of operating differs in many particulars from that described by other surgeons. The main points are: (1) Extensive incision, as a rule in the median line; (2) lavage with saline solution poured in large quantities into the peritoneal cavity; (3) closure without drainage. The method of operation is the following: The incision is in the median line, extending from the pubes to above the umbilicus, the upper limit being at least two inches above the umbilicus, usually higher. When the peritonæum has been incised, as a rule, the pus or purulent serum at once begins to flow out; it should be allowed to flow out, and where it cannot flow out it is dipped out with gauze sponges or swabs that are immediately discarded. When the bulk of the pus has thus been removed, the appendix is next exposed, a procedure by which often an accumulation of pus imperfectly separated from the rest is opened up. After having removed the appendix the peritoneal cavity is flushed with large quantities of saline solution which is poured from bottles or pitchers. The flushing is done in sections, a portion of the peritoneal cavity being cleaned at a time. Whenever fresh adhesions between adjacent coils of intestine are encountered, they must be loosened. When the lavage has been finished, the abdomen is closed completely, without drainage. The after treatment demands careful attention. All these patients require hypodermic

stimulation, strychnine, digitalis, and camphor, occasionally caffeine and nitroglycerin. In cases with severe shock saline infusion is given, adrenalin is administered, and the foot of the bed is elevated. Hypodermoclysis is an excellent method of introducing fluids when the stomach is not capable of retaining them. The introduction of fluids in this manner, or by infusion, also counteracts sepsis, as it encourages the elimination of poisons by the kidneys. Vomiting is treated by lavage of the stomach. For pain, enough morphine is injected to make the patient fairly comfortable. As a rule, these patients do not pass gases spontaneously during the first two days; sometimes even not for four days. To relieve them the rectal tube is inserted frequently. This may give but a moderate degree of relief; nevertheless, in these first few days, the employment of any of the more active means of encouraging peristalsis, such as cathartics or enemata are not recommended.

3. **More Ether; Less Chloroform.**—Lumbard concludes that: 1. Ether is more generally used than chloroform, because it is safer. 2. The drop method of administering ether is very popular. 3. Nitrous oxide is preferred as a preliminary to ether by nearly all who have used it under favorable circumstances. 4. Medical colleges do not place enough importance upon anæsthetics and their administration. 5. If more ether and less chloroform were used, we certainly would have fewer deaths. He states that the advantages of ether are: 1. The first and all important advantage is its safety. 2. It is stimulating, whereas chloroform is depressing. This can well be demonstrated when you have a flagging pulse under chloroform, and change to ether. 3. Ether will stand more abuse than chloroform, which is a great advantage when one is obliged to have a novice administer the anæsthetic. 4. Ether usually gives warning of approaching danger, which chloroform seldom does. 5. The practical working range of ether is much wider and there is less fear of accident from an overdose than when chloroform is used. The contraindications of ether are: 1. Protracted operations about the mouth, jaw, nose, and pharynx. The contraindications in these cases can be overcome by the rectal method. 2. All operations requiring the use of the actual cautery. 3. Any acute pulmonary irritation, or advanced or acute renal disease. However, the use of ether cannot be excluded by any hard and fast rule.

5. **Quinine Fever.**—Goodman writes that the perverse action of drugs offers a great field for research work, and has attracted the attention of physiologists and laboratory workers for many years. But long before the present improved methods were known, it remained the province of the general medical man to observe this peculiar effect of drugs, and that he did so is attested by the literature of the past, rich in records of observations along these lines. For some months past the author has devoted himself to a rather exhaustive search of the literature of quinine fever; and finding so few cases given, he reports one of his own. When we come to study the physiology of fever, the author remarks, we find its phenomena divided into the thermogenic, thermotaxic, and thermolytic. The thermotaxic apparatus has its cerebral origin in the corpus striatum, and the anterior end of the thalamus. Its fibres probably decussate about the nib of the calamus, and then run down the lateral columns. The thermogenic apparatus is situated in the spinal cord; the thermolytic apparatus or heat dissipating centre, consists of the vasomotor system, sweat glands, the lungs, and the reflex action of the surface nerves on the thermotaxic or inhibitory apparatus, allowing increased or diminished heat production, according to the surrounding temperature. The author, therefore, draws the conclusion that if we are to look for an explanation for the untoward effect of quinine, it would be the most plausible thing to expect the solution of the phenomena to be due to some chemical changes in the blood acting on the heat dissipating apparatus in persons who have, or who have had, malaria. All the cases reported were patients in whom the diagnosis of malaria had been made at one time or another. Lastly, to strengthen this logical deduction, we have to think of the various exanthemata caused by the administration of the quinine preparations.

BRITISH MEDICAL JOURNAL.

November 17, 1906.

(Seventy-Fourth Annual Meeting of the British Medical Association.)

Section of Laryngology and Otology.

1. A Discussion on the Treatment of Deviations of the Nasal Sæptum.
   By ST. C. THOMSON, J. O. ROE, G. R. MCDONAGH, and others.
2. Demonstration of an Exostosis of the Frontal Sinus, and a Skiagraph of the Same,
   By H. E. JONES and T. HOLLAND.
3. Demonstrations, By H. P. MOSHER.
4. Headache: Pathological Conditions of the Middle Turbinal a Causal Factor, By H. SMURTHWAITE.
5. Some Unusual Cases of Frontal Sinus Suppuration,
   By P. G. GOLDSMITH.
6. Some Considerations Upon Certain Factors in the Diagnosis and Treatment of Suppurative Lesions in the Nasal Accessory Sinuses, By H. TILLEY.
7. A Study of the Anatomy of the Accessory Sinuses of the Nose, Based Upon Reconstructions of Two Heads, By H. W. LOEB.
8. Skiagraphy as an Aid in the Diagnosis and Treatment of Disease of the Accessory Sinuses of the Nose, with Exhibition of Plates, By C. G. COAKLEY.
9. Two Cases of Abductor Paralysis, By G. L. RICHARDS.
10. A Discussion on the Indications for Ligation of the Internal Jugular Vein in Pyæmia,
    By H. E. JONES and J. F. MCKERNON.
11. The Pathogenic Influence of Aural Lesions in Systemic Disease, By S. MAC C. SMITH.
12. To What Extent is it Advisable to Adopt Conservative Methods in the Treatment of Aural Diseases?
    By G. BACON.
13. The Value of the Blood Clot as a Primary Dressing in Mastoid Operations, By C. J. BLAKE.
14. The Use of the Cold Wire Snare in the Removal of Hypertrophied Tonsils, By A. G. BRYANT.

Other Articles.

15. On the Operative Treatment of Ulcer of the Stomach and Its Chief Complications, with Indications, Limitations, and Ultimate Results, By A. W. M. ROBSON.
16. Operations Upon the Lower Part of the Common Bile Duct, By B. G. A. MOYNIHAN.
17. Self-Restraint in Surgery, By B. HALL.
18. Case of Suprapubic Lithotomy with Enucleation of the Prostate in an Aged Patient: Recovery,
    By H. LITTLEWOOD.

1. **Deviations of the Nasal Sæptum.**—Thomson discusses the submucous operation for correction of deviations of the nasal sæptum. He sums up the advantages of the operation as follows: No general anæsthetic is required; there is no hæmorrhage, and pain and shock are absent. There is no reaction, the postoperative temperature seldom rises above 99° F. Sepsis, with its possible extension to ear sinuses or cranial cavity, is absent. No splints are required, and no plugs after forty-eight hours. Healing is rapid, without crust formation, and there is no risk of troublesome adhesions. After treatment is short, and nasal respiration is speedily established. The operation is suitable for all deformities of cartilage or bone in the sæptum requiring treatment. The space gained is not that resulting from a vertical sæptum, but the extra room secured by the removal of the cartilage, which is sometimes one eighth of an inch in thickness. No ciliated epithelium is sac-

rificed. Accuracy of result can be depended on and the prognosis is, therefore, the more definite. The external appearance of the nose is greatly improved.

4. **Headache Due to Nasal Disease.**—Smurthwaite states that headache, which may vary from a feeling of slight oppression across the forehead to an acute throbbing pain, can have its origin in the nose and can be cured by appropriate treatment. The headache symptoms are met with in those cases in which the anterior end of the middle turbinal is tightly wedged against the sæptum. Removal of the anterior end of the turbinate, by relieving the pressure, causes the headache to disappear.

8. **Skiagraphy of the Nasal Sinuses.**—Coakley is thoroughly convinced that a good skiagraph can be depended upon to demonstrate not only the size of the accessory sinuses of the nose, but the presence or absence of the disease as well. The presence or absence of the frontal sinus can be demonstrated with certainty before operation; its size can be accurately determined, also the situation of the sæptum between the two sinuses, and the location of partial sæpta. Negatives of diseased sinuses invariably show a cloudiness over the area of the sinus and indistinctness of its outlines. The width of the ethmoidal cell area is easily determined, which is of great help in intranasal operations on those cells. The same is true of the maxillary and sphenoidal sinuses.

13. **Blood Clot in Mastoid Operations.**—Blake's conclusions are as follows: In a case of mastoid disease, after the cavity has been thoroughly cleansed and safeguarded from without, it is subject to reinfection mainly through one channel, that leading from the middle ear, which cavity should itself be thoroughly cleaned and independently drained through the external auditory canal. The use of the blood clot, completely filling a carefully exenterated mastoid cavity, results when it persists, in healing by first intention in a number of cases. The persistence of the clot during the period of its protective viability, even though it later comes away entirely, is of great value. Foundation granulomata are formed which are a basis for subsequent repair. The blood clot is not an inert filling material merely, but has in its serum a protective defence, viable for at least forty-eight hours after the formation of the clot, and in its clot a repair material capable of producing dense fibrous bands traversing the unified mastoid space. The safety of the procedure is assured by the limitation of the protective viability of the clot itself, as it breaks down under a volume of pyogenic material, which it is in itself insufficient to conquer, and provides exit along the line of least resistance through the surgically created channel. The only cases to which the blood clot dressing is inapplicable, are those in which it is desirable to keep the mastoid cavity open as a path of access, on account of pyogenic invasion of neighboring structures, or because the extent of the local infection does not warrant the expectation of speedy repair.

14. **Removal of Tonsils by Wire Snare.**—Bryant recommends the removal of hypertrophied tonsils by means of the cold wire snare. The advantages are: 1. The time required for operating is reduced to a minimum. 2. The operating is done effectively with the least possible injury to the patient. 3. The hæmorrhage, pain, and vomiting is usually slight. 4. Asepsis is carefully observed. 5. The growth is firmly grasped by the tonsil tenaculum and is in no danger of being aspirated or swallowed. 6. The wire loop is never broken. 7. Only moderate traction is used on the tonsil in closing in on the wire. 8. Neither knife, scissors, nor cautery is required for separating pillars from tonsil. 9. The reaction after the operation is very slight. 10. The tonsil is completely removed and recurrence of tonsillar tissue is thereby prevented.

LANCET.

November 17, 1906.

1. The History of the Study of Clinical Medicine in the British Islands (*Fitzpatrick Lectures, I*), By N. Moore.
2. Longevity and the Means of Attaining It, By Sir L. Brunton.
3. The Bacteriology of Aseptic Wounds, By L. S. Dudgeon and P. W. G. Sargent.
4. Delayed Chloroform Poisoning: A Clinical Study with a Report of Three Fatal Cases, By E. D. Telford and J. L. Falconer.
5. Some Contributions to the Orthopædic Armamentarium, By E. M. Little.
6. A Case of Chronic Intussusception with Complete Inversion of the Vermiform Appendix, By J. W. Struthers.
7. On the Increased Mortality in England and Wales from Kidney Diseases, with Special Reference to Boron-Preservatives as a Factor Therein, By B. F. Giles.
8. Malaria in Greece, By R. Ross.

2. **Longevity.**—Brunton considers the nature of the risks which old people run and how they may be best foreseen and averted so that great activity in advanced years may become the rule instead of the exception. These risks may be divided into: (a) those which arise from external influences; and (b) those which originate in the body itself. Of course the action of both classes of causes may be combined. The introduction of antiseptic methods in surgery is reducing the number of deaths from septic infection and so increasing longevity. This is especially true as regards disease of the bladder and the introduction of prostatectomy. Erysipelas is a common cause of death among the aged, and should be diminished greatly by antiseptic measures. Respiratory diseases carry off many aged persons; while they are usually consequent upon exposure to cold, yet pathological organisms play the most important part. Many so called common colds are very infectious and readily transmitted. Dust is a most important factor in the causation of colds. So that aged people should be protected from dust, from cold, and from sudden changes of temperature and draughts. Wind fairly in the face is little to be dreaded, but at the back of the neck or at the side of the head it is much more dangerous. But one of the most important methods of securing health is to increase the patient's power of resistance. The peripheral vessels of the whole body should be trained to alternate heat and cold; this is best done by daily baths, exercise, and walking. In old age intestinal diseases of bacterial origin are comparatively rare. Cancer is a common cause of death among the aged; we cannot say at present how much faulty nutrition has to do with this. But diet has a most important effect upon diseases of the circulation, which are more fatal among the aged than even cancer. Arteriosclerosis with its attendant evils is the great enemy to longevity. And arteriosclerosis is the result of heightened blood pressure which in turn is most often due to faulty diet, excessive use of meat, strong soups, etc. Keep down the blood pressure and you prolong life. Cholagogues and purgatives, potassium iodide, the nitrites and nitrates are all useful to this end.

3. **Bacteria in Aseptic Wounds.**—Dudgeon and Sargent have studied the bacteriology of so called aseptic wounds—those that heal by first intention. They found the staphylococcus albus present in the great majority of the cases, both on the surface of the wound at the close of the operation, and in the exudate from the wound at the first dressing. They believe that this organism is practically always present, and is the cause of the so called aseptic traumatic fever. It probably takes an active part in nonsuppurative inflammation.

4. **Delayed Chloroform Poisoning.**—Telford and Falconer report three cases of death due to delayed chloroform poisoning. There is as yet no satisfactory

explanation as to why chloroform causes death in this way. The most attractive explanation is that which supports an analogy between delayed chloroform poisoning and the phenomena of acid intoxication. The clinical features of acid intoxication are well illustrated in the cyclic vomiting of children, the symptoms are profuse and persistent vomiting, with drowsiness, stupor, or coma, obstinate constipation, and the presence of acetone in the breath or urine. It has been suggested that the fatal cases of delayed chloroform poisoning are merely instances of cyclic vomiting, precipitated by the use of a general anæsthetic. The author, however, thinks that the poisoning is due to some toxic action peculiar to the drug. It may be that such toxic action is exerted indirectly through the intermediary of the central nervous system, or the chloroform may be of itself a direct tissue poison. It is probable that certain predisposing conditions must always be present, rickets is probably one of these, especially where the disease is active.

LA PRESSE MEDICALE.

November 10, 1906.

1. Technique of the Operation for Undescended Testicle, By EMILE FORGUE.
2. The Effects of Large Naval Guns. Souvenirs of the Battle of Tsoushima, By J. J. MATIGNON.
3. Hæmorrhages of the Vermiform Appendix (General Histopathology), By MAURICE LETULLE.
4. The Barber-Surgeon Gerard Dow. From the Collection of Leopold Favre, Geneva, By HENRY MEIGE.
5. The Costume of a Tonkin Physician, By P. D.

1. Operation for Undescended Testicle.—Forgue describes minutely, with the aid of seven excellent drawings, the various steps in this operation from the first incision through the skin to its final closure after the testicle has been placed in the scrotum.

2. The Effects of Large Naval Guns.—Matignon states that the battle of Tsoushima was as unique as that of Salamis, and that the history of Togo can be compared with that of Nelson at Trafalgar alone. He then describes and presents reproductions of photographs of injuries of varying severity produced by the missiles from the heavy guns. Perhaps the most striking picture of all is a photograph in which is shown the severe burns of head, arms, and hands, of all parts not protected by clothing, produced by the gas from an exploding shell.

November 14, 1906.

1. Contribution to the Study of Hepatic Colic. Vesicular Colic, By Professor A. GILBERT.
2. Total Resection of the Varicose Saphenous Vein, By M. GUIBE.
3. Leucæmia from Mastzellen (Polynuclear Leucocytes with Basophile Granulations), By R. ROMME.

1. Vesicular Colic.—Gilbert calls attention to the fact that in 1898 he proposed the term vesicular colic to designate a certain variety of hepatic colic in which the pain is less violent than in the usual form, is spontaneous, or may be produced and increased by pressure, over the gallbladder. Nausea and vomiting are very frequently present, constipation is habitual, jaundice is absent. The gallbladder can sometimes be felt, sometimes not, but no calculus can be detected. The temperature is rarely normal, usually it is slightly elevated. The course varies in different cases. The condition of the gallbladder is susceptible of spontaneous recovery, and the treatment suggested is absolute rest, an exclusive diet of skim milk in small quantities frequently repeated, sedatives, the application of hot, moist compresses over the region of the gallbladder, rigorous interdiction of purgatives and cholagogues, and the use when necessary of enemata and suppositories.

2. Resection of the Saphenous Vein.—Guibe describes with illustrations the operation for excision of the entire saphenous vein when it is varicose. Such an operation may be contraindicated by the general condition of the patient, advanced age, the presence of cardiac lesions, or of arteriosclerosis, very marked obesity, or renal insufficiency, or by the local presence of varicose ulcers or of phlebitis. Local ulcers or phlebitis should be cured before such an operation is attempted.

LA SEMAINE MEDICALE.

November 14, 1906.

Ischæmic Contracture of the Limbs, By L. CHEINISSE.

Ischæmic Contracture.—Cheinisse discusses the literature on this condition, which was first brought to our notice by Volkmann, in 1872, but adds little if anything to our knowledge.

BERLINER KLINISCHE WOCHENSCHRIFT.

November 5, 1906.

1. Contribution to the Study of the Status Hemiepilepticus, By M. BERNHARDT.
2. Ætiology of the Paralysis of the Inferior Laryngeal Nerve, By DEGE.
3. Lues Nervosa, By A. H. HÜBNER.
4. The Treatment of Cystitis with Alcohol, By J. SELLEI.
5. The Specific Treatment of Tuberculosis (*Concluded*), By E. MARAGLIANO.
6. Anthracosis of the Lungs and Its Origin from the Intestine (*Concluded*), By M. COHN.
7. Examination of the Larynx and Some of the Principal Diseases of the Larynx in Children.

1. The Status Hemiepilepticus.—Bernhardt reports a case of this nature which occurred in a woman, thirty-five years old, and proved fatal after a few days. Hemicraniotomy was performed in search of a lesion in the brain, but none was found. On autopsy no macroscopical pathological lesion could be discovered. No microscopical examination was made.

2. Ætiology of the Paralysis of the Inferior Laryngeal Nerve.—Dege reports several cases of paralysis of the recurrent laryngeal nerve which he ascribes to either a toxic neuritis, such as has been observed after various infectious diseases, or serious injury of the nerve from direct pressure by inflamed lymphatic glands, or pleuritic deposits at the apex of the lung.

3. Lues Nervosa.—Hübner asserts that the clinical and anatomical facts can be readily explained without the acceptation of the theory of lues nervosa, that the material which authors have looked upon as evidence in favor of their theory can, and perhaps must, be considered from other points of view, and that the existence of a lues nervosa has not yet been proved.

4. The Treatment of Cystitis with Alcohol.—Sellei had his attention called by the successful use of alcohol in other parts of the body to the question whether the ammoniacal decomposition of the urine could not be prevented by alcohol or alcoholic solutions, and the healing of a cystitis be promoted thereby. His investigations were attended by such favorable results that he recommends alcohol, or irrigation with correspondingly diluted alcohol, not only as a suitable urinary antiseptic, but also as a direct remedy in many cases of cystitis. He obtained particularly good results in those cases in which the cystitis was associated with prostatic hypertrophy, and in those in which the cystitis was due to gonorrhœa, and no other complications were present.

5. The Specific Treatment of Tuberculosis.—Maragliano concludes his paper with the pronouncement and discussion of these two propositions: There is, in fact, a specific treatment for tuberculosis and for human tuberculosis, but it will meet with little confidence in practice until physicians become convinced that it is absurd to expect from it a curative action on destroyed tissue in a disintegrating organism. It is possible that a prophylaxis against tuberculosis in human beings may be obtained by means of a specific inoculation.

6. Anthracosis of the Lungs and Its Origin from the Intestine.—Cohn concludes that there is no anthracosis

from food, that all elderly animals have a physiological anthracosis, and that the glands of the bilus of young animals are free, because the pigmentation of the lungs is very slight.

MUENCHENER MEDIZINISCHE WOCHENSCHRIFT

November 6, 1906.

1. Möller-Barlow's Disease. (Infantile Scurvy), By FRÄNKEL.
2. The Occasional Presence of Endocarditis in Muscular Rheumatism, By BECHTOLD.
3. The Proteolytic Ferment of the Leucocytes, Especially in Leucæmia, and the Opposing Action of the Blood Serum, By EPPENSTEIN.
4. A Case of Cured Arteriitis Typhosa, By BLUM.
5. Rare Courses in Valvular Insufficiency, By GRASSMANN.
6. Sarcomatosis of the Pericardium, By SCHÖPPLER.
7. The Diagramatic Representation of Pulmonary Conditions, By BESOLD.
8. The Coincidence of Fat Granules, Iron Holding Pigment, and Cell Nuclei in Frozen Sections, By WALLART.
9. Suction Treatment in Nasal Diseases, By SONDERMANN.
10. Means of Protection Against Venereal Diseases, By GROSSE.

2. Endocarditis in Muscular Rheumatism.—Bechtold gives the clinical histories of eleven cases of muscular rheumatism in which endocarditis either developed while the patient was under observation, or changed in its intensity in such a way as to create the impression that it was due to the same infection. In only one of these cases did the connection seem to be at all doubtful.

3. The Proteolytic Ferment of the Leucocytes, Especially in Leucæmia, and the Opposing Action of the Blood Serum.—Eppenstein says that the leucocytes in myeloid leucæmia (polynuclear leucocytes and myelocytes) liquefy gelatine, while lymphocytes do not, that the action of the blood serum is to restrict the effect of the proteolytic ferment in the leucocytes, and that this restrictive action can be lessened by an exposure to a temperature of about 58° C. for half an hour.

4. A Case of Cured Arteriitis Typhosa.—Blum reports a case of arteriitis which complicated typhoid fever in a man, twenty-two years old, who got well. The pain was very severe and the affected limbs were a little swollen often, but symptoms of gangrene did not appear. Ricketts, of the United States, has collated 134 cases of this very rare affection in which gangrene of the lower limbs was produced.

5. Rarities in Valvular Insufficiency.—Grassmann reports two peculiar cases. In the first case marked symptoms of valvular insufficiency dependent on endocarditis totally disappeared for a time and then recurred with a fatal result. The second was one of a fatal intestinal hæmorrhage in a patient who had a high degree of mitral stenosis and aortic insufficiency. The autopsy revealed only a simple stasis catarrh of the intestine.

6. Sarcomatosis of the Pericardium.—Schöppler gives the clinical history of a case of this nature, together with the findings at autopsy. After a discussion of the literature on tumors of the heart he concludes that primary tumors of the heart are relatively rare, that as such fibromata and myxomata are more common than sarcomata, and that their location in the pericardium is of extreme rarity. Tumors of the heart and pericardium usually are of the connective tissue variety and are most commonly situated in the left auricle. They do not furnish a characteristic clinical picture. Men are more frequently affected than women, and age furnishes no guide to the ætiology.

9. Suction Treatment in Nasal Diseases.—Sondermann reports a case of probable empyema of the sphenoidal sinus in which he obtained a good result by systematic suction for about four weeks.

November 13, 1906.

1. The Influence of the German Accident Legislation on the Course of Nervous and Mental Diseases, By GAUPP.
2. The Aerobic Cultivation of the So Called Anærobic Bacteria, By HARRASS.
3. Macroscopic Spirals in Asthma, By RIEHL.
4. Tuberculosis of the Lungs and Accidental Peripheral Injury, By EWALD.
5. A New Instrument for the Ligation of Deep Vessels, By BIRCH-HIRSCHFELD.
6. A Case of True Erysipelatous Angina, By ROTH.
7. Möller-Barlow's Disease (Infantile Scurvy), (*Concluded*), By FRÄNKEL.
8. Laying of the Corner Stone of the German Museum of Classical Works of Natural Science and Technique, on November 13, 1906, By SUDHOFF.
9. Oswald Vierordt, By HAMMER.
10. For the Eppendorf Hospital, By LENHARTZ.
11. The Restriction of the Spread of Infectious Diseases by Means of Disinfection, By BÖHM.

2. The Aerobic Cultivation of the So Called Anærobic Bacteria.—Harrass has succeeded in the ærobic cultivation of the *Bacillus butyricus,* the *Bacillus botulinus,* the bacillus of anthrax, and that of malignant œdema, which have hitherto been considered purely anærobic.

3. Macroscopic Spirals in Asthma.—Riehl has found in the sputa of four patients with bronchial asthma spiral bodies which varied from six to twenty-four centimetres in length.

4. Tuberculosis of the Lungs and Peripheral Injury.—Ewald inclines to think that just as tuberculosis of a joint may be produced by a contusion, so tuberculosis of the lungs may originate from an accidental injury, and quotes several cases which seem to support his contention.

5. Instrument for the Ligation of Deep Vessels.—Birch-Hirschfeld has devised a very ingenious instrument to assist in the ligation of the deep vessels of the orbit, hæmorrhage from which during operations is sometimes very difficult to control. The original should be consulted for its description.

7. Moeller-Barlow's Disease.—Fränkel argues the identity of this disease with infantile scurvy, and urges that the name Möller-Barlow's disease be abandoned.

LA RIFORMA MEDICA

November 10, 1906.

1. The Physiological Action and Therapeutics of Isoprol, By ANNIBOLE CARUSI.
2. Clinical and Anatomopathological Observations on Forty-six Cases of Intestinal Obstruction Due to Intrinsic Causes (*To be continued*), By LUCA FIORAVANTI.
3. Traumatic Rupture of the Heart, By U. ALESSI and A. PIERI.

3. Traumatic Rupture of the Heart.—Alessi and Pieri present an analysis of this subject, with the report of an autopsy in a man who had fallen from a third story scaffolding, striking a horizontal iron bar at a distance of six metres from the ground. Death was instantaneous. The heart was normal in size, somewhat flabby, and showed an increase of fat. Two centimetres from the apex of the anterior wall of the right ventricle a rupture of the muscular fibres was noted, opening into the cavity of the ventricle. The margins of this rupture were ragged and a second opening was found in the left ventricle, two centimetres distant from the first, a little behind the apex. The wall in the neighborhood of these ruptures was thin and was covered externally by pericardial fat. The valves were healthy. Here then was an example of indirect traumatism to the heart, which rarely gives rise to rupture of this organ. In this instance the cause of the injury had been undoubtedly the severe blow on the chest which the patient received when he fell on the bar. During the fall the circulation in the arterial system was im-

peded by the deep and prolonged inspiration in which the thorax remains. The blood which was at that moment in the heart, and particularly in the left ventricle was subjected to a severe strain. The sudden blow upon the chest was transmitted to the over distended heart, and caused the rupture of the viscus. The myocardial lesions in the present case were comparatively trifling, and it required the peculiar combination of circumstances described to produce the rupture.

THE PRACTITIONER.

November, 1906.

1. Valvular Disease of the Heart. Aotic Obstruction, By R. CRAWFURD.
2. The Liver as a Toxine Filter, By W. HUTCHINSON.
3. Serum Therapy, By W. D'ESTE EMERY.
4. The Diagnosis of Pleural Effusion and of Empyema in Children, By G. S. MIDDLETON.
5. The Wasting Diseases of the Registrar General. An Inquiry Into the Mortality of Infancy, By T. DIVINE.
6. Physical Methods of Treating Heart Disease. The Nauheim Bath, By A. G. BENNETT.
7. A Review and Study of Some Recent Literature Upon Arthritis, By F. J. BOYNTON.
8. Prophylactic Treatment of Post Partum Hæmorrhage, By G. W. FITZGERALD.
9. A Case of Sarcoma of the Temporal Dura Mater which Simulated a Suppurative Mastoiditis, By W. DOWNIE.
10. The Nature of Malignant New Growths of the Testis, By F. G. BUSHNELL.
11. The Immediate Treatment of Ruptured Perinæum, By D. T. BARRY.
12. The Ætiology, Pathology, Symptoms, and Treatment of Infantile Paralysis, By H. W. MOXON.

2. **The Liver as a Toxine Filter.**—Hutchinson shows how the various attributes which have been given to the bile have, one after another, been dismissed until now it is recognized in the words of Landois, to be "a metabolic excretion, playing only an insignificant part in the process of digestion." Its administration as a remedy for intestinal disturbance is entirely irrational. The liver pours its fluid waste into the most active and important site of digestion in the alimentary canal, and it would almost seem strange that it does not hinder the process of digestion. The function of the liver as an aid to digestion being dismissed, it becomes pertinent to consider it as a toxine destroyer or poison filter for the blood, especially for that of the portal system. Extensive experiments proved that it was a reducer and detoxicator of toxic substances in the blood of the portal vein and of the hepatic artery. Overloading this organ with poisons for reduction will check its secretion and produce congestion and stasis. Hence, from this point of view the function in question becomes one of increase of destructive tissue metabolism due to the invasion of the toxines of various infective processes, and such a theory adequately explains the conditions which obtain in biliousness, influenza, puerperal toxæmia, jaundice, etc.

3. **Serum Therapy.**—Emery has found the results from the use of antistreptococcic serum in scarlet fever very doubtful. Moser's serum has given better results than the others. Articular rheumatism has been successfully treated in a number of cases by Menzer with a serum made from streptococci of human origin. Several sera have proved valuable in the treatment of anthrax, the best being that of Sclavo, which is obtained from the sheep or ass. Typhoid has been successfully treated by Chantemesse with an antitoxine which is obtained from horses. The author thinks better results would be obtained with a vaccine. The serum treatment of plague has been successful in India and Natal, especially when used by intravenous injection. Pneumonia has been successfully treated in a number of reported cases. Two varieties of sera have been produced. Dysentery has been subjected to treatment with the sera of Shiga and others, and the reports are quite favorable. Sera have also been used in the treatment of tubercle cerebrospinal fever, gonorrhœa, cancer, malaria, hydrophobia, staphylococci, serpent venom, syphilis, yellow fever, etc.

4. **Pleural Effusion in Children.**—Middleton states that having determined that there is fluid in the pleural cavity its nature is to be determined. This is often possible by study of the temperature, by the presence of rigors and sweating, vocal resonance, bulging and tenderness over the intercostal spaces, or by the history. An exploring needle should be used in doubtful cases. If pus is obtained and it is from the lung the microscope will reveal (a) catarrhal cells with carbonaceous pigment, (b) yellow elastic lung tissue, (c) pus cells in rows separated by threads of mucus. In the examination of children it must be remembered (1) that there is no expectoration, and (2) that a child's voice does not give a tangible fremitus. If a diagnosis of pneumonia has been made empyema should be suspected and an exploratory puncture made: 1. When there is undue delirium. 2. When there is marked oscillation of the temperature. 3. When there is tenderness over the affected side. 4. When there is fullness in one or more intercostal spaces in the area of dulness. 5. When there is prolongation of fever with or without acute symptoms, beyond the period of pneumonia crisis. 6. When there is doubt as to the diagnosis, all possible precautions having been taken.

5. **Wasting Diseases.**—Divine states that the statistics of the registrar general include premature birth, congenital defects, injury at birth, atetectasis, and atrophy. The infantile death rate is forty-four per one thousand births in England and Wales. Four diseases are tabulated by the author: atrophy, syphilis, diarrhœa, and tuberculosis. Early atrophy appeared to be an index of inherent weakness in the infant due largely to parental conditions, especially to syphilis, tuberculosis, and alcoholism. Late atrophy appeared to be the result of improper feeding and bad hygienic conditions, including parental neglect and want of cleanliness. The mortality rate for the wasting diseases is increasing, and indicates marked and increasing physical deterioration of the people at large. Especial stress is laid upon the great number of deaths from congenital syphilis, with the additional emphasis that official returns enormously understate the real mortality from this cause.

6. **Physical Methods of Treating Heart Disease.**—Bennett summarizes the effects of the Nauheim baths in the treatment of such disease as follows: 1. A general dilatation of the capillaries and smaller bloodvessels of the surface, with consequent relief to ventricular contraction. 2. A slowing of the pulse with more complete emptying of the ventricles. 3. An increase in the tone of the capillaries, with probable increase in the force of their rhythmical contractions, causing additional volume and rate of the distal circulation. 4. A floating upwards of the heavy abdominal viscera by hydrostatic pressure. 5. A reflex nervous effect on the cardiac ganglia, whereby the ventricular power is increased and regulated. 6. The action of the skin and kidneys is increased. 7. There are certain beneficial trophic effects in cases of anæmia, neurasthenia, osteoarthritis, diseases of the spinal cord, and some cases of peripheral paralysis.

8. **Prophylactic Treatment of Post Partum Hæmorrhage.**—Fitzgerald states that after a normal labor there is no post partum hæmorrhage, the natural preventive forces, contraction, retraction, and coagulation being efficient. Anything which interferes with these forces will favor hæmorrhage. Compression of the abdominal aorta will arrest hæmorrhage, but the author believes that shutting off the blood supply of the muscle will interfere with proper contraction and retraction. Prophylaxis to prevent hæmorrhage should consist in

the removal or treatment of the possible causes. Hæmophilia is one of the occasional causes, and should be overcome by treatment with arsenic, strychnine, and calcium chloride. Precautions should be taken to prevent protraction of the first two stages of labor, while the third stage should be as gradual as is consistent with safety. In the presence of hydramnios or multiple pregnancy the emptying of the uterus should be gradual to insure adequate contraction and retraction; the second stage should, therefore, be delayed as much as possible. If the patient has renal disease or syphilis the third stage should be delayed on account of the fibrous bands which are frequently present between the uterus and placenta. Hæmorrhage in such cases should call for immediate removal of the placenta. Precipitate labor predisposes to post partum hæmorrhage; the same is true of forcible manipulation of the uterus to expel the placenta. As a general rule, the author advises that no interference with the placenta be attempted for forty to sixty minutes after the termination of the second stage of labor.

THE AMERICAN JOURNAL OF OBSTETRICS.

November, 1906.

Transactions of the American Association of Obstetricians and Gynæcologists.

1. President's Address. The Diagnosis and Surgical Treatment of Injuries to the Diaphragm, By J. Y. Brown.
2. Kidney and Colon Suspension by the Use of the Nephrocolic Ligament, and Gerota's Nephrocolopexy Capsule, By H. W. Longyear.
3. Fixation of the Kidney by Shortening of the Nephrocolic Ligament, with Report of Cases, By C. A. L. Reed.
4. The Technics of Kidney Fixation, By J. H. Carstens.
5. Porrocæsarean Section for Pregnancy with Complicating Fibroids, By J. F. Baldwin.
6. Uterine Fibroids Complicating Pregnancy, By M. Rosenwasser.
7. Abdominal Section for Trauma of the Uterus, By C. E. Congdon.
8. The Rectum in Its Relation to Diseases of Women, By H. O. Pantzer.
9. The Trend of the Times in Appendicectomy, By N. S. Scott.
10. Points Commonly Contested in Diagnosis and Treatment of Appendicitis, By J. Price.
11. Chronic Dyspepsia Resulting from Pelvic and Abdominal Diseases, and their Surgical Treatment, By H. E. Hayd.
12. Intestinal Obstruction Due to Gallstones, with a Report of Two Cases, By M. F. Porter.
13. Some Points in the Diagnosis and Treatment of Accidental Hæmorrhage, By A. H. Wright.
14. The Abuse of Purgatives, By E. Walker.
15. A Consideration of the Factors which Have Lowered the Operative Mortality and Have Improved the Postoperative Results, By K. O. Weider.

1. **Diagnosis and Surgical Treatment of Injuries to the Diaphragm.**—Brown believes these injuries are not infrequent, and their high mortality rate shows that they have not received the early recognition and prompt treatment which their importance demands. Most of the information on this subject has been obtained from autopsy records. In the order of frequency these injuries result from (1) penetrating stab wounds, (2) penetrating gunshot wounds, (3) severe abdominal contusions. The author has seen and operated in eight cases in which injury of the diaphragm was associated with injury to the abdominal viscera. He thinks it will rarely be possible to make positive diagnosis of this lesion, and that in many cases in which the abdominal viscera are injured there are no symptoms which direct attention to the diaphragm. This proves the necessity for careful exploration if the chest is penetrated near the diaphragm. If an abdominal incision does not permit the repair of an injury to the diaphragm, thoracotomy should be performed with resection of a rib if necessary, and the injured diaphragm pressed upward into the chest incision by the hand which has been introduced into the abdomen. Though the mortality from this injury will always be high, there are cases which may be saved if an operation is undertaken soon after the receipt of the injury.

2. **Kidney and Colon Suspension by the Use of the Nephrocolic Ligament and Gerota's Nephrocolopexy Capsule.**—Longyear states that Gerota's capsule may be easily isolated in the upper angle of the loin incision, the subperitoneal fat being first pushed out of the way. In simple cases the opening of Gerota's capsule renders the nephrocolic ligament easy of access. The mutilation of the tissues is so slight that no injury can result, even if suppuration takes place. The kidney is held in a natural manner, allowing normal motion. The bowel being suspended there is no traction on the duodenum and kidney, there is very little subsequent pain, and convalescence quickly supervenes. The operation has decided advantages over the ordinary nephropexy, which is mutilative, painful, and frequently disappointing in its results.

7. **Abdominal Section for Trauma of the Uterus.**—Congdon bases his paper on the narration of a case of puncture of the nonpuerperal uterus, with prolapse of the bowel, and forcible removal of sixteen inches of the same. When the case was brought to his notice he at once did abdominal section, repaired the uterine injury, and made anastomosis between the ilium and cæcum. The patient recovered. He has collected the published case of such injury, and divides them into (1) those at or near term occuring before the era of abdominal surgery, or of unusual operative interference by instruments within the uterus; (2) those at or near term with operative interference; (3) those due to curettage or similar operations, following miscarriage, or to gross lesions in inducing abortion; (4) recent cases at or near term without operation. In the first group, including twenty cases, there were twelve recoveries, notwithstanding the imperfect methods of treatment of the preantiseptic period. In the second group there were twenty-five cases and twelve recoveries; in the third, twenty-three cases and thirteen recoveries; in the fourth, twenty-five cases and fourteen recoveries. Reposition of the prolapsed bowel is not usually indicated, except in cases at or near term. The abdominal route should almost invariably be chosen for operation, even in cases seen long after the reception of the injury, with fæcal fistula, and involving only the rectum. Resection of the bowel will usually be indicated. It should not be forgotten that uterine rupture, at or near term, may be inevitable. Of the nine hysterectomies reported in the author's tables only four resulted in recovery.

9. **The Trend of the Times in Appendicectomy.**—Scott credits Hall, of New York, with the first successful operation for appendicitis in 1886. This was followed two years later by the epoch making essay of Fitz on the nature of this disease. McBurney showed the feasibility of operating without destroying the muscular continuity of the abdominal wall. The first element to be considered in the operation for appendicitis is the choice of an anæsthetic. The author thinks the ideal anæsthetic is yet to be discovered. The method of operating, including the length of the incision, are of great importance. A short, properly made incision will practically close itself. It must not be forgotten that an ideal operation can only be done on an ideal patient. Rapid convalescence and quick return to one's accustomed duties are the conditions to be aimed at.

12. **Intestinal Obstruction Due to Gallstones.**—Porter summarizes his paper as follows: Points of especial diagnostic importance are: 1. A previous history of gallstone disease, which may have been regarded as disease of the stomach. 2. Incompleteness of the obstruction. 3. Relative absence of tenderness, tympany,

rigidity, and fever, and especially in the earlier period of the disease. 4. Persistent and frequent vomiting. 5. Tumor in the region of the gallbladder, preceding the symptoms of obstruction, but not present with them. 6. A migratory tumor, especially if it is first observed in the region of the gallbladder. 7. A tumor which is characteristic in size, shape, and consistency, even though stationary.

Proceedings of Societies.

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Meeting of October 3, 1906.

The President, Dr. ARTHUR V. MEIGS, in the Chair.

Sacrococcygeal Tumor (Teratoma).—Dr. W. W. KEEN and Dr. W. M. LATE COPLIN presented this paper. The patient, a child, two years old, was born with a moderate sized tumor in the lumbosacral region. Near its lower margin there was a small fistulous opening in the skin. The extent of the tumor was 21 by 12 cm., and it was 5 cm. in thickness, with a slightly developed hypertrichosis over a considerable area, suggesting a spina bifida occulta. There had been no discharge of pus suggestive of abscess by which the opening could have been established, and the sinus was considered beyond doubt to be congenital. Examination under ether anæsthesia revealed the edges of an opening in the sacrum just above the fistulous opening posteriorly. Insertion of the finger into the rectum revealed an opening in the sacrum anteriorly, opposite the same point, which would admit the end of the forefinger. A probe penetrated 6 cm., and could be felt through the mucous membrane of the rectum. There was no communication with the gut, but it was clear that there was a perforation completely through the sacrum, and that the fistula passed through this perforation in the bone from the rectum to the skin, since an enema immediately escaped through the fistula.

An operation was done on November 4, 1902. A transverse elliptical incision was made inclosing the fistulous opening. The tumor was dissected from the deep fascia and the fistula left as a pedicle. After dissecting out the fistula and cutting it across, it was found to be a tube of considerably larger calibre than the opening in the skin. The internal diameter of the tube was about 4 to 5 mm., and it was lined with mucous membrane. The wall of the sinus was inverted and closed with sutures. The upper margin of the spina bifida was at the second sacral vertebra, and measured 3 by 1.5 cm. No relation of the sinus to the spinal cord or to the subdural space was evident. Instead of being lined with endothelium, it was lined with an epithelial mucous membrane. The wound was closed with interrupted sutures. It slowly healed. The sinus soon reopened and persisted. Following a second operation, done in October, 1903, the wound healed without reaction.

The case was regarded as a rare form of teratoma, peculiar by reason of the sinus which, beginning at the skin, perforated the sacrum and terminated in the calibre of the rectum. When the patient was five years old skiagraphs were taken. One showed an oval opening consisting of upper and lower portions with a slight constriction in the middle, producing the appearance of the figure 8. There was apparently no bony sacrum or coccyx below about the second sacral vertebra. A second skiagraph showed that the body of the first lumbar vertebra was broader than normal, that of the second a little broader, and that of the third of nearly twice the breadth of a normal vertebra and having a marked tendency toward separation into a right and a left half. Just below the level of the body of the third lumbar vertebra was a dark area suggestive of an abortive humerus, a forearm, and possibly a hand. It was believed to be certainly a bigerminal teratoma, possibly a trigerminal, the duplicated spine representing the imperfect fusion of the two ova, while the tumor, with its curious development of the sinus, represented an imperfectly developed trachea or bronchus, and possibly a rudimentary arm representing a third ovum.

At the present time, almost three years since the last operation, the child was reported as well developed, but walking with a waddling gait, due presumably to the unusual breadth of the pelvis or possibly to instability in the lumbar spine. There had been no trouble from fæcal accumulation in the existing short diverticulum from the lumen of the rectum to the point of obliteration of the tubular sinus at the posterior surface of the sacrum. Neither had there been any tendency to the formation of an anterior sacral meningocele.

Dr. Coplin, in his remarks from the embryological and pathological standpoint, spoke of the possible deviations from the normal in the evolution of the tissues embraced in the embryo, stating that within recent years but few groups of tumors had attracted the attention of investigators as new growths of the sacrococcygeal region had. The discussion was said to have been warmest over the questions of the unigerminal or the bigerminal origin of teratomata. Many such tumors, he thought, might certainly be considered unigerminal. The bigerminal origin of many sacrococcygeal tumors was said to be best in accord with the known facts concerning embryology and neoplastic development and to be the commonly accepted explanation for duplicated or parasitic monsters, including the attachment to, or implantation of, one fœtus upon or within another. This theory regarded all tumors containing evidence of such highly organized bodies as best explained by the assumption that they originated from an impregnated ovum, placing them directly in line with the grosser developmental anomalies represented by autosite and parasite. An interesting field of experimentation considered by Féré, Chiari, and also Lucene and Legros was said to be the artificial production of tumors of this type by grafting young chick embryos into the cavities or tissues of hens. A certain measure of success had been obtained, and after seven weeks skin with attached feathers had been found in the abdominal cavity. The grafts had developed cartilage and bone, the latter showing epiphyseal formation, trachealike structures, and even retinal elements. Similar experiments at Dr. Coplin's suggestion had been carried on, apparently with negative results. Detailed reports, he said, would be given in the near future.

In the case reported by Dr. Keen the bigerminal origin was worthy of consideration. As a rule these tumors were said to show no tendency to metastasis. It was well to remember, however, that ectopias were frequently starting points of malignancy. Another important point was the relation between teratoma of the testicle and syncytioma malignum.

Meeting of November 7, 1906.

The President, Dr. ARTHUR V. MEIGS, in the Chair.

Points in Hospital Management.—Dr. CHARLES P. NOBLE raised the question of whether or not it was best for a hospital to care for both the poor in charity wards and for the rich and those in moderate circumstances in pay wards and private rooms, and alluded to some of the factors which had favored the development of pay wards. Those interested in increasing the financial support of hospitals looked with favor upon the plan, but it was questioned whether money given for the charitable treatment of the poor was properly expended when it was applied to the erection of elabo-

rate buildings for the treatment of the rich, and also whether the greatly increased cost of the maintenance of hospitals of the mixed type did not overbalance the profits arising from the care of pay patients. This latter view was held by Dr. Noble.

Regarding the proper training of nurses and the relation of the nurse to the medical profession, Dr. Noble believed that the present tendency on the part of the training schools of hospitals to require nurses to remain in training longer than two years was a mistake. He emphasized the importance of the passage of a State law regulating the status of nurses and called attention to the fact that an attempt to pass such a law would be made in the next legislature. It was all important, therefore, that the profession should consider the subject and formulate its views for presentation to the next legislature.

His personal investigation in hospitalism had led to the discovery of certain sources of infection previously unappreciated. Among the important factors considered were the necessity of seggregating septic patients and providing them with separate nurses, and of efficient regulations for the disinfection of nurses' hands and for the disinfection of all apparatus employed by nurses. Regarding the maintenance of an aseptic technique on the part of nurses, which could be taught by the head nurse and learned accurately by pupil nurses, Dr. Noble had, with the assistance of the medical staff at the Kensington Hospital for Women and with the suggestions and criticisms of three different head nurses, compiled a technique which had been used with great satisfaction and been proved to be a great improvement upon methods heretofore in use.

Dr. Wharton Sinkler referred to the growing tendency to overeducate nurses in medical matters, and thought instruction suitable for second year medical students productive of bad results in nursing. An important disadvantage of the lengthened term of training was to make the nurse value her services so highly that none but the wealthy classes could employ her. The lengthening of the course to three years he thought an important objection to the new registration act to be introduced into the next legislature.

Dr. John K. Mitchell thought a nurse capable of being trained would acquire that training in two years and that longer time spent in the school tended rather to unfit them for originality of thought and action.

Dr. William M. L. Coplin referred to the New York system operative in nurse training schools, which he thought an advance upon that in Philadelphia. Personally, he regarded a two year course as quite adequate. The giving of elaborate lectures on medical subjects, he thought, led the nurse to assume much more knowledge than she actually possessed. He referred also to the short term training schools, pointing out the menace they were to the public and the demand necessitated by them for some system of registration and examination or control of the nurse training school.

Dr. Walter G. Elmer questioned whether shortening of the three year course to two years would work out satisfactorily in practice, and pointed out the dependence necessarily placed upon the nurse in the absence of the physician. She should be expected to recognize certain conditions not seen by the physician during the short visit and prone to develop during the day. Some degree of medical training he felt was advisable. One of the greatest difficulties presented by the shorter term of training was in the operating room work. Here serious mistakes might occur because of the nurse being in a position for which she had not been properly trained.

The Making of a Museum of Applied Anatomy.—Dr. Gwilym G. Davis discussed the use of specially made preparations in the teaching of applied anatomy, both in the form of wet preparations for class demonstrations and those to be preserved in a museum. Such preparations were illustrative of the normal topography of a part and of the affections to which it was subject. As examples of the former were mentioned the triangles of the neck, the thoracic and abdominal viscera, Scarpa's triangle, the popliteal space, and frozen sections; of the latter, joint preparations injected with wax to show their weak points and skull perforations for cerebral localization. Special preparations were those illustrative of operations, fractures, dislocations, and hernias. The method of making the preparation was by the use of formaldehyde and freezing for making sections, also by making ordinary dissections and afterward hardening them. The methods of preparing various specimens illustrative of different conditions, such as fractures, luxations, and abscesses, were given, and the methods of preservation were illustrated by specimens. Specimens for demonstration were kept in a modified No. 1 Kaiserling solution. This was made up with acetate of potassium and glycerin with some carbolic acid and less formalin. Museum preparations were preserved in flat porcelain basins and covered with alcohol. The manner of mounting and preserving these was discussed at length.

Adams-Stokes Disease.—Dr. Thomas G. Ashton, Dr. George W. Norris and Dr. R. S. Lavensen reported a case of Adams-Stokes disease which before death exhibited all the cardinal symptoms of the condition. They had been able, by means of tracings taken coincidently from the apex beat, the radial artery, and the jugular vein, to prove that the auricles contracted more frequently than the ventricles—that there was in fact a condition of complete heart block. The autopsy revealed a mass infiltrating the auriculoventricular bundle, which upon microscopical examination proved to be a gumma that completely cut off the muscular fibres in the bundle of His. The pathology of Adams-Stokes disease was thus put upon a definite organic basis. The paper also reviewed a considerable amount of the recent literature on the subject and discussed it.

Book Notices.

A Manual of Pharmacology. By Walter E. Dixon, M. A., Cantab., M. D., B. S., B. Sc. Lond., D. P. H., Camb., etc., Assistant to the Downing Professor of Medicine in the University of Cambridge, and Examiner in Pharmacology in the Universities of Cambridge and Glasgow. Illustrated. London: Edwin Arnold, 1906. Pp. xii-451.

Experimental methods are forging their way in all branches of science, and are yielding good harvest in medicine in particular. Pharmacology is one of the youngest of the experimental sciences, and it is only within comparatively recent years that exact physiological technique has made it possible to create a branch of medicine that is so fundamental for a correct understanding of our knowedge of drug action. Experimental pharmacology still labors under a disadvantage, in that it is of necessity largely a comparative science, dealing with facts obtained in the study of lower animals than man; but this is no real bar, since direct observation of man is so widely used for corroborative evidence.

The volume under consideration is a short guide to the facts of this new branch of science. It does not suffer, however, in comparison with many larger works in the same field, inasmuch as its subject matter is systematically arranged. The author has cut away entirely from the older compilations, and presents us with an original volume rich in personal observation and poor in legendary lore. A subject so difficult to handle by the objective method is remarkably well illustrated by numerous charts and curves, the inter-

pretation of many of which, however, is not without some sense of confusion. The book is a safe and useful small guide to the teachings of modern pharmacology.

Retinoscopy (or Shadow Test) in the Determination of Refraction at One Metre Distance, with the Plane Mirror. By JAMES THORINGTON, A. M., M. D., Author of *Refraction and How to Refract,* Professor of Diseases of the Eye in the Philadelphia Polyclinic and College for Graduates in Medicine, etc. Fifth Edition, Revised and Enlarged. Fifty-four Illustrations, Ten of Which Are Colored. Philadelphia: P. Blakiston's Son & Co., 1907. Pp. xiv-67.

It is difficult to add anything to the words of praise with which the successive editions of this deservedly popular work have been greeted. It is brief but complete, clear and strong in style, accurate, exactly suited to the needs of the specialist and of his student. In this edition the author states that every page has been carefully revised, and descriptions and illustrations of new instruments, including the electric retinoscope, have been incorporated to bring the work up to date.

It has been the observation of the reviewer that attempts are frequently made to use the retinoscope when the ciliary muscle of the eye to be examined is still active, and he would like to call attention again to the following sentence, italicized by the author: *"The patient must have his accommodation thoroughly relaxed with a reliable cycloplegic."*

Lehrbuch der organischen Chemie für Mediciner. Von Dr. Chem. et Med. G. v. BUNGE, Professor in Basel. Leipzig: Johann Ambrosius Barth, 1906. Pp. 274. (Price, 7 marks.)

The extraordinary restlessness and fertility in medical research have shown themselves in no field with more striking results than in that of organic chemistry. So varied have been the activities and so wide and deep the investigations that no one set of students can grasp the work of others, and even specialists in the separate fields are unable to grasp the general results in an adequate and satisfactory manner. The needs of physiology, pathology, pharmacology, and hygiene have each and all had a share in providing the inciting motives to this phenomenal rush for the hidden secrets of Nature, and in all this mass of facts the young student of medicine, unassisted, can hardly pick his way. With the help, however, of a work of this kind, written by one wno knows the needs of students and recognizes the more desirable openings that research has made for the solution of the larger problems of the future, the medical student may take up the study of organic chemistry with a feeling of security.

The author's thirty years' experience as a teacher has led him to the conclusion that the greater number of textbooks in organic chemistry either aim too high or are too elementary. In giving his lectures the permanent form which they take in this work Dr. von Bunge expresses the hope that they may prove the happy medium toward which the scientific teacher strives. We are in hearty agreement with Dr. von Bunge, and take pleasure in saying that we have found his textbook one of the most interesting and important of the newer works in organic chemistry.

BOOKS, PAMPHLETS, ETC., RECEIVED.

Toxicology. The Nature, Effects, and Detection of Poisons, with the Diagnosis and Treatment of Poisoning. By Cassius M. Riley, M. D., Professor of Chemistry and Toxicology in Barnes University and Dean of Barnes College of Pharmacy. Third Edition. Revised and Enlarged. Philadelphia: P. Blakiston's Son & Co., 1906.

A Textbook of Elementary Analytical Chemistry, Qualitative and Volumetric. By John H. Long, M. S., Sc. D., Professor of Chemistry and Director of the Chemical Laboratories in the Northwestern University Medical School. Third Edition. Revised and Enlarged. Philadelphia: P. Blakiston's Son & Co., 1906.

The Treatment of Syphilis. By Alfred Fournier, Professor at the Faculty of Medicine, etc. English Translation of the second edition (Revised and Enlarged). By C. F. Marshall, M. D., F. R. C. S., Late Assistant Surgeon to the Hospital for Diseases of the Skin, Blackfriars, London. New York: Rebman Company, 1906.

Remèdes de bonne femme. Par les Docteurs Cabanes et Barraud. Paris: A. Maloine, 1907.

Ueber ein zuverlässiges Heilverfahren bei der asiatischen Cholera sowie bei schweren infektiösen Brechdurchfällen und über die Bedeutung des Bolus (Kaolins) bei der Behandlung gewisser Bakterienkrankheiten. Von Dr. Julius Stumpf, Kgl. Landgerichtsarzt und a.o. Universitätsprofessor für gerichtliche Medizin in Würzburg. Würzburg: A. Stuber (Curt Kabitsch), 1906. Pp. 62.

Elementary Manual of Regional Topographical Dermatology. By R. Sabouraud, Director of the City of Paris Dermatological Laboratory, St. Louis Hospital. English Translation by C. F. Marshall, Late Assistant Surgeon to the Hospital for Diseases of the Skin, Blackfriars, London. New York: Rebman Company, 1906.

The Schott Methods of the Treatment of Chronic Diseases of the Heart, with an Account of the Nauheim Baths and of the Therapeutic Exercises. By W. Bezley Thorne, M. D., M. R. C. P. Fifth Edition. Philadelphia: P. Blakiston's Son & Co., 1906.

Le Malade et le médecin. Dr. Doyen. Paris: Librairie universelle, 1906.

Miscellany.

Distillation of Metals.—H. Moissan (*Comptes Rendus,* March 19, 1906) has found that all metals may be liquefied and distilled. The iron family require very heavy currents in the electric furnace, but even tungsten and molybdenum may be regularly distilled. Boron and carbon, on the other hand, pass direct from the solid to the gaseous state. Brought to the temperature at which carbon evaporates, titanium is liquefied. The author has distilled seventeen grammes of titanium in six minutes. A difficulty lies in the avidity with which titanium combines with nitrogen. The author draws some conclusions with regard to the temperature of the sun, which is known to contain titanium. On account of the large amount of heat radiated by the sun, it appears probable that it contains some solid matter as well as gaseous matter. At atmospheric pressure no solid matter can exist at temperatures superior to that of the electric arc—*i. e.,* 3,500°. Under the pressures available within the body of the sun there will be much solidification, so that bodies can remain solid at temperatures higher than that of the arc. It follows that the temperature may be higher, and that at the surface of the sun it may amount to the 6,590° given by Wilson.—Through the *Archives of the Röntgen Ray.*

Errors in the National Formulary.—In the current issue of *Merck's Report,* remarks the *American Druggist and Pharmaceutical Record* in its issue of September 10, 1906, there is a review notice of the *National Formulary* which is remarkable for the number of errors which are noted by the reviewer, who, we think, has rendered a signal service to the users of this work. In our own discussion of the *National Formulary* we made no attempt to single out inaccuracies, but that they exist in plenty is plainly demonstrated by our contemporary, which instances the following list:

Page 4, under Aqua Sedativa, read Spirit of Camphor, 3 fluid*drachms* instead of 3 fluid*ounces*.

Page 4, under Balsamum Traumaticum, the equivalent of 35 Gm. is given at 1 troy oz., while elsewhere (pp. 8, 10, 14, 17, etc.) it is given as 512 grn. Neither can be correct, as, if 1 Gm. = 15 grn., 35 Gm. = 525 grn.; or if 1 Gm. = 15.43, then 35 Gm. = 540 grn; or if 1 Gm. = 16 grn., then 35 Gm. = 560 grn.

Page 12, under Elixir Bismuthi, read 4 Cc. represent 0.13 Gm. Bismuth and Sodium *Tartrate,* instead of . . . Bismuth and Sodium Citrate.

Page 20, under Elixir Cocæ, read Alcohol 2 fluidounces, instead of 1 fluidounce.

Page 35, under Elix. Picis Comp., read Alcohol, *12* fluidrachms instead of 6 fluidrachms.

Page 56, under Fluidextracta, in the 9th line of the paragraph, insert a period after 456, to make it read 456.392, instead of 456392.

Page 87, 3d line of the text, read *3.5 per cent.*, instead of 35 per cent.

Page 104, under Mist. Adstringens et Escharotica, read *zinc* instead of zince.

Page 110, under Mist. Guaiaci, read Acacia in fine powder, *216* grn., instead of 150 grn.

Page 118, under Pasta Ichthyoli Unna, read Ammonium instead of Ammonium.

Page 162, under Syrupus Mannæ, read Sugar *24¾* troy oz., instead of 23½ troy oz.

Page 163, under Syr. Morphinæ Comp., read Fluidextract of Senega *3⅛* fluidounces instead of 3 fluidounces.

Page 170, under Syr. Stillingiæ Comp., read Comp. Fluidextract of Stillingia, *8* fluidounces, instead of 4 fluidounces.

Page 195, under Vinum Pepsini, read Sherry Wine *21* fluidounces instead of 23 fluidounces.

Page 199, in the fourth line, make the word "preparation" read "preparations."

Page 202, under Ceratum Extracti Cantharidis, the alternative quantities would much better have been simplified to read 6, 3, 7, and 7, troy oz., respectively, instead of 9⅝, 4⅞, 11¼, and 11¼, troy oz., as at present; the result would be 20 troy oz. of cerate, instead of 32¼ troy oz., as at present.

Page 205, under Empl. Asafoetidæ, read Galbanum *231* grn., and Yellow Wax *231* grn., instead of 75 grn. of each.

Page 206, under Empl. Picis Burgundicæ, read Burgundy Pitch *32* troy oz., instead of 24 troy oz.; furthermore, the total quantity as now mentioned, 30 troy oz. is incorrect, because even using 24 troy oz. of Burgundy pitch, the total tots up *32* troy oz. The *correct* total should read *40* troy oz.

Page 207, under Empl. Picis Cantharidatum, it were better to read Cantharides cerate, 2 troy oz., and Burgundy pitch to make *30* troy oz. The "o" in the word "troy" is also lacking in the 3d line from the bottom of the paragraph.

Page 207, under Emplastrum Resinæ, if yellow wax 60 Gm. equal 2 troy oz., the quantities of resin and lead plaster should be 4⅔ troy oz. and 26⅔ troy oz., respectively, with 33⅓ troy oz. as the total result.

Page 219, under Lin. Sinapis Comp., read 6¼ fluidounces instead of 6½ fluidounces.

Page 230, under Syr. Ferri Brimidi, read Bromine, *1,140* grn., instead of 1,122 grn.

Page 242, 1st column, in Glycerogelatinum Zinci Dura, make the last word *Durum;* in the 2d column, after Pasta Ichthyoli, add *Unna.*

This list, of course, cannot be exhaustive, but it illustrates the ease with which errors can slip into any publication. After the Oxford revision of the Bible had been revised scores of times and published, a reward was offered for the detection of typographical errors and promptly claimed, despite the fact that the editorial revision had been the closest ever applied to any publication. It would be well, in our opinion, for users of the *National Formulary* to make the corrections noted above in their copies of the work.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending November 30, 1906:

Smallpox—United States.

Places.	Date.	Cases.	Deaths.
Georgia—Augusta	Nov. 13-19	9	
Illinois—Galesburg	Nov. 11-17	16	
Indiana—South Bend	Nov. 11-17	6	
Missouri—St. Louis	Nov. 11-17	1	
Louisiana—New Orleans	Nov. 11-17	4	
New York—New York	Nov. 11-17	1	
North Carolina—Greensboro	Nov. 11-17	3	
Oregon—State	Oct. 1-31	7	
South Carolina—Greenville	Nov. 11-17	1	
Utah—State	Oct. 1-31	33	
Wisconsin—Appleton	Nov. 11-17	1	
Wisconsin—Milwaukee	Nov. 11-17	2	

Smallpox—Foreign.

Africa—Cape Town	Oct. 7-13	4	
Austria—Bohemia	Oct. 12-18	8	
Austria—Bukowina	Sept. 30-Oct. 6	1	
Austria—Galicia	Sept. 30-Oct. 20	28	
Brazil—Bahia	Oct. 7-27	15	1
Brazil—Rio de Janeiro	Oct. 15-21	4	
Chile—Antofagasta	Oct. 14-24	5	
Chile—Coquimbo	Oct. 11-21	27	2
Egypt—General	June 4-July 1	14	20
Great Britain—Manchester	Oct. 27-Nov. 3	3	
India—Calcutta	Oct. 14-20		1
India—Madras	Oct. 6-26		1
Italy—General	Nov. 2-8	3	
Peru—Lima	Oct. 21-27		Present.
Russia—Moscow	Oct. 21-27	3	1
Russia—Odessa	Oct. 15-Nov. 3	16	2
Russia—St. Petersburg	Oct. 14-27	6	1
Spain—Barcelona	Nov. 1-10		8
Spain—Cadiz	Oct. 1-31		6
Uruguay—Montevideo	Aug. 1-31		2

Yellow Fever—Foreign.

Cuba—Habana	Nov. 21-27	7	2
Cuba — Santa Clara Province, Rodas	Nov. 18-25	1	
Mexico—Vera Cruz	Nov. 11-14	1	1

Cholera—Insular.

Philippine Islands—Manila	Sept. 29-Oct. 13	16	15
Philippine Islands—Provinces	Sept. 29-Oct. 13	348	248

Cholera—Foreign.

China—Hankow	Oct. 8-14		24
China—Shanghai	Oct. 8-14		25
India—Bombay	Oct. 24-30		4
India—Calcutta	Oct. 14-20		34
India—Madras	Oct. 20-26		2
India—Rangoon	Oct. 4-20		1

Plague—Foreign.

Australia—Sydney	Oct. 1	1	
Austria—Trieste	Nov. 8		1
Brazil—Bahia	Oct. 14-27	4	2
Brazil—Rio de Janeiro	Oct. 15-21	19	4
Egypt—Alexandria	Oct. 22-28	3	2
Egypt—Minieh Province	Oct. 26-28	5	
Egypt—Garbieh Province, Tanta	Oct. 22-28	1	
Egypt—Port Said	Oct. 22-28	1	1
Egypt—Suez	Oct. 22-28	2	1
India—General	Oct. 14-20	6,278	4,760
India—Bombay	Oct. 24-30		27
India—Rangoon	Oct. 16-20		27
India—Calcutta	Oct. 14-20		7

Public Health and Marine Hospital Service:

List of Changes of Station and Duties of Commissioned and Noncommissioned Officers of the Public Health and Marine Hospital Service, for the seven days ending November 28, 1906:

BLUE, RUPERT, Passed Assistant Surgeon. Granted leave of absence for five days, from December 1, 1906.

BOGGESS, J. S., Assistant Surgeon. Directed to report to board of officers convened to meet at Ellis Island, N. Y., December 10, 1906, for examination for promotion to grade of Passed Assistant Surgeon.

GOLDSBOROUGH, B. W., Acting Assistant Surgeon. Granted leave of absence for eight days, beginning December 1, 1906.

HALL, L. P., Pharmacist. Granted leave of absence for seven days, from November 21, 1906, under Paragraph 210 of the Regulations.

HUME, LEA, Acting Assistant Surgeon. Granted leave of absence for one month, from November 27, 1906.

MCCOY, G. W., Passed Assistant Surgeon. Directed to report to Director of Hygienic Laboratory for temporary duty.

MULLAN, E. H., Assistant Surgeon. Relieved from duty at Ellis Island, N. Y., and directed to proceed to Perth Amboy, N. J., for instructions relative to quarantine duties at that port.

RICHARDSON, S. W., Pharmacist. Relieved from duty at Vineyard Haven, Mass., and directed to proceed to Buffalo, N. Y., for duty.

SMITH, F. C., Assistant Surgeon. Relieved from duty at Perth Amboy, N. J., and directed to proceed to Fort Stanton, N. M., for duty and assignment to quarters, after Assistant Surgeon R. H. Mullan has familiarized himself with the Service at Perth Amboy.

TARBELL, B. C., Acting Assistant Surgeon. Granted leave of absence for twenty days, from December 1, 1906.

VON EZDORF, R. H., Passed Assistant Surgeon. Leave of absence for fourteen days, from November 21, amended so as to be effective November 22, 1906.

WERTENBAKER, C. P., Surgeon. Granted leave of absence for three months, from December 1, 1906.

Board Convened.

A board of medical officers was convened to meet at Ellis Island, N. Y., on December 10, 1906, for the purpose of examining Assistant Surgeon J. S. Boggess to determine his fitness for promotion to the grade of Passed Assistant Surgeon. Detail for the board, Surgeon P. H. Bailhache, Chairman; Surgeon G. W. Stoner; Passed Assistant Surgeon John McMullen, Recorder.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, for the week ending December 1, 1906:

ALLEN, IRA A., Contract Surgeon. Granted sick leave of absence for one month.

ASHBURN, JAMES K., Contract Surgeon. Granted an extension of one month to his leave of absence.

COWPER, H. W., First Lieutenant and Assistant Surgeon. Left Havana, Cuba, November 27, 1906, *en route* to Army General Hospital, Washington Barracks, D. C., for treatment.

DAVIS, OSCAR F., Contract Surgeon. Left Fort Des Moines, Iowa, on leave of absence for three months.

GREGORY, J. C., First Lieutenant and Assistant Surgeon. Ordered to proceed from San Francisco, Cal., to Presidio of Monterey, Cal., for temporary duty.

HUTSON, T. OGIER, Contract Surgeon. Ordered from Fort McPherson, Ga., to Fort Moultrie, S. C., for temporary duty.

MORRIS, SAMUEL J., First Lieutenant and Assistant Surgeon. Granted six days' leave of absence, to take effect about November 24, 1906.

REAGLES, JAMES, Contract Surgeon. Left Fort Keogh, Mont., and arrived at Fort Ontario, N. Y., for duty.

SKINNER, GEORGE A., First Lieutenant and Assistant Surgeon. Relieved from temporary duty at Fort Snelling, Minnesota, and to return to Fort William H. Harrison, Mont.

SLATER, ERNEST F., Contract Surgeon. Returned from Fort Hancock, N. J., from leave of absence.

STUCKEY, HARRISON W., Contract Surgeon. Returned from Fort Snelling, Minn., from leave of absence.

TRUBY, ALBERT E., Captain and Assistant Surgeon. Having reported arrival at Newport News, Va., from duty in Cuba, will report in person to Surgeon General of the Army, for consultation, and upon completion thereof will proceed to join his station, Presidio of San Francisco, Cal.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending December 1, 1906:

BLACKWELL, E. M., Passed Assistant Surgeon. Detached from duty at the Naval Hospital, San Juan, Puerto Rico, and ordered home to await orders.

FURLONG, F. M., Surgeon. Detailed for special temporary duty during the preliminary trial of the United States Steamship *Vermont.*

HIGGINS, S. L., Assistant Surgeon. Appointed Assistant Surgeon in the Navy, from November 12, 1906.

LUMSDEN, G. P., Surgeon. To report to the president of the Naval Medical Examining Board, Washington, D. C., for examination preliminary to promotion, on December 4, 1906, and when discharged by the board to await orders.

MINK, O. J., Assistant Surgeon. Discharged from treatment at the Naval Hospital, Yokohama, Japan, to return home.

NEILSON, J. L., Passed Assistant Surgeon. Assigned to temporary duty at the Naval Torpedo Station, Newport, R. I.

PAGE, J. E., Surgeon. Detached from duty at the Naval Hospital, Norfolk, Va., and assigned to duty on the United States Steamship *Milwaukee.*

WEBB, U. R., Passed Assistant Surgeon. Detached from duty at the Naval Hospital, Newport, R. I., and assigned to duty at the Naval Hospital, San Juan, Puerto Rico, as the relief of Passed Assistant Surgeon E. M. Blackwell.

Births, Marriages, and Deaths.

Born.

ULMAN.—In Philadelphia, on Saturday, November 24th, to Dr. and Mrs. Joseph F. Ulman, a daughter.

Married.

BANNERMAN—DURKIN.—In Somerville, Massachusetts, on Tuesday, November 27th, Dr. Walter Bruce Bannerman, of East Bridgewater, and Miss Anna MacKasson Durkin.

FRANCIS—WORMLEY.—In Washington, D. C., on Wednesday, November 21st, Dr. John R. Francis and Miss Alice K. Wormley.

OSGOOD—DAVIS.—In Warner, N. Y., on Thursday, November 22nd, Dr. Walter Wadsworth Osgood and Miss Clara Adams Davis.

PYLE—POTTER.—In Philadelphia, on Wednesday, November 28th, Dr. Clarence E. Pyle and Miss Helen Grant Potter, daughter of Dr. and Mrs. William J. Potter.

RICE—KESSLER.—In Dallas, Texas, on Thursday, November 22nd, Dr. Lucien G. Rice and Miss Ruth Catharine Kessler.

SAUNDERS—JACKSON.—In Lanesville, Massachusetts, on Wednesday, November 21st, Dr. Levi Saunders and Miss Frances Alla Jackson.

STOLTZENBERG—SPEAR.—In Philadelphia, on Saturday, November 24th, Mr. Joseph H. Stoltzenberg and Miss Bertha van Covenhooven Spear, daughter of Dr. John C. Spear, Medical Director in the United States Army, and Mrs. Spear.

TEBBITT—DURLACHER.—In Laramie, Wyoming, on Tuesday, November 20th, Dr. Robert L. Tebbitt and Miss Jean Durlacher.

Died.

ATKINSON.—In Baltimore, on Saturday, November 24th, Dr. Isaac E. Atkinson, aged sixty years.

CLAIBORNE.—In Petersburg, Virginia, on Thursday, November 22nd, Dr. James W. Claiborne, aged eighty years.

COOK.—In Maysville, Kentucky, on Monday, November 26th, Dr. J. J. Cook, aged fifty-eight years.

EMERSON.—In Brooklyn, N. Y., on Monday, November 26th, Dr. Florence Greenman Emerson.

FERGUSON.—In London, England, on Tuesday, November 27th, Dr. G. B. Ferguson, former president of the British Medical Association.

FITTS.—In Charlotte, North Carolina, on Thursday, November 22nd, Dr. A. W. Fitts, aged forty-six years.

GOULD.—In New York, on Friday, November 23rd, Dr. Charles Gould.

MILLER.—In Springfield, Ohio, on Monday, November 26th, Dr. J. M. Miller.

MOORE.—In Munnsville, N. Y., on Sunday, November 19th, Dr. Spurzheim P. Moore, aged sixty-seven years.

NICOLL.—In New York, on Sunday, November 25th, Dr. Leonard Francis Nicoll.

PHILLIPS.—In Rocheport, Missouri, on Friday, November 9th, Dr. W. C. Phillips, of Kansas City, aged eighty-three years.

POTTER.—In Buffalo, on Wednesday, November 28th, Mrs. Potter, wife of Dr. William Warren Potter.

QUINN.—In Brooklyn, N. Y., on Monday, November 26th, Dr. Joseph Francis Quinn, aged forty-one years.

RAY.—In Brooklyn, N. Y., on Tuesday, November 27th, Dr. Peter W. Ray, aged eighty-two years.

REISMANN.—In Pittsburgh, Pennsylvania, on Tuesday, November 13th, Dr. Adolph Reismann, aged seventy-five years.

ROONEY.—In Nanuet, N. Y., on Saturday, November 24th, Dr. John J. Rooney.

RUST.—In Winchester, Massachusetts, on Friday, November 23rd, Dr. Charles Manning Rust, aged sixty-one years.

SCHMOELE.—In Portsmouth, Virginia, on Monday, November 19th, Dr. William Schmoele, Jr.

TANTUM.—In New York, on Monday, November 26th, Dr. Percy Linwood Tantum, son of the late Dr. John Roslyn Tantum, aged forty-five years.

WALLACE.—In Oneida, N. Y., on Wednesday, November 21st, Mrs. Mary Wallace, wife of Dr. Jason T. Wallace, aged seventy years.

WESTON.—In Bay St. Louis, Louisiana, on Thursday, November 22nd, Dr. Henry Otis Weston.

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Original Communications.

THE FAT CONTENTS OF THE TONSILS AND ITS RELATION TO THE PROCESSES OF METABOLISM AND INFECTION.

BY JONATHAN WRIGHT, M. D.

(From the Laboratory of the Manhattan Eye, Ear, and Throat Hospital.)

In attempting to identify the histological changes in the lymphoid tissue of the pharynx which are coincident with its regression in adolescence, I have run foul of a question which has for the last ten years given rise to much discussion in physiological and pathological literature. It is the question of the metabolism of proteid into fat, of fat absorption at the surface, and the utilization of it within the animal organism.

As we know fat under the microscope in tissue sections stained for it, it exists in two fairly distinct forms. One is in large splotches, always extracellular, usually seen only in the areolar tissue, showing, when the sections have been treated by some fat dissolving reagent like ether, faint outlines which are really only the periphery of spaces which held the oily matter in globules formed by surface tension. The other form is that of small spherical droplets, varying in size from that of mere visability under the highest magnification up to two or three micra. These may be either intracellular or extracellular. It is chiefly around these latter deposits that centers the interest as to the origin of fat in animal tissue.

Virchow sharply divided tissue fat into two classes as to their origin, more or less on the basis of this morphological differentiation. Indeed, admitting a common origin, it is not very clear just what makes this difference in the form of the deposits, but likely it has to do with the laws which govern the surface tension of fluids and their colloid states. It has probably more to do with the size of the particles of fat than with their origin, but the line is a pretty sharp one and the intermediate forms are rare. Virchow declared that the fat in degenerated organs was chiefly due to the breaking down of proteid cell material, and that this is the origin of the intracellular fat. Of course it has always been admitted that fat also is absorbed and stored up in the areolar tissue and the marrow of bones. On the other hand, the carbohydrates, the sugars, and starches, are converted into hydrocarbons, the fats and their allies. With these we have nothing to do here, except indirectly.

Von Recklinghausen is said to have been the first to deny that albuminous or proteid matter, that living protoplasm ever breaks down into fat, the fat droplets intracellular and extracellular being fat of foreign origin, transported from elsewhere to take the place of the broken down protoplasm of degenerated cells. In 1897, Hansemann[1] said only a few authors then spoke of fat infiltration of cells. It was supposed that all the intracellular fat was due to proteid metabolism. Now there are many who deny that any of it is so manufactured. The matter is well put under three heads. 1st. Pure infiltration of fat, which no one doubts. 2nd. Proteid fat degeneration in situ, which many absolutely deny. 3rd. Cell degeneration with fat infiltration from without, which many claim is the sole process and which more admit to be at least of occasional occurrence.

Fischler[2] in 1902 declared that "as long as the positive proof in a test tube is lacking of fat formation out of albumen so long will the hypothesis of fatty degeneration find disbelief and doubt." This statement is entirely untenable. We well know there are not only many forms of energy, but many chemical products manufactured by the living cell which it is as yet impossible for the physicist or the chemist to imitate. Still more we are very well aware that even those forms which may be imitated in the laboratory cannot be reached by the economical processes of living protoplasm.

A great deal of the uncertainty which surrounds the pathological question at least, is due to two causes. 1st. The technical procedures employed to harden and mount tissues as well as to stain them in the routine way include the use of reagents which dissolve fat, and for the demonstration of fat, histological material must be prepared in such a way that it is as a rule unsuited for the study of other details of structure. This naturally has limited the experience of microscopists with the conditions under which fat is found in the human body when the seat of disease. 2nd. Apparently there are a number of chemical forms of fat, or there are fatlike bodies which give tinctorial and chemical reactions in the experimental and histological study of the question in the most confusing way, so that the discrepancy in the testimony is exceptionally great, as we find it in the copious literature on the subject.

Our technical work in the laboratory has been very difficult, because the lymphoid material of the tonsils and adenoids lends itself badly to the freezing necessary for hardening and cutting the tissue in the Sudan III. and scharlach roth methods.

[1] Virchow's *Archiv*, cxlviii, p. 355.
[2] Virchow's *Archiv*, clxx, p. 100.

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While success has at times been attained so far as demonstrating the fat droplets in the lymphoid cells is concerned, great uncertainty has arisen as to the reliability of the stains in tissue which is often infiltrated with blood cells and their detritus. For the most part we have confined ourselves to the old osmic acid method, not unmindful of the modern criticism of it. Rosenfeld and Di Christina[3] complain that the Sudan III fails to demonstrate fat at times when the chemical reagents show its presence. Neither has the scharlach roth stain always proved satisfactory. As we have used it, it certainly occasionally stains other tissue granules. Hagemeister[4] writing in 1903 prefers the osmic acid method. Counter staining is also unsatisfactory. Closely connected with this problem of discrepancy in the testimony as to tinctorial reactions is a point broached at least as long ago as 1895 by Kaiserling[5] when he noted that a difference was to be observed in the behavior of the so called fat droplets to reagents, especially osmic acid, the latter not staining some granules within the cells so intensely as others. There was also a differentiation in the reaction of these granules to polarized light.

One, of course, must accept all such evidences with caution, because many intracellular artefacts easily arise from freezing as well as from other hardening processes necessary for sectioning. It is probable, however, that this confusion arises from the juxtaposition within the cellular colloid of visible molecular aggregates of kindred nature with fat giving slightly different reactions to tinctorial as well as to chemical substances. Whether the fat molecule enters into that of protoplasm or not, its shifting, labile nature as it exists in the human body is to be kept in mind.

Protagon, myelin, and lecithin are among the bodies, especially in the nervous system, which it is difficult to distinguish from fat, as they exist in the tissues, by ordinary reagents. This matter has been of late discussed by Löhlein.[6] Dr. Waldvogel[7] remarks that bodies soluble in ether are known from the chemical examination of the brain, which, although in the cases of protagon and jekorin they contain phosphorus, sulphur and nitrogen, and in that of lecithin phosphorus and nitrogen, nevertheless have fat like properties. These he apparently, though writing in 1904, regards as the transition stage between proteids and fat. Thereby he accounts for the discrepancy to which I have drawn attention.

I have been very much impressed with a remark made by Kyes and Sachs[8] in the course of their study of the substances which activate cobra poison. "We are inclined to believe," they say as the result of very painstaking experimentation, "that the toxic action is caused by the fatty acid radicle in the lecithin molecule," which in the stroma of blood cells acts as an endocomplement. This, perhaps, may give us some hint of the chemical process by which the protoplasm of the tissue cells disintegrate in the presence of autotoxines or substances introduced from without, as phosphorus for instance.

Now, while a meat eating animal takes more or less of fat with his food, that is not the case with the herbivora to any very great extent. Even in the omnivorous animal, such as man, most of his fat is manufactured from the carbohydrates. That which he takes in as fat and that which is made from the carbohydrates, it is urged, is the origin of the fat droplets which appear in degenerated cells, summoned there to occupy the place of proteid, crumbling away under the influence of the metabolism of cellular decay. Dogs fed on phosphorus rapidly develop fatty degeneration of the internal organs, but it has been repeatedly shown that dogs first starved until they have used up their stored fat no longer suffer from fatty degeneration, but only from degeneration or crumbling of the proteid of cells, when fed on the phosphorus. In other words these fat droplets are no longer to be found in the cell bodies. While this seems very strong evidence of the extracellular origin of fat, we have long hesitated to accept experimental testimony which is based on conditions so foreign to the usual processes as the ingestion of large quantities of phosphorus into the animal organism. It is stronger proof that proteid may disintegrate without either the formation or the immigration of fat, and with that we are to some extent familiar in the usual morbid processes.[9] In 1903 Arnold, who had previously studied the subject without arriving at such a conviction,[10] but who has written most luminously and clearly on the subject of all who have studied it, is inclined to think that fat formation from albumin is possible in pathological cases, but that it has not been proved. It has been repeatedly asserted that fat is often present in perfectly healthy cells[11] and Landois in his *Physiology of Man,* speaks of it as normally present in lymphoid cells, but even these assertions of the most careful observers cannot be unhesitatingly accepted, when it is familiar to all histologists that cells are constantly dying in all healthy organs and that it is in these, *par excellence,* where amidst the crumbling protoplasm, may be found the fat droplets. While Hester[12] declares that fat is deposited as the result of hyperæmia, being carried thither by the blood current, Hagemeister (*l. c.*) declares that hyperæmia with hyperplasia induces the disappearance of fat and he asserts that fat is present in certain hyperplasias only when they are free from evidences of degeneration, not being noted where growth is active. Hexheimer is quoted by one of the writers to whom I have referred as having said fat is present in all healthy cells, *except the spleen and the lymph nodes,* whereas we have found it constantly in the tonsil. Finally Dietrich,[13] to complete my record of confusion in the literature, as a result of implantation of tissue in animals, noted *microscopically an increase of fat* in the resulting tissue degeneration, while *chemically there was a decrease* in the fat contents of the tissue.

I have alluded to the feeding of starving dogs with phosphorus. It produces no fat in the internal

[3] Di Christina, Die chemische Veränderungen bei der fettigen Degeneration in Beziehung zu den anatomischen. Virchow's *Archiv,* clxxxi, No. 3, 1905.

[4] Virchow's *Archiv,* clxxii, p. 72.

[5] Ueber das Auftreten von Myelin in Zellen und seine Beziehung zur Fett-Metamorphose. Kaiserling und Orgle. Virchow's *Archiv,* clxvii, p. 296.

[6] Virchow's *Archiv,* clxxx, No. 1, 1905.

[7] Virchow's *Archiv,* clxxvii, 1904.

[8] *Berliner klinische Wochenschrift,* Nos. 2 and 4, 1903.

[9] Giant cells and gummata do not always contain fat.

[10] Virchow's *Archiv,* clxxi, p. 197, 1903; *ibidem,* clxiii, p. 1, 1901.

[11] Arnold, *l. c.*; Hansemann, *l. c.*

[12] Virchow's *Archiv,* clxiv, p. 203.

[13] Experimente über Fettbildung. *Verhandlungen der deutschen pathologischen Gesellschaft,* 1905.

organ cells which are degenerating. Under normal conditions, as has long been known, the feeding of phosphorus causes "fatty" degeneration. The transportation of fat under these latter conditions seems satisfactorily proved, but conversely it does not disprove the metamorphosis of proteid into fat under the conditions which obtain in ordinary disease in man. That this is possible seems quite as conclusively shown by Dietrich (*l. c.*), if he has made no error of observation. He asserts that excised pieces of tissue transplanted into animals and subsequently removed and examined show increase of fat in the cells of the part (kidney, liver,) but that control pieces, placed in the thermostat or in rubber capsules in animals, show after the same time the presence of more fat than the pieces transplanted into tissue, where the circulation might carry off some fat. The only possible conclusion we can draw from this is that the proteid of the kidney or liver cells is changed into fat. A large number of other experiments and observations have been adduced in the literature of the subject, for the most part to be found in the past ten years numbers of Virchow's Archiv,[14] but I have selected these as giving perhaps the best experimental proof of the occurrence of both processes.

With this short summary of a subject, whose recent literature is so extensive, I may turn to the series of observations I have made on the fat contents of the faucial tonsils.

For many years from time to time I had noted in the microscopical sections of lymphoid tissue removed from the nasopharynx and oropharynx spaces which I formerly regarded as ectasia of the lymph channels and reported them[15] as cysts of the lymphoid tissue. I pointed out the pathological differentiation to be made between them and the retention cysts formed by agglutination of the folds of the pharyngeal and faucial tonsils. These latter are variously known clinically as pharyngeal bursa, plugged tonsillar crypts, etc. The spaces occasionally seen in the round celled areas, having no connection with the surface or glandular epithelium, are of an entirely different nature.

Now, while in certain pathological conditions ectasia of the lymph spaces is noted in various tissues, and while Odenius[16] and others have noted the occurrence of cystic degeneration of the lymph nodes elsewhere, it is a little difficult to understand by what mechanism this occurs in the tonsils. Occasionally I see granular areas associated with a localized or general fibrous hyperplasia in the tonsils, which are due apparently neither to syphilis nor tuberculosis. Görke[17] and Serebrjakoff[18] also have written on the subject of tonsillar regression, and the latter author has noted, without defining the method of formation, the occurrence of cysts in the tonsils. A recent observation led me to conjecture[19] that some at least of these spaces in the lymphoid tissue are due to fatty degeneration and that this is one of the processes of tonsillar regression. This involved the supposition that the lymphoid cells undergo to some extent a fatty metamorphosis or a fatty infiltration during the shrinking of the tonsils in adolescence. As the report referred to contained an imperfect reproduction of a drawing made to show the presence of fat within the cavity I again insert it in this connection, whereby at a glance the presence of fat globules may be seen. (Fig. 1.) The tissue containing this cavity and a much larger one, ruptured in the removal, was taken from the nasopharynx of a young and healthy woman. The operation was accompanied by the discharge of an

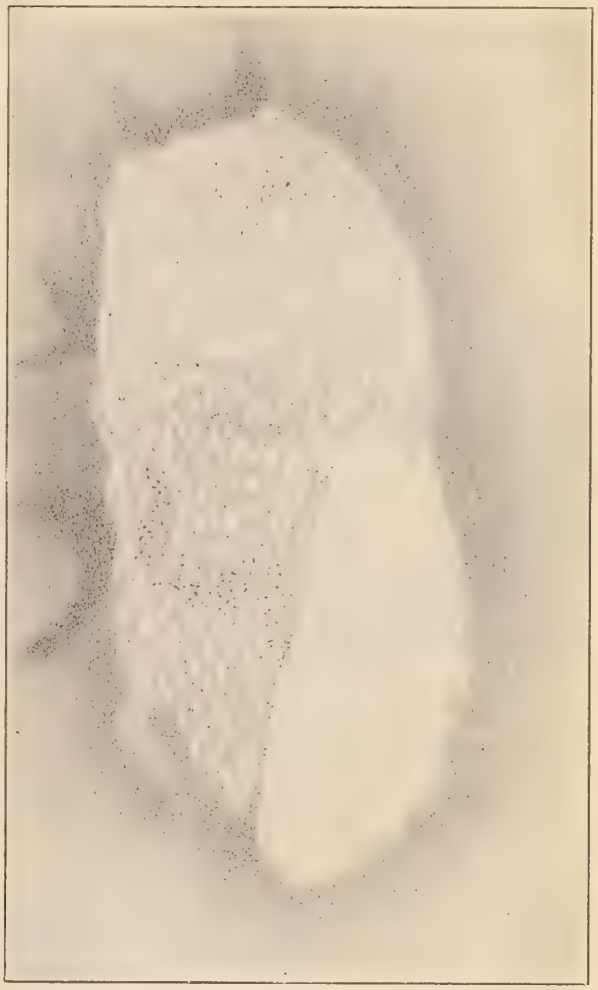

Fig. 1.—Fatty degeneration in a lymphoid hypertrophy of the nasopharynx. (Low power drawing.)

oleaginous fluid which trickled down the postpharyngeal wall. Shortly after the publication of the report of this case Dr. W. F. Chappell spoke to me, without knowing of my special interest in the matter, of having remarked on several occasions in the manipulations preliminary to the removal of faucial tonsils involving forcible pressure, that an oily fluid exuded from the tissues. This, he was sure, did not come from the rupture of an agglutinated lacuna. Having, in another article,[20] pointed out the epithelial and fibrous changes which lead to the crumbling and regression of the surface of the tonsils I naturally became very much interested in the method of the disappearance of the round cells, and I determined to examine a series of tonsils for the

[14] The only American literature dealing with the subject which has come under my notice is by Dr. Henry A. Christian, *Bulletin of Johns Hopkins Hospital*, January, 1905; Dr. Frank S. Mathews, *The Popular Science Monthly*, May, 1906.

[15] *New York Medical Journal*, December 7, 1895; *ibidem*, June, 1903

[16] Virchow's *Archiv*, clv, p. 465, 1899.

[17] *Archiv für Laryngologie*, xvi, p. 144, 1904.

[18] *Ibidem*, xviii, No. 3, 1906.

[19] *The Laryngoscope*, September, 1905.

[20] Autoclasis of the Tonsils. *The Laryngoscope*, April, 1904.

evidence of fat in them, expecting thereby to elicit some knowledge of this aspect of their regression. In this latter hope I have been disappointed. Owing to the facts elicited and a review of the general subject of fat metabolism which I have sketched in what has preceded it is plain that the presence of fat in the cells is no sign of the retrogression of tonsillar tissue. Nevertheless the observations have had a great interest for me in other respects and may be of value to other workers.

It so happened that about the time we began in the laboratory the routine examination of excised tonsils for fat, Dr. J. J. Thompson, of the clinical staff, had under observation the case of a man of twenty-six, who had a history of a chancre six years ago. He had been treated for two years and had had no subsequent return of his trouble. A white area was seen on one tonsil which was supposed to

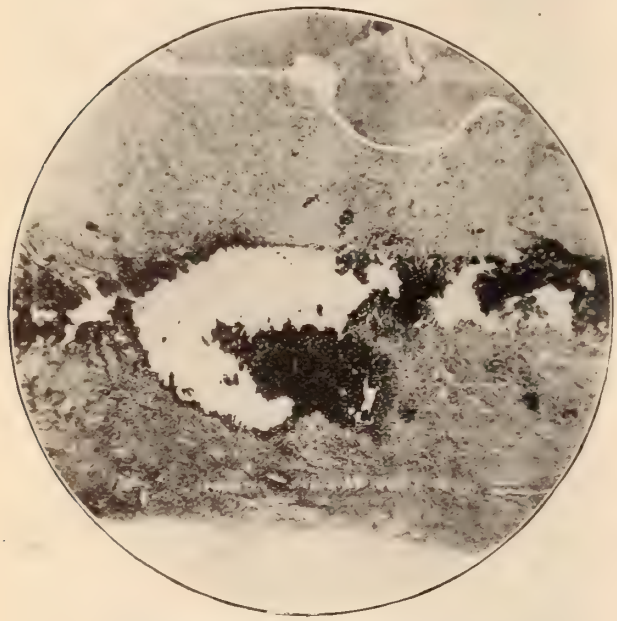

FIG. 2.—Photomicrograph under low power of osmic acid section of a faucial tonsil, showing area of "fatty degeneration." (Kindness of Dr. Oatman.)

be a gumma. It was opened and an oily fluid escaped. Some cheesy matter was also observed. The lesion promptly healed without medication and with no resulting cicatrization. At the time of the evacuation of the fluid a piece was excised from the walls of the cavity and hardened in osmic acid. Sections under the low power showed a picture reproduced in Fig. 2 by microphotography. It is evident from this appearance and from this history that we have a cavity here formed by the metamorphosis of the lymphoid cells into fat, or their granular degeneration and replacement by fatty matter. In the case represented in Fig. 1, there was no history of syphilis, yet evidently the same condition obtained. Microscopically there was no other appearance ascribable to syphilis in either case, and healing in both cases was prompt without antisyphilitic treatment, yet it is a question if these may not both have been due to latent systemic syphilis. At any rate it was a degeneration of the proteid of lymphoid cells with its metamorphosis or the transportation of a very large amount of oily material.

In this case of Dr. Thompson's, the sections hardened in osmic acid showed a small cavity just visible to the naked eye, evidently another focus of softening similar to the larger one noted in the clinical history. As seen in Fig. 2, the walls are blackened by the stained fat contents of the cells and a large amount of this detritus remains in the cavity. Clumps and acicular masses of fat are seen everywhere throughout the tissue. Most of it is extracellular evidently because the cell outlines have entirely disappeared, but where the process is less advanced small droplets are abundant in the cell bodies, although much more so in the recognizable detritus of disorganized cell bodies. There are some areas, however, where there is apparent cell death but no fat, either extracellular or intracellular. Whether this was due to syphilis or not it is a metabolism, greatly exaggerated, it is true, of the same kind, so far as the location and relative distribution of the fat droplets are concerned, as is constantly going forward in all tonsils. The syphilitic lysis of these lymphoid cells is simply more destructive than the autolysis going on in tissue in the process of physiological wear and tear and the adaptation of the tissue to its environment, internal and external. It points to the identity of the process set up by a foreign and a domestic toxine, perhaps through the agency of an endocomplement such as lecithin, as I have suggested before in referring to the work of Kyes and Sachs.

In the series of cases in which excised tonsils were examined for their fat contents no selection of cases was resorted to. Ten or twelve cases were taken as they came in the routine of my clinic, and the excised tonsils (both sides) were immediately put in osmic acid solutions or subjected to the process necessary for staining with Sudan III and scharlach roth, viz.: Short preliminary hardening in formalin and subsequent freezing for sectioning. The latter process was unsatisfactory, and for the most part the observations were made on the osmic acid specimens.

Invariably a short search of every section, with 1-12 O. Im., revealed fat droplets in the cells as well as in the intracellular spaces both of the stroma and of the lymphoid tissue. How long after a meal or what the last meal consisted of, was unfortunately not ascertained. For the most part the operation was performed about 2.30 p. m. The cases were children of both sexes; the results were practically uniform. Constant as were these droplets, they were not abundant in any one microscopical field, and in some were entirely absent. Very few clumps or acicular masses were found, but when found they were almost exclusively noted as in the interfollicular connective tissue. The small droplets were seen most frequently in the isolated disintegrated cell bodies, but also in cell bodies apparently healthy. Singular to say, they were markedly less frequent in and in the neighborhood of the surface epithelium, except near a plugged crypt, containing a large amount of fat in its detritus. In keratosis of the surface epithelium, which I am accustomed to regard as a hyaline degeneration, fat droplets were no more frequently seen than elsewhere. Some areas, otherwise indistinguishable, of the lymphoid structure were markedly more thickly sprinkled with the black spots, intracellular and extracellular, than others. The cause of this was not apparent. The arteriole walls in all their coats exhibited them with

more or less regularity but without significant frequency. Fig. 3 shows fairly well the distribution in an average field in which they are noted.

Mention has been made of the fact that some of the plugged crypts showed among the detritus a large amount of fat, both in the form of many fine droplets and of a few acicular masses. It could not be determined in what cellular constituents of the lacunar contents either form had its origin. The exceptional number of droplets in the lymphoid cells around such a crypt suggested the probability of its absorption from the dead tissue within the crypt, but its origin in the latter locality is far from clear, as I have no data upon which to gauge the amount of fat which might have lodged there from the food before the mouth of the crypt became occluded, or which might have been absorbed from the surface. I am free to say the appearance here is that of a metamorphosis of proteid into fat; yet many fragments of cells could be made out containing no fat.

Indeed thus far I was impressed with the idea

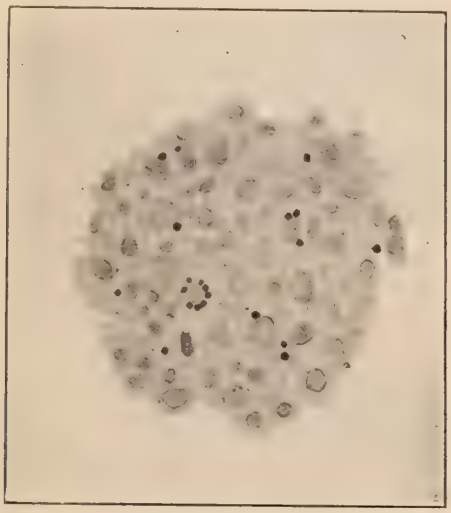

FIG. 3.—Showing distribution of fat droplets in an osmic acid section of the faucial tonsil, O. im. 1-12.

that proteid may, when it disintegrates, change into fat or it may not. It certainly is more frequently though not invariably, found in disintegrating cellular protoplasm than in morphologically intact protoplasm. I put no great stress upon the fact, observed also by others, that the intracellular droplets stained with the osmic acid usually are paler than the extracellular droplets. In the deeper areolar planes and to a less extent in the fibrous framework of the tonsil, the large globular masses or "splotches" of fat were met with, but never in the lymph nodes themselves, except in the two cases represented in Figs. 1 and 2. After becoming familiar with the appearance of fat in the tonsils under ordinary conditions, a series of ten cases or more were taken as before, without selection, from the routine of the clinic. In these one or both tonsils were smeared with butter ten or fifteen minutes before a tonsillotomy. In these cases the distribution of the fat was relatively exactly the same as in the other cases, but the increase in amount was everywhere very decided. It was especially more abundant in the granular protoplasm of cells that were disintegrating. No doubt could be left in the mind of the observer that fat in the form of droplets may migrate into degenerating as well as into normal cells. It is natural, therefore, to conclude that some at least of the intracellular fat is normally derived from the passing food, but I am unable to assert that it all comes from this source. While perhaps it might be thought there was a larger amount of extracellular droplets in the buttered tonsils, there was the same tendency to grouping around the nuclei of degenerated cells. There was no greater amount of fat in or just beneath the surface epithelium, but on the surface such fat as existed was invariably in the form of minute droplets. It had been immediately saponified or emulsified, and this was a preliminary to absorption.

Evidently the rapidity of the absorption of fat by the tonsillar epithelium is greater even than that of dust.[21] We must accustom ourselves to the conception of the surface cells not as horny surfaces, but as of semi-fluid colloid stuff on which the sprinkled dust acts as it does on water. Oil sprayed on water meets with well known resistance. So for a longer or shorter time does dry dust. For a time surface tension is sufficient to overcome gravitation. A little agitation is necessary to cause the heavier dust, if insoluble, to sink to the bottom or to make an emulsion of the oil, which subsequently arises again to the top. But this is surely not the exact process with the colloid surface. Currents are in continual motion, and the inert dust and oil are promptly carried beneath the surface, where as we have seen they are readily recognized. Not so with bacteria, many of which are about the size of the oil droplets. What modification of electric forces causes this differentiation in the action of the two colloids (cell and bacterium) from the action between oil and colloid?

44 WEST FORTY-NINTH STREET.

THE NEW BUILDING OF THE WOMAN'S HOSPITAL OF THE STATE OF NEW YORK. SOME OF THE SPECIAL FEATURES OF ITS CONSTRUCTION.*

BY LEROY BROUN, M. D.

The present building, opened for the admission of patients on December fifth, 1906, is located on the Morningside Heights in One Hundred and Tenth Street, opposite the Cathedral of St. John the Divine. It is of the French renaissance style of the period of Francis I. In the erection and planning of this building every effort has been made to produce a hospital embodying the best elements of construction and hospital advancement. The architects, Messrs. Allen & Collins, of Boston, together with the builders, have succeeded in producing a structure amply fulfilling the expectations of those interested, and an ornament to the site selected. (See Fig. 1.)

Under the present internal arrangements of sheltering the entire hospital staff within the one building, the capacity for patients is about 125 beds. If the occasion should demand, this capacity can be largely increased by the removal of the nurses and help to other quarters.

[21] The Difference in the Behavior of Dust and that of Bacteria in the Tonsillar Crypts. *New York Medical Journal*, January 6, 1906.

* Presented before the Obstetrical Section of the New York Academy of Medicine, October 25, 1906.

The construction of the building is as fireproof as can be made.

SANITARY AND HYGIENIC FEATURES.

Floors.—This is a subject occupying the serious attention of all concerned with hospitals. The marble or tile floor is from a practical standpoint too hard to the tread, as it is also too cold. A floor of this character not only fatigues those standing on it constantly, but has the disadvantage of presenting many seams and joints of cement for the absorption of discharges and solutions. The wooden floor, aside from not being fireproof, has also the disadvantage of many joints and difficulty of cleaning thoroughly. The floor adopted in this building and used almost entirely throughout is what is known as a "laid floor," being applied to the underlying concrete in soft condition and moulded to various parts at will. It is made up, first, of magnesium oxide, second, fine sawdust, asbestos, silicate glass, sand, and coloring matter, and, third, magnesium chloride. The increasing or lessening of the proportions of fine sawdust, asbestos, silicate glass, and sand gives a floor that is neither hard nor springy to the tread. After being laid and allowed to set, the floors are given two coats of oil. This floor has been applied throughout the hospital with some slight exceptions, and gives every evidence, after being down for a year, of giving entire satisfaction. Its essentials are: Its warmth, and ease of tread; also being nonabsorbent; and lastly that of having no joints and that of not being slippery.

FIG. 1.—The new building of the Woman's Hospital, situated between Amsterdam and Columbus avenues on One Hundred and Tenth streets.

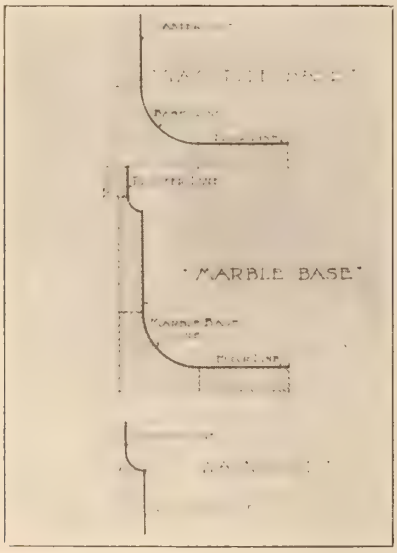

FIG. 2.—Showing continuous whole of floor and side walls, with absence of joints and sharp angles.

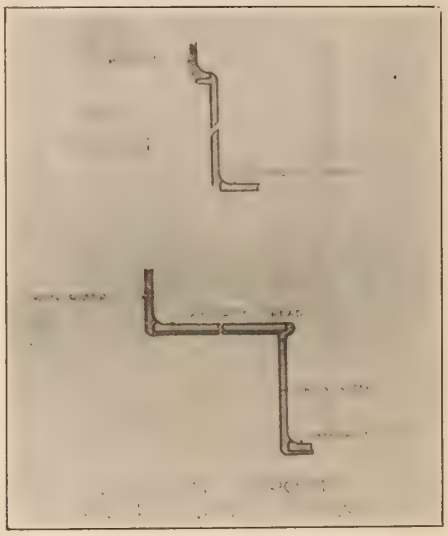

FIG. 3.—Showing the rounding and smooth surfaces of the risers and tread of the stairway, also the absence of corners and sharp angles.

Absence of Internal Angles.—The architects have directed much energy towards constructing the in-

terior as free from uneven surfaces and sharp angles as is possible to do. They have succeeded so far in this respect that it is their belief that the present building exceeds others of a similar nature in

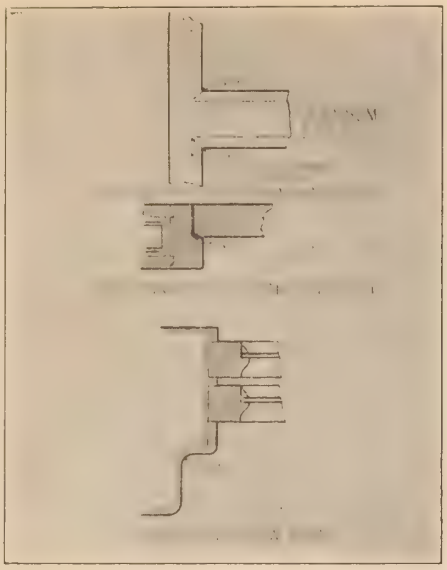

FIG. 4.—Showing rounding edges and ends of doors with curving of the corresponding angles of the door frames. The same of the windows.

this particular. This freedom from uneven surfaces and sharp angles can best be shown by the following cuts and drawings kindly furnished me by Mr. Allen, the architect.

FIG. 5.—Shows the doors, which are smooth and without panels. The absence of wooden framework on the side walls is also shown.

1. The floor in meeting the side wall does so in a rounding curve without joints, and is a continuous whole. (See Fig. 2.)

2. In the exposed surfaces of the stairways the risers join on to the treads in a rounding curve. The tread is of the same composition as the flooring, and is laid on the inner frame in flush surfaces and rounding joints. (See Fig. 3.)

3. The door and window frames are flush with the walls. The edges of the door, as it fits in its frame when shut, are rounded, as is the corresponding surface of the frame. The same is true of the transom lights. (See Fig. 4.)

4. The doors themselves are solid, without panels. (See Fig. 5.)

The door and window frames do not project from

FIG. 6.—Shows the finish of the ceiling and side walls, permitting of frequent washing, also the absence of projecting door jambs, flush surfaces prevailing.

the walls. They continue as an even, smooth surface with the wall (see picture of a hall in Fig. 6).

5. Shelving in the various parts of the hospital stands away from the wall two inches, for the pur-

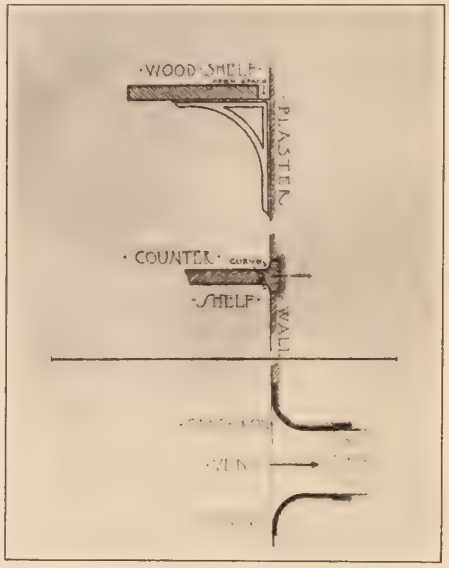

FIG. 7.—Shows the open fresh air and exhaust ducts of rooms and wards, no gratings being used; also space between side wall and shelf for cleaning.

pose of being capable of thorough cleaning. (See Fig. 7.)

6. The plumbing, fixtures, seats, and bathtubs, have all been especially made from drawings fur-

nished by the architect. They present in every instance smooth surfaces and are free, as far as it is possible to be, from abrupt angles. The Meyer Sniffen Co., in charge of this branch of the equipment, have bent every effort to accomplish these results. (See Fig. 8.)

The importance of the absence of these sharp angles (places to collect and hold dirt) cannot be over-

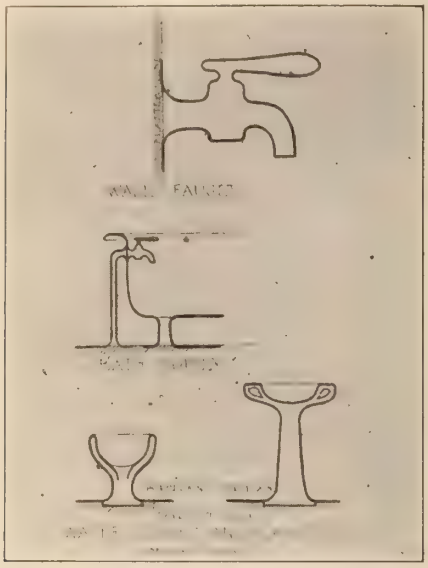

FIG. 8.—Shows patterns of the plumbing fixtures, made specially for the hospital, with the object of avoiding sharp corners and angles.

estimated, nor the thoroughness with which smooth surfaces can be cleaned.

Heating and Ventilating.—This is the most difficult problem that builders of hospital buildings have before them. Unquestionably the direct method of reheating the air that has already been used by means of radiators, and depending on windows and doors for the supply of fresh air, is crude in the extreme. Aside from its being irrational, this custom is not without its dangers, especially toward patients subjected as they must be to drafts when it is not in their power to protect themselves. We are, however, creatures of such fixed habits that the successful adoption of any other method of heating and ventilating is often marred by the lack of intelligent concurrence of patients and nurses.

The system adopted for the Woman's Hospital is twofold. (1) The direct method of heating by radiators is used in the bedrooms of the nurses and help, on the basis that they will at all times open windows. (2) The plenum, or indirect, method of heating and ventilating is used throughout the remainder of the hospital. This consists in forcing by fans through ducts opening into the various wards and rooms heated fresh air which has been filtered. Through other ducts the foul air is drawn out by fans and carried to the roof. The fresh air comes into a room or ward about seven feet above the floor, the foul air is drawn out at the floor. For the proper working of this system it is necessary that the windows shall be closed. The supply and removal is so regulated in this building that a complete change of air takes place every six minutes in the operating room, etherizing room, and toilets; every ten minutes in the wards and private rooms; every fifteen minutes in other rooms. A choking of the ducts up to within two feet of their openings prevents drafts. The ducts as they come through the walls have no gratings, since such arrangements collect and hold dirt.

A feature of the building, adding greatly to its warmth in winter and coolness in summer, is an air space of one foot surrounding the entire building between the outer wall and the inner plaster wall. In this space are all heating and ventilating ducts, together with steam pipes. Pipe chambers in both ends of the building extend from the basement to the roof. Through these it is expected to install at a later date a pressure and vacuum cleaning system.

A large sterilizing plant for mattresses, pillows, etc., is to be installed in the basement. The kitchen is in the top of the building. Cold storage boxes are throughout the building. All water entering the building is passed through two filters before being distributed. Electricity as a motive power and for lighting is used throughout the hospital.

SURGICAL APPLIANCES AND EQUIPMENT.

It is my aim in this connection to mention only such features as are especially a part of the Woman's Hospital.

Supply and Sterilizing Room.—Some eight or ten years past it became evident that it was of great importance to centralize the preparation and steriliza-

FIG. 9. Shows a utensil sterilizer for boiling basins, etc.

tion of all surgical dressings and ligatures. Up to this time our custom was the same as then existed in all other hospitals, the operating room nurse of each operating room preparing and sterilizing her own dressings, while a member of the house staff or druggist sterilized the ligatures. Members of a house staff cannot get much accumulated experience in the preparation of ligatures, since their stay in the hospital is limited. Besides, the care of the patients

should consume their time. Neither is it reasonable to expect much improvement from the druggist. To remedy these objectionable features the medical board of the Woman's Hospital instituted, some ten years ago, the following plan. A nurse of recog-

FIG. 10.—Shows the treatment table used in the hospital. It admits of all positions.

nized ability and stability of character was employed to take entire charge of the preparation and sterilization of all dressings and ligatures used in the hospital. One member of the medical board (an assistant surgeon) is responsible for all methods of sterilization and their proper performance. The nurse in charge acts under the assistant surgeon appointed. She receives her assistance from the nurses in the training school who are assigned to the supply room for a certain time during their period of training. The assistant surgeon, made responsible, reports at intervals to the medical board and makes no changes

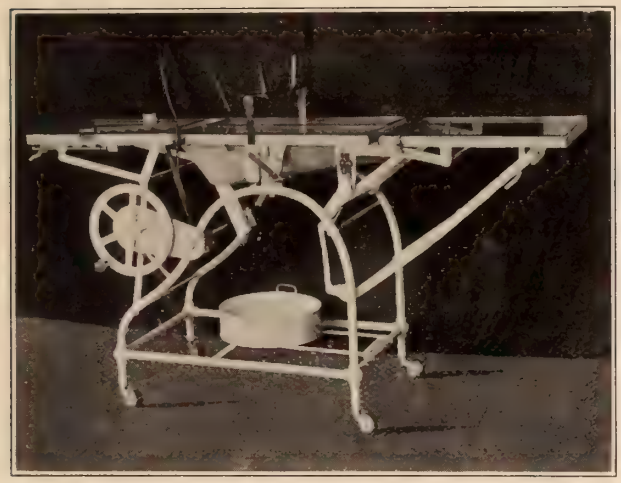

FIG. 11.—Shows the new Cleveland operating table as made for the hospital. This horizontal position shows the kidney support, as also the inclosed bicycle mechanism for rapidly giving the desired positions.

unless with the approval of the surgeons. This method, since its adoption, has given perfect satisfaction. The responsibility rests upon one nurse. Nothing is allowed to leave the sterilizing room unless bearing her stamp and seal. If the seal is broken, the package is returned for resterilization before it is used. In some modified form, I believe that the majority of the hospitals are now using this method.

In connection with the sterilization of dressings I am certain that those doing such work have not in many instances been taught the importance of getting rid of all air from the sterilizing chamber before the sterilization is commenced. Koch and Wolffhügel demonstrated that it required one hour for dry heat at 150° to 165°C. to destroy spore life. Rubner showed that while 100 per cent. steam at 100°C. destroyed anthrax spores in one minute, a mixture of 60 per cent. steam and 40 per cent. air at 100°C. required thirty minutes to destroy the same spores. Dunham demonstrated by placing thermometers at different levels in the sterilizing chamber that air confined in the chamber at the time of letting in the steam caused marked difference in the temperature of different parts of the chamber, as, for instance, steam under pressure of 20 lbs. (122°C.) was admitted to the sterilizing chamber, in which

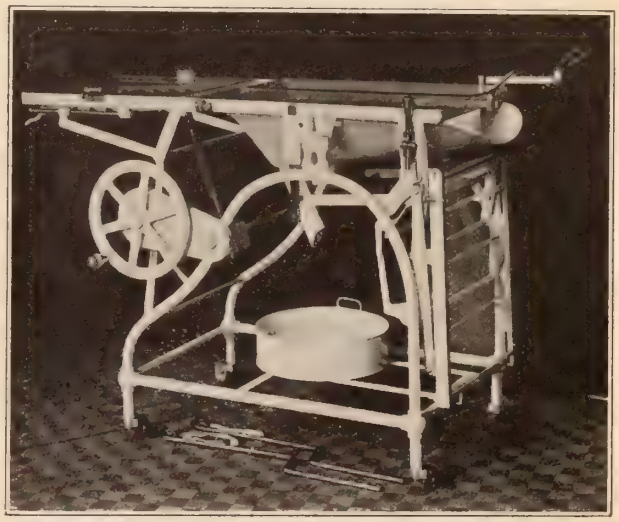

FIG. 12.—Shows the treatment table ready for operations in the lithotomy position.—Note the movable drainage pan, taking the place of the Kelly pad.

confined air remained. The thermometer near the bottom after five minutes stood at 96.5° C.; at the end of thirty minutes it had reached only 104° C. The air was now let out through the air cock at the bottom of the chamber. The pressure had fallen to 10 lbs., yet the thermometer at the bottom had risen from 104°C. to 111.5°C. The pressure was now raised to 20 lbs., taking eight minutes, at the expiration of which time the thermometer at the bottom stood at 122°C.

We cannot by means of any ejector placed upon a sterilizer exhaust all of the air from the chamber. At best we can only get about ten inches of vacuum. The steam coming in at the top of the chamber will push the air ahead of it and out through the cock at the bottom of the sterilizer, if such is furnished. This cock should always be present, and nurses should be taught the necessity of seeing that all air is expelled before the timing of the sterilization is commenced. I do not, however, belittle the importance of the ejector spoken of, for it is of advantage in assisting the expelling of air and in furnishing dry sterilized dressings, a most important necessity.

For the purpose of sterilizing the utensils of the operating room an excellent boiler operated by a foot pedal has been made by the Kny-Scheerer Co., especially for the hospital. (See Fig. 9.)

The examining table adopted by the hospital is the one shown in Fig. 10. It admits of every position.

The Cleveland operating table is the one preferred by the Woman's Hospital. The special feature of this table differing from others is that when the patient is placed in the Trendelenburg position the thighs are flexed and by so doing the recti and psoas muscles are relaxed. The relaxed condition of these muscles enables the operator to work with greater ease than when they are tense as in the position obtained on other tables. A recent modification of this table as shown in the cut adds greatly to its value. It is made by the Kny-Scheerer Co. The mechanism of getting the Trendelenburg position is simpler. It is more readily arranged for the lithotomy position, and the side arms, which were formerly objectionable, in this position, have been done away with. A movable drainage pan has been introduced, enabling the operator to do away with the Kelly pad when doing pelvic work. A movable lumbar support has also been added for kidney work. (See Figs. 11, 12, and 13.)

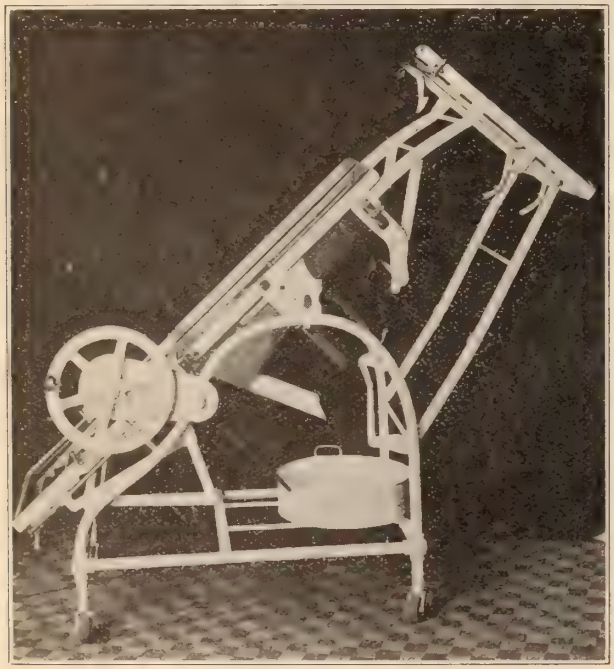

FIG. 13.—Shows the table in the extreme Trendelenburg position, necessarily flexing the thighs and relaxing the recti muscles.

The medical board of the hospital earnestly desires that the pathological department shall be so equipped and endowed as to permit of the employment of a pathologist whose compensation shall be such as to enable him to devote his entire time to investigation and research in the pathological laboratory of the hospital.

It is also the earnest wish of the surgeons that a bulletin, to be issued at regular intervals, shall be published by the hospital, the object of this bulletin being to present to the medical profession the results of the work done in the surgical and pathological departments of the hospital.

The obligations of a hospital so well equipped as the present Woman's Hospital cannot be alone that of relieving the suffering of those who present themselves for treatment—this is the first duty—yet another exists, that of providing a means for an exhaustive study of all pathological states found and of giving to the profession at large the results of these studies and of the surgical work, in order that other sufferers may profit, and that the benefits of the hospital may not be confined to the comparative few presenting themselves for treatment.

70 WEST THIRTY-SECOND STREET.

AORTIC ANEURYSM TREATED BY INTRODUCTION OF FIFTEEN FEET OF SILVER WIRE. DEATH AFTER FOUR MONTHS.

BY JOSEPH RILUS EASTMAN, M. D.,
Indianapolis, Ind.

The patient was a male negro, aged forty-one years, of occupation a waiter. History. His family history was negative as to tuberculosis, syphilis (positively denied any specific infection), chronic heart disease, liver and kidney disease, malignancy. In his personal history he stated that he had had none of the diseases of childhood, except measles at the age of twelve years, later severe attacks of pneumoina, and typhoid fever at fourteen years. He was a moderate user of tobacco, but consumed alcohol in large quantities, both in beer and in whiskey, until about two years previous to the date of his admission into the hospital. He had done a great deal of heavy work and often had been exposed to bad weather. The present trouble commenced about six months before his admission into the hospital, when he first noticed pain on the left side above the cardiac region. The pain was sharp and shooting in character, and so severe as almost to cause him to fall. It radiated through the shoulder to the posterior scapular region. The pains had increased in frequency and severity until at the time of admission, they were almost constant, worse at night. They became throbbing and stinging in character, coursing up the left side of the neck and down the right arm and axillary space. He coughed only during the last week before admission. He had experienced at times almost total loss of speech, but had never had any paralysis of sensation or motion. His appetite had been good, and his bowels had been regular in action. He thought he had not lost in weight.

Physical Examination.—Patient was a man of medium height, quite markedly stooped, was fairly well nourished. Slight anæmia was present. He had the facial expression of one suffering great pain.

Detailed Examination.—There was a large area of distinct heaving pulsation above the left nipple, limited above by the clavicle and externally by the deltoid. There was expansive pulsation in the fifth interspace to the right of the sternum. There was a distinct bulging above the left nipple. The apex impulse was absent from the normal position. Respiration was slow and symmetrical and of the abdominal type. The abdomen was flat. The pulse was somewhat rapid but regular, of moderate tension and of equal celerity and tension in both radials and carotids. There was an oval palpable tumor one and one half inches in diameter above the left nipple lying upon the second and third ribs and second interspace. Over this there was a distinct pulsation. Tactile fremitus was absent over the whole left side.

Upon percussion there was found posteriorly over the upper part of the left lung flatness extending down to just below the inferior angle of the scapula where the note again became resonant. The limit of flatness continued around the side of the chest, being highest in the

axillary space. The area of flatness remained the same on changing the position of the patient. The right lung was resonant. The heart dulness began on the right side one half inch to the right of the sternum, extending on the left side to the nipple line, and below, to the fifth interspace. Its upper limit was lost in the transverse dulness described above. The stomach was dilated. The liver was about normal in size.

Auscultation.—Lungs. There was diminished vesicular breathing over the whole left lung. Vocal fremitus was almost completely absent except at the extreme apex: In the right lung, anteriorly, there were moist crepitant râles. Posteriorly, vocal fremitus was absent at the root of the scapular spine. The remaining portion of the lung was normal. Heart sounds could be heard over the whole anterior chest wall, but were most distinct at either side of the sternum about the fourth rib. They were heard distinctly over the tumor mass. Bruit over the tumor mass was not heard.

Course of the Disease in the Hospital.—The pulse was varying from 79 to 120, and as a rule, not high, but regular, and of moderate tension, always of equal celerity and tension in both radials and carotids. The respiration was regular, varying from 17 to 24. The temperature varied throughout the disease, but was rarely high, ranging between 96° and 102°. On January 18, 1906, it reached 102°. Pain gradually became worse, and cough increased.

Treatment.—Dietetic. Light diet, with very little liquid food, was given at regular intervals and in small quantities. Later, as swallowing became difficult, liquid diet was given in small quantities. Medical. Pain was controlled by codeine and morphine. Late in the disease the patient was kept continually under morphine. He was given a thorough course of potassium iodide, and large quantities of magnesia from time to time. Surgical. The patient was removed to the surgical ward and operated upon on February 3, 1906. At this time, fifteen feet of number 28 silver wire were injected into the cavity of the aneurysm through a fine trocar. The trocar was entered over the area of expansile pulsation and passed directly backward into the chest for a distance of two and one half inches. The proximal end of the wire was anchored to the skin of the chest wall with adhesive plaster. No anæsthetic was used. At this time, 300 c.c. of sterile two per cent. gelatin was injected into the subcutaneous tissues of the thighs (after Lancereaux). After the introduction of the wire, the pain became worse and three weeks later five feet of wire were removed. Orthopnœa developed and gradually became worse, being extreme at the time of the death of the patient. The left chest became filled with serosanguinous fluid which was drawn off one month after the operation. The condition of the patient seemed somewhat improved following the withdrawal of this fluid, but the cavity gradually refilled. The patient died at stool on May 24, 1906. Death was accompanied by profuse hæmorrhage at the mouth.

Post Mortem Findings.—There was found a large spherical tumor composed of the walls of the aortic arch; large rupture in the wall of the tumor leading into the lumen; the œsophagus intact; but part of the third rib was destroyed to the extent of two inches at the costal articulation, with some destruction of the ribs above and below. The spinal column had not been affected by the pressure. The left chest was filled with sanguinous fluid. The liver was not enlarged, but the spleen was hardened.

The Aneurysm.—At a distance of one inch from its exit from the heart, the aorta showed a sudden dilatation. This involved practically the whole arch of the aorta and hung below the level of the arch, filling the space between the descending portion of the arch and the heart. At the point of exit of the aorta from the mass, which was slightly above and to the left of the growth, the vessel wall appeared to assume its normal structure and proportions. The dilatation, which involved practically the whole of the aortic arch, was uniform, and the mass was spherical rather than spindle shaped. The size was as follows: 1, Diameter in direction of atortic arch, 18 cm.; 2, transverse diameter, 15 cm.; 3, vertical diameter, 14 cm.; 4, greatest circumference, 46 cm. The mass was rather firm to the touch, but capable of being compressed easily.

The whole growth was situated to the left and a little above the heart. It projected forward rather than backward. To the left and anteriorly, it was in close contact with the sternum and costal cartilages of the

Sac of aneurysm, showing rupture in thickened fibrinous wall in which is partially imbedded the clump of silver wire.

second, third, and fourth ribs. It was limited above by the upper wall of the arch of the aorta. Above and near the middle of the upper wall of the aneurysm, the branches of the aorta were seen to lead away from the cavity and presented a normal appearance and arrangement with little or no dilatation. The great vessels at the base were free from the mass, except the left pulmonary artery, which was included in the adhesions of the anterior wall of the aneurysm.

Structure.—The cavity of aneursym was spherical in space, had a capacity larger than that of a quart cup. The lower part of the cavity contained a large amount of fibrin well formed and some clotted blood, clinging to the wire which had been injected into the aneurysm some months previously. On removing these substances from the cavity, the interior of the walls, when exposed, showed in the lower part and on the left wall a shaggy deposition of fibrin. The upper portion of the wall was smooth and white. At short intervals over the whole inner surface of the wall, there was a calcareous de-

posit. The wall in all parts was thickened and hardened, its thickness varying greatly in different parts, due to structures adherent to the outside of the aneurysm. Posteriorly externally, the wall was ragged from fibrous bands of adhesions. Posteriorly inferiorly, and to the left, was an opening into the interior of the cavity, the edges of which opening were rough and had the appearance of a rupture. Almost covering the entire left side and a part of the upper surface, was a large mass of lung tissue firmly adherent to the wall of the aneurysm. Posteriorly, the right side and part of the anterior upper surface was shaggy with fibrous bands of adhesions. Anteriorly, and to the left side, was a large opening communicating with the interior cavity. The edges of this opening were ragged for a part of the way indicating a tear, while the smooth edge indicate that it had been enlarged by cutting. Just to the right of this opening, on the upper anterior surface of the aneurysm, was a small bit of costal cartilage, probably the second costal cartilage. This was well buried in adhesions.

Remarks.—Galvanism was not employed after introduction of the silver wire for the reason that the dangerous condition of the patient forbade it. Subsequent injections of gelatin were omitted for the same reason.

331 NORTH DELAWARE STREET.

THE ROLE OF THE BLOOD IN NUTRITION AND REPAIR.

BY JOHN P. ARNOLD, M. D.,
Philadelphia.

In recent years much time and work have been spent in the study of the blood, with very valuable results. Improved technique and methods of staining have rendered much aid in the diagnosis, prognosis and treatment of many obscure conditions; but one very important study of the blood has been neglected. That is the biological and physiological relations of the blood to the tissue cells. This involves not only the minute study of the corpuscles, which has been so carefully done, but also a full and complete consideration of the development of the circulatory apparatus including the lymph vessels, and a thorough understanding of the relation of the plasma to the individual cells of the organism.

In order to properly appreciate the rôle of the blood it is essential that we thoroughly understand the elemental principles of nutrition. The only way in which this can be done satisfactorily is to study the subject in the unicellular organisms, and then apply the facts to the organized cell community which makes up the organisms of man and the higher animals, tracing step by step the manner in which primitive nutritive processes have, through specialization of function and the division of labor, been adapted to meet the conditions in an organized cell state.

The amœba, a unicellular organism, lives in water which contains all the substances necessary for the nutrition of the cell. This small mass of nucleated protoplasm takes directly from the water which surrounds it, by imbibition or intessusception, water, salts, oxygen, and organic matter, which, by means of the chemical characteristics of protoplasm, it uses for the production of heat and energy, for purposes of growth, and repairs the waste of its substance. Its waste products are excreted into the water in which it lives.

The higher animals may be considered, biologically, as a vast community of unicellular individuals which are living together for mutual benefit and protection. In this organized cell state the great mass of the cells are removed from the external sources of their food supply. Consequently the organism adapts itself to the conditions and the circulatory apparatus is developed for the purpose of bringing food, water, salts, and oxygen to the individual cells, thus placing them in the same relation to their immediate food supply as the unicellular animals are to theirs.

In studying the development of the circulatory apparatus from both the ontogenetic (embryological) and phylogenetic (comparative) standpoints, we find that it develops from a very simple apparatus in the primitive worms and blood worms to the apparently complicated mechanism found in man and the higher animals.

The primitive worms are composed of a body tube consisting of the ectoderm and an inner layer derived from the outer layer of the mesoderm. The body tube contains the intestinal tube which is also composed of two layers of cells, the inner layer being derived from the entoderm, and the outer from the inner layer of the mesoderm. Between the body tube and the intestinal tube is a space filled with lymph, called the body cavity. The products of digestion readily pass through the walls of the intestinal tube into the body cavity. Oxygen is taken in largely through the thin walled body tube. The cells of both the body tube and the intestinal tube derive their food, water, salts and oxygen from the lymph in the body cavity.

The simplest and most primitive blood circulatory apparatus is well shown in the blood worms. In these worms there is developed, in the mesoderm, a dorsal blood vessel and a ventral blood vessel. These are joined by numerous cross branches. The dorsal vessel is a primitive artery, and the ventral vessel a primitive vein. They both contain muscular tissue in their walls. They carry true blood which contains corpuscles and hæmoglobin. From such a simple circulatory mechanism the circulatory apparatus of man and the higher animals is developed. It appears to be complicated because we usually begin to study it before we have mastered the laws of structure and function, as shown in the simpler forms of animal life, which govern its development.

To all intents and purposes each cell in the body, except those of the spleen, lies in a bay of lymph just as the amœba lies in the water which surrounds it. The blood vascular and the lymph vascular systems therefore seem to act as carriers to and from the cells. The quantity of blood supplied to any particular part is regulated by the vasomotor mechanism; and the quality of the blood is determined by the character of the food ingested, its proper digestion, the air we breathe, and the proper removal of waste materials.

Digested food, water, and salts absorbed into the blood stream from the alimentary tract, and oxygen from the lungs, are carried through the arteries and arterioles to the capillaries. In these thin-walled vessels, whose walls consist of only a single layer of flattened endothe-

lial cells placed edge to edge, with numerous small openings, (the stomata) between them, the water, salts, dextrose, fats, oxygen, and other substances easily pass out into the pericellular lymph spaces by exosmosis. The serum albumin, serum globulin, and fibrinogen pass out less readily because of the size of their molecules. Indeed it seems probable that these proteids escape largely through the stomata, which appear to be a special provision upon the part of Nature for their exit.

It is a well known fact that water, salts, sugar, and crystalloid substances in general, diffuse readily, while the majority of proteids, excepting proteoses and peptones, are practically nondiffusible. A careful study of diffusion through animal membranes leads to the following conclusions: An animal membrane is porous. The openings are very minute. Substances having small molecules readily pass through. Salts, sugar, and most crystalloids have small molecules. Proteids in general are composed of very large molecules, too large to pass through the pores of the membrane. The diffusibility or nondiffusibility of any substance is therefore largely a question of the size of its constituent molecules. The foregoing brief explanation is given here because the question is so frequently asked as to how the nondiffusible proteids can get through the capillary walls. The stomata are therefore to be considered simply as larger openings through which the blood proteids and frequently the leucocytes pass through the capillary walls into the pericellular lymph spaces.

As before stated, each cell of the body, except those of the spleen (which are in direct contact with the blood itself), is surrounded by lymph which is derived from the blood in the capillaries. This lymph contains water, salts, oxygen, proteids, dextrose, and all other substances needed by the cell. The cell takes its nutritive materials from the lymph which surrounds it. It uses these substances for the production of heat and energy, and for growth and repair. The waste materials produced by the cell in its metabolic processes are excreted into the lymph which surrounds it. The waste products are carried away from the pericellular lymph spaces chiefly by the lymphatic vessels, though carbonic acid gas, water, salts, and other waste material are also carried away by the veins. The lymphatics are, however, the true sewerage system of the body and serve as the chief agents in carrying the waste products of cell activity away from the pericellular lymph spaces. By this arrangement, therefore, the cells live, not in a stagnant pool, but in a constantly flowing stream of lymph, which is continually poured into the pericellular lymph spaces from the capillaries and from the pericellular lymph spaces it continually flows into the lymphatics which carry it away.

An important practical conclusion can be drawn from the foregoing facts. That is that no cell in the body can be sick or diseased if it is supplied with the proper quality and quantity of lymph, and has its waste products properly removed, except as the result of direct injury. As the proper quality and quantity of lymph depend upon the quality and quantity of blood the conclusion may be stated as follows: No cell can be sick or diseased, except as the result of direct injury, if it be supplied with the proper quality and quantity of blood and have its waste products properly removed. Even the result of direct injury may be brought within this conclusion, for an injury immediately alters the quality and quantity of blood in the injured part.

We must now consider the manner in which the lymph surrounding the cell may become altered in quality and quantity.

I. Abnormal quantity. 1. Quantity less than normal. a. Insufficient amount of blood in the body; b. insufficient amount in localized areas due to excessive vasoconstriction or to pressure obstructing the flow of blood into the capillaries. 2. Quantity greater than normal. a. Excessive amount of blood in the body (plethora); b. excessive amount in localized area due to active vasodilatation or to the obstruction of the outflow through the veins and lymphatics.

II. Abnormal quality. a, Ingestion of harmful substances as food or medicine; b, ingestion of insufficient quantities of normal food stuffs; c, improper digestion of normal food stuffs; d, absorption of poisonous substances from the alimentary canal; e, breathing air deficient in quality or quantity; f, infection with microorganisms whose toxines poison the blood, or which mechanically obstruct the flow of blood or lymph; g, failure upon the part of the kidneys, lungs, skin, or intestines to properly excrete waste products which remain to pollute the blood stream; h, failure upon the part of the liver to destroy certain poisonous materials absorbed from the intestines, and to convert uric acid and other related waste products into urea; i, failure upon the part of the ductless glands to form their normal quality or quantity of secretions. (g, h, and i, will not occur if these organs are supplied with the proper quality and quantity of blood.)

Alterations in the activity of the cells of the organism demand alterations in the quantity of blood supplied to them. Increased activity of any group of cells is, under normal conditions, accompanied by and largely dependent upon an increased blood supply to them. Within normal limits, increased blood supply to a part produces increased activity of that part. The dependence of all parts of the body upon the quantity of blood supplied to them makes it necessary that there should be some mechanism by which the blood supply to any part or parts of the organism can be regulated. This can only be done by a nervous mechanism. This we find well developed in all the higher forms of animal life in the vasomotor mechanism. The vasomotor mechanism consists of a nucleus in the medulla connected with cells distributed throughout the spinal cord which send their axons to cells in some vertebral or prevertebral ganglion. These ganglionic cells send their axons to the muscle cells in the walls of the blood-vessels.

The flow of the blood through the vessels of the body depends, first, upon the *vis a tergo* imparted to it by the beat of the heart, but the continuity of the flow is maintained by the elasticity of the

arteries and the muscular coat of the bloodvessels. The muscular coat is best developed in the arterioles, and it is to this part of the vascular system that the largest number of vasomotor nerves are distributed. From these facts it can readily be seen that alterations in the blood supply to any part are almost entirely controlled by the calibre of the arterioles. The changes in the calibre of the arterioles are regulated by the vasomotor mechanism.

The vasomotor mechanism, in the light of our present knowledge, seems to consist of two distinct kinds of neural cells. One group, the vasoconstrictors, bring about a contraction of the muscular coat of the bloodvessels and consequent diminution in their calibre. The other group of cells, the vasodilators, produces a relaxation of the muscular coat of the vessels and an increase of their calibre. Though there are some who doubt the existence of vasodilators, their presence serves to make clear certain conditions which would otherwise be difficult if not impossible to understand. Space forbids any discussion of the proofs for and against the existence of vasodilators.

Both vasoconstrictor and vasodilator cells in the spinal cord and the medulla are kept in touch with peripheral conditions by reflex vasoconstrictor and reflex vasodilator neurons. The cell bodies of both the reflex constrictor and dilator neurons are probably located in the ganglia of the posterior roots of the spinal nerves. Their dendrons begin in various parts of the organism and carry messages to the cell bodies in the posterior root ganglia. The axons of these cells enter the spinal cord through the posterior roots and come into contact with the vasomotor cells in the gray matter of the spinal cord by means of collaterals, while the axons ascend, probably through the anterolateral ascending tracts, to the nucleus in the medulla.

The old law of *ubi irritatio ibi fluxus* is thus explained, and it may be modified by stating it as follows: Wherever a stimulus of sufficient intensity or duration is applied, or wherever an irritant of sufficient intensity or duration acts, to that part the blood flows. This determination of the blood to the part is brought about by the vasomotor mechanism.

The vasoconstrictor mechanism is in a condition of constant activity, preserving a partial contraction of the bloodvessels called vasomotor tone. Vasomotor tone is just as important a factor in the circulation of the blood as the beat of the heart. Many so called cases of heart disease are really due to lack of vascular tone, and the heart is only secondarily disturbed by the lowered blood pressure.

The vasodilators are only active when aroused by some stimulus or the action of some irritant. For instance, the bloodvessels of the normal stomach at rest, are partially constricted due to the action of the vasoconstrictor mechanism. The presence of food in the stomach acts as a stimulus which arouses the vasodilators, and active dilatation of the gastric bloodvessels takes place. This increased blood supply is needed for the proper formation of the gastric juice, and the increased activity of the muscular coat of the stomach. The same active dilatation of the bloodvessels in any and every part of the body takes place when any group of cells is called into activity. Under normal conditions when the work of the part ceases or the stimulus is withdrawn, the dilators cease to be active and the constrictors resume their normal sway. It will readily be seen from the foregoing brief description of the vasomotor mechanism that the flow of blood and consequently the supply of lymph to any group of cells is automatically regulated.

With a knowledge of these facts, which are thoroughly established physiological principles, the first axiom of therapeutics must be as follows: All curative measures must be directed to the restoration of the normal quality and quantity of blood to the part or parts affected.

When we are able to do this, therapeutics will have become a science. To the accomplishment of this end therapeutical research must be directed. Though we may never reach this goal we must make the effort to approach as closely as possible to it. Physiological therapeutics based upon physiological diagnosis and a thorough understanding of morbid physiology is the best and probably the only means of bringing it within the range of our vision.

110 South Nineteenth Street.

STEREORADIOGRAPHY.

By Francis Ashley Faught, M. D.,
Philadelphia.

In the issue of the *New York Medical Journal* for August 25, 1906, there appears an article entitled Stereoradiography, by Dr. G. H. Stover, of Denver, Colorado. On page 368 he mentions the interesting fact that "From one set of plates we are given perfect sterioscopic views of the part from either side, truly a remarkable thing." This interesting fact was called to the attention of the writer, nearly two years ago, by Professor M. H. Cryer, at the Philadelphia Hospital. At that time I set out to discover the optical factors determining the process, and with the aid of my brother, Mr. Albert S. Faught, who was then attending the University of Pennsylvania, worked out the following propositions, which I believe to be a rational explanation of the phenomenon. I shall not unnecessarily occupy space by repeating the method of producing the stereoskiograms, but will proceed at once to the consideration of the optical principles involved:

Figure 1 represents diagramatically the method by which the stereospiograms are produced. The lines C-D, and C^1-D^1 represent the plates; the point A is the source of light in the first exposure, the point B the location of the source of light in the second exposure; X and Y are two points in the object represented by the arrow. They have been selected as means of simplifying the following remarks. Since they represent two points in the object, not in the same plane, it follows that any conclusions, drawn from a consideration of them hold good for any and all points, in an object no matter how complex. The lines A-P, and B-P^1, passing through the point X, represent rays of light passing

from the source of light to the plates, at PP and P^1 in the two exposures.

Bearing in mind that the source of light has been moved through a distance of about an inch and a half in a given direction, and in a plane parallel to the plates, between the two exposures, it is obvious that the points P and P^1 will not coincide, being projections of a point x, above the plane of the plate.

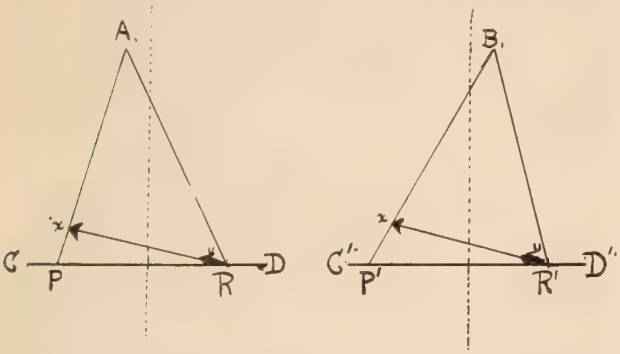

Fig. 1.

At the same time, the points R and R^1 will coincide in the two plates, since the point in the object at Y is already in that plane. Following this reasoning, we see that the distance between the point P and the point R is not the same but shorter than the distance between P^1 and R^1.

In binocular vision our knowledge of relative distance and perspective depends: First, upon variations in the visual angle of objects at different distances from the observer; and second, upon variations in the visual angles, from the same object, in the two eyes.

Stereoscopic pictures are so constructed that they reproduce by the aid of suitable apparatus, the conditions of binocular vision. Dr. Stover describes how, with practice normal eyes may be made to view the stereoscopic pair as one picture with consequent visual sensations of perspective.

In case there is no time for previous practice with this method, or where it is impossible from defective vision, the reflecting stereoscope will prove of value. This instrument, in its simplest form, can be constructed by a carpenter, and at moderate expense. The arrangement of the component parts are pic-

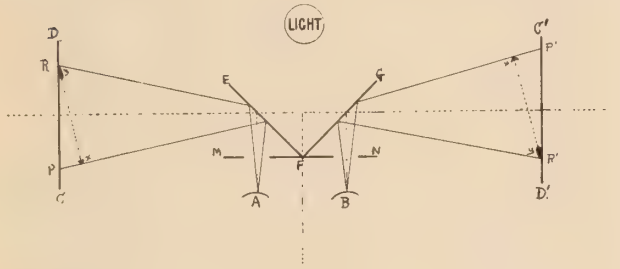

Fig. 2.

tured in Fig. 2. The heart of the apparatus consists of two thin plate glass mirrors of about eight by ten inches, arranged with the reflecting surface outward and at an angle of 45° one to the other (E-F-G, Fig. 2); directly in front of the angle F is the eye board, M-N; a piece of metal or heavy cardboard, perforated by two one-inch holes, cut two and one-half inches apart from centre to centre. The pair of negatives (prints may be used), are placed in suitable stands, which will maintain them in a vertical position. These are then placed in position as indicated (C-D and C^1-D^1, Fig. 2): The arcs A and B represent the eyes of the observer, and the diverging lines, from A to R-P and from B to P^1-R^1, the visual rays. Under these conditions the identical points R and R^1 reach the left retina of the two eyes A and B respectively, while the points P and P^1 pass to the other side of the corresponding eyes. Since the points P and P^1 are of unequal distance from R and P^1 the object is referred to X, a point where the visual rays, passing to P and P^1, cross. Since this point X corresponds to the actual location of the point in the original object, we have the true perspective reproduced. In demonstrating the phenomenon of viewing the object from both sides with one pair of plates reference will be made to Figs. 3 and 4.

As a means of further simplyfying the demonstration. I have reduced the rather complex diagram of the reflecting stereoscope to the less confusing one pictured in Fig. 3. Here the two plates are repre-

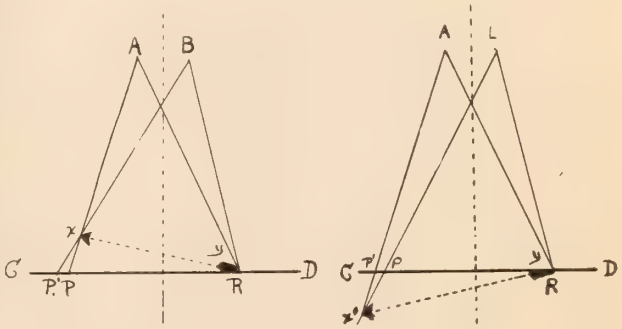

Fig. 3. Fig. 4.

sented by the single line C-D, while the points P and P^1 represent the projection of the point X in the two exposures; A and B, the two eyes. The eye A viewing the plate just made, with the picture between P and R, while the eye B sees the second plate and the object between the points P^1 and R. Under these conditions the visual lines A-P and B-P^1 cross at X, where the brain in binocular vision refers to the location of the object. This being true, for the point X is true for all points in the object X-Y, we have the natural perspective reproduced.

Figure 4 shows the conditions present where the positions of the two negatives or pictures are reversed, and the eye A sees the picture intended for eye B, and *vice versa*. As a result, one consciousness, as in Fig. 3, refers all variable points, including P and P^1, to that locality in space where the visual rays to identical points cross. Now these rays cross at a point X^1, behind the plates, as this condition exists for all points in the object not in the plane C-B, we have a complete reversal of perspective, and a resulting impression of seeing the object from the opposite side from which it was actually photographed. In the case of hollow objects, such as the human head, the result of transposition of negatives is startling, in that the brain case appears to be turned inside out.

5231 Baltimore Avenue.

ACUTE PRIMARY DILATATION OF THE HEART.* REPORT OF A CASE.

By J. SHERMAN WIGHT, B. S., M. D.,
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The consideration of this subject in medical literature will be found in a carefully written work by Seitz and worthy of thought by such authors as Peacock, Forget, Maclean, Thurn, Thompson, Black, Treadwell, Fraenkel, Anders, and Whittaker. It comes to our notice in the history of cases of undoubted heart strain with physical signs of dilatation of the right heart, resulting either in complete recovery through prolonged rest, or in progressive cardiac disease through a return to active occupation on the disappearance of all the distressing symptoms of the broken compensation.

A knowledge of the weight and size of the heart and the thickness of its ventricles is necessary for a complete understanding of the changes that take place. It weighs 290.6 grammes; is 12.5 c.m. in length, 9 c.m. in breadth, and 6.5 c.m. in thickness; in the right ventricle the wall is 4 m.m. thick at the base, 3 m.m. thick at the middle, and 2 m.m. thick at the apex; in the left ventricle the wall is 9.3 m.m. thick at the base, 11.4 m.m. thick at the middle, and 7.8 m.m. at the apex. The left ventricular wall is more than twice as thick as the right, and is therefore better able to withstand the strain.

Some light has been thrown on the phenomena of muscle fatigue by the laboratory experiments of J. Joteyko in Richet's laboratory in 1896. He found that an excised muscle recovers from fatigue only when oxygen is available, showing that muscle possesses in itself factors which in union with oxygen are necessary to the restoration of irritability. If we observe the phenomena which develop in our body in the course of strong muscular efforts, we notice, first, a considerable acceleration and deepening of respiration, at the same time the frequency of the heart beats becomes increased. If the activity has been very considerable, not rarely a slight fever appears. The temperature rises, there are attacks of shivering, and a certain increase in the irritability of the central nervous system is noticeable. This fever of fatigue is also very frequently observed after very exhausting mountain tours and after long riding. The best known subjective symptom that manifests itself is the excitement appearing in the form of sleeplessness, lack of appetite, and intense muscular pains. These are phenomena of genuine poisoning produced by the accumulation of toxines in the body excreted by the muscle cells in their metabolism. Ranke washed out a fatigued muscle, ridding it of its toxines, and made it again capable of performing work. The poisonous substances going with the blood to the brain centres that control respiration and the movement of the heart, there first produce an excitation, which results in a powerful increase of the respiration and the activity of the heart, but finally with too great exertion comes depression, which leads to a standstill of the heart and death. The history of the runner of Marathon is a classic example of this course of phenomena.

Although fatigue can be produced by the accumulation of toxines, this is not the sole cause. Another factor is the progressive consumption of substances which are necessary to activity and life, and more rapidly than they can be introduced or reformed. Although from long before birth up to death the heart muscle labors uninterruptedly, under normal conditions, it does not become fatigued because the changes resulting from its activity become compensated in its metabolism.

Bearing in mind what has been said we are concerned with those factors which have been interfered with to the extent of giving rise to an acute dilatation of the right heart occurring immeditely after the strain, or after some days or weeks in a previously normal heart. A prior structural change that has been described by the pathologist leaves no doubt as to the occurrence of acute secondary dilatation, and has led some into the error of assuming this change in all cases of dilatation. An acute heart strain may escape recognition. There is a disturbance of the coronary circulation giving rise to anæmia or hyperæmia. Both diminish nutrition. On the one hand, there is too little blood in the heart wall, and on the other hand, though the quantity of the blood is increased, there is stasis, the toxines accumulate, and the oxygen is soon used up with no fresh supply. This heart will dilate under exertion and give all the signs of acute dilatation of the right ventricle. It usually occurs in young subjects.

Acute primary dilatation may be brought about by sudden great exertion, as in ascending mountainous elevations and excessive bicycling. Under these circumstances the heart palpitates violently, and there are epigastric pulsation and often pain in the cardiac region evidences of dilatation of the right ventricle. Although the heart's reserve capacity for work has been exceeded, rest, followed by quite moderate exercise, often restores the condition to the normal. I have seen acute primary dilatation produced by strong emotion. In such cases sudden contraction of the peripheral vessels occurs, attended with arrest of the heart's action; this soon gives place to violent palpitation and rarely to dilatation. Sudden fright may act similarly. This is angeiospastic dilatation due to acute transitory spasm of the vessels described by Jacob in the *Zeitschrift für klinische Medicin*, February 4, 1899.

The remarkable endurance of the athlete and the gymnast is in part, owing to the abnormal amount of physiological cardiac reserve force which they naturally possess, but is mainly due to the invigorating effect of training. If, however, the training be not so conducted as symmetrically to develop the entire muscular system, or if the exertion be in excess of the reserve functional power of the heart, then acute dilatation may suddenly arise. From this accident (cardiac fatigue) recovery may take place; sometimes, however, it initiates organic valvular disease.

James T. Whittaker, who has contributed to the *Twentieth Century Practice of Medicine*, once

* Read at a meeting of the Brooklyn Medical Association.

personally experienced the effect of acute overstrain of the heart in the use of forceps in a case of extremely difficult labor. The head had become wedged into the pelvis and was dislodged only under supreme effort at traction, which was immediately followed by signs of heart failure in exhaustion and faintness. He was able to get about and left for home. Examination showed the right heart to be still somewhat dilated after a few days, though his heart was previously normal. For nearly a month any unusual effort with the arms or even the act of climbing stairs was attended with a feeling of weakness and distress in the region of the heart, palpitation, and a light degree of dyspnœa.

Peacock finds the heart dilated in many of the miners of Cornwall, who after heavy hammer work of the day have to climb ladders of immense height in order to get out of the pit in the evening. These are cases of acute heart strain where even the reserve force of the heart is rapidly exhausted, and dilatation ensues all the more rapidly, because there has not been time for the development of hypertrophy.

Fraenkel records the case of a powerful hod carrier, who after a heavy lift was suddenly seized with dyspnœa and palpitation to such a degree as to render it difficult for him to reach home. This lasted several weeks and finally dropsy set in. He recovered in sixteen weeks and returned to work. He suffered a second dilatation of the right heart from overstrain in heavy lifting and was never able to do laborious work again.

Case.—G. B., age sixty-three years, collector, family history negative, previous personal history negative, stood over six feet, weighed a little over 200 pounds, and was known to have a normal heart and kidneys. While running he struck his foot near the curb and was thrown violently forward full length into the roadway. He was helped to his feet and found to be shocked and dazed, gasping for breath, bruised and cut about the face and body. He walked two blocks to the doctor's office, who recorded the following facts: A contused wound over the bridge of the nose, a contused wound of the left knee, contusions of both knees and wrists, pulse weak and rapid, with irregularity of rhythm, dizziness, shortness of breath, and marked muscular weakness. He took heart stimulants and remained in the office some time, but his strength did not return, nor his pulse get stronger and more regular. Four days later he returned to the doctor and showed marked signs of cardiac distress; his heart was examined with the following result: Pulse rapid, irregular, and weak, heart action rapid, irregularly intermittent, and weak, tricuspid second sound faint and blowing, increased cardiac area to the right, turgescence of the veins of the neck, ringing in the ears, dizziness, cough, and shortness of breath. He was sent home and put to bed. He remained at home avoiding even ordinary exertion for a short time when he began to show improvement and went out to business. He became worse and suffered from œdema at times. At the end of seven weeks the urine analysis gave the following result: Forty-eight to fifty ounces in twenty-four hours, urea normal, sp. gr. 1.028, acid reaction, high color, trace of albumin, and a few hyaline casts. About this time muscular weakness, dizziness, cough, shortness of breath, and palpitation increased so that he was obliged to take hold of railings for support and stop and rest when on the street. He finally had to give up business and stay home. At the end of fifteen weeks urine analysis showed specific gravity 1.024, albumin in moderate amount, and epithelial casts. At the end of six months the urine analysis showed specific gravity 1.016, moderate amount of albumin, granular and granulo-hyaline casts, abundant, diminished urea, and increased secretion in the twenty-four hours. The cardiac area had increased displacing the apex downward and to the left, the heart's action was arrhythmic, there was insufficiency at both the mitral and tricuspid valves. He finally died at the end of twenty-three months of the heart and kidney diseases.

The acute primary dilatation initiated the organic valvular disease. The daming back of the blood on the veins caused a passive congestion of the kidneys, which finally developed into kidney disease. Both of these conditions in the end caused his death.

In reviewing what has been said we find:

1. Acute primary dilatation of the right heart occurs immediately after the strain.
2. Acute primary dilatation of the right heart occurs after some days or weeks.
3. Predisposing causes must be looked for among those factors that prevent the changes resulting from the heart's activity from being compensated for in its metabolism.
4. Acute heart strain can occur and go unrecognized.
5. Acute primary dilatation of the right heart does not necessarily seriously prostrate or prevent the victim from going about.
6. Acute primary dilatation of the right heart may initiate organic heart disease.
7. Acute primary dilatation of the right heart may initiate organic disease of the kidneys.
8. The right ventricle dilates more readily under strain, as its walls are less than half as thick as the left.

30 Schermerhorn Street.

THE MEDICAL CLIMATOLOGY OF SOUTHERN CALIFORNIA.*

By H. Fred Lange Ziegel, M. D.,
New York.

Though in the early days of drug therapy it was well known that remedies administered in overdose could produce dangerous symptoms and even death, not until comparatively recent times has it come to be recognized that the number of drugs which can exert curative effects on disease is extremely limited. As regards climatotherapy, the chronological reverse holds true: that there are narrow limitations to this mode of therapeusis has long been appreciated; but that in the employment of treatment by change of climate there lurk great dangers has until recently been almost entirely overlooked. Any impartial observer who visits southern California cannot fail to conclude that direful results often follow the injudicious and promiscuous practice of a mode of treatment whose indications are as limited as its dangers are farreaching.

While briefly discussing the medical climatology of southern California, I wish especially to correct certain erroneous impressions regarding this section which are prevalent in the East. I propose to treat the subject much in the same manner as a drug is dealt with in a textbook on materia medica; that is, first I shall describe the origin, characters, varieties, etc., of the southern

* Read before the Harlem Medical Association, May 2, 1906.

California climate; next I shall consider its effects in health on natives and visitors, its influence in infancy and old age, and its therapeutical uses in certain diseases known to be more or less amenable to climatic treatment; lastly, I shall speak of the rôle of southern California in the climatic treatment of tuberculosis, paying special attention, as it were, to the contraindications and toxicology.

Largely because of its great latitudinal extent, nearly 800 miles, California is enabled to boast of a greater variety of scenery, vegetation, and climate than any other State in the Union. Central and southern California differ almost as much in the character of their soil and climate as do New York and Florida. That portion of the State below the parallel of 35° N. lat. is referred to as southern California. Extending into this section of the State are mountain ranges which run parallel to the coast and are from one half to two miles high. These mountains, forming southern spurs of the Sierra Nevada and Coast Ranges, are known as the southern Coast Range, and separate the Mohave and Colorado deserts in California, as well as the great deserts of Arizona, New Mexico, and Colorado, from the foothills and valleys of southern California. The Mohave desert north and east of the southern Coast Range has an average elevation of 2,000 feet, while the Colorado desert in the extreme southeastern corner of the State of California is in some places more than 300 feet below the sea level.

If on traveling westward, after traversing the great deserts and crossing the mountains referred to, the traveler expects to reach a country with a natural luxuriant vegetation, such as one encounters on entering Italy after crossing the Alps, he is doomed to disappointment. Except in the mountainous regions one of the most striking features of southern California to the visitor from the East is the absence of trees. After all one has heard and read about this land of sunshine and flowers, one looks for exuberant semitropical plant life, and is much surprised to find most of the land semiarid in character, and much of it a dry sandy waste. But this seemingly sterile soil is by no means cultureless; potentially, it is fertile and needs very little cultivation and intelligent handling to make it rich and productive. Many fruits and flowers indigenous to temperate and tropical climates will also grow in southern California. Here and there are richly cultivated regions, and these are very beautiful indeed.

During the dry season the principal source of water for this artificial vegetation is in the mountains, where the water is stored in artificial reservoirs when the winter snow melts. An elaborate system of irrigation is one of the features of southern California. For this purpose artesian wells are sometimes used. During the so called rainy season the mountain streams supply the water. Rivers as we understand them do not exist. There are the *arroyos*, or dry rivers, wide river beds, with a little stream in the middle, which, however, becomes a raging torrent after a heavy rainstorm. From May to October it never rains; this is the dry season. On leaving the east during this time, where everything is beautifully green, one is greatly disappointed on arriving in southern California to find uncultivated portions of the country dry and bare and brown. From November to April is the "rainy season;" since, however, it seldom rains more than six or seven times in all, this term is a misnomer. But a rainstorm will sometimes last three or four days, and the downfall is exceedingly heavy. There is always, however, fine sunny weather during intervening rainless periods, which last several weeks. In Los Angeles sixty-five per cent. of the year's rainfall occurs during December, January, and February. California holds the record for the heaviest daily as well as the smallest annual rainfall in the United States. The heaviest rainfall for a single hour ever officially recorded—eleven and one half inches—occurred at Campo, Cal., in August, 1891. On the other hand, in certain sections of the Colorado Desert, so far as is known, rain has never fallen. Several of the rainstorms referred to, which occur after the leaves have fallen and the flowers and grass have withered in our own section, cause the more fertile portions of southern California to become beautifully verdant. Hence the winter is the favorite time for visiting southern California.

While, therefore, this land of sunshine is hardly what a visitor expects to find, and is not without its disappointments, yet it has beauties which, as it were, grow on one. People who have lived in southern California for any length of time and go away often long to be back there, and are seldom quite satisfied with any other clime. Imagine during our winter a cottage on the mountain slope surrounded by orange groves, vineyards, magnolias, palms, eucalyptus, and walnut trees! Down the slope to the west is a beautiful landscape dotted with villages and brightened here and there with yellow poppy fields. In the distance are the blue Pacific and the faint outlines of the Channel Islands near the horizon, fifty miles or more away. Eastward are the huge purple mountains interrupted here and there with great gaps made by the cañons. Tall blue peaks, snow capped and glistening in the sun, rise heavenward in the far background. It is no wonder that with all this grandeur, and the balmy sunshine, blue sky, and invigorating air, southern California is so frequently spoken of as "God's own country."

Though at least five different kinds of local climate exist in southern California within comparatively short distances of one another, since they all have certain characteristics in common, the general climatography of this section will be considered first. The climate is spoken of as an all the year round climate. There are only two seasons, the wet and the dry; the seasons as we know them do not exist. The mean annual temperature in most of the well known resorts is about 60° F. The average variation of temperature the year round *at the same time of day* is not more than 15°. The following table, taken from the reports of the United States Weather Bureau, illustrates the equability referred to, and shows how much less is the temperature variation be-

tween midwinter and midsummer in Santa Barbara than in New York city:

	New York City.			Santa Barbara.		
	Mean monthly temperature. ° F.	Max. ° F.	Min. ° F.	Mean. ° F.	Max. ° F.	Min. ° F.
August	69	96	53	66	88	50
January	23	52	1	55	80	39
	46	44	52	11	8	11

So that in New York there is approximately a difference of 46° between winter and summer, while in Santa Barbara there is only a difference of 11°. But, as we shall see, equability of temperature alone is far from being a safe guide in estimating the healthfulness of a climate, and in this regard tables like the one given are apt to be misleading. If by equability we mean continuous equality the climate of southern California can hardly be called equable. While the annual and monthly variations of temperature in California are slight, the diurnal variation is great. Within the twenty-four hours there are great extremes of temperature, and during the heat of the day there is great difference between sunshine and shade. Late in the afternoon it always becomes cool, and the temperature may drop 20° in as many minutes. This sudden change is a great objection to the climate; but it is easily explained by the situation of southern California on the Pacific slope and its proximity to the ocean on the west, the mountains to the east, and the great deserts on the other side of the mountains.

As the air over the deserts is heated during the day, it rises and rushes westward to sea high above California, where the air on the slope is sucked up and is replaced by breezes from the sea. These westerly breezes temper the heat of the day and last till evening. Now, owing to the sandy character of the soil in this section, when the sun gets near the horizon, radiation from the earth's surface is very rapid. The air on the slope, therefore, cools rapidly, becomes heavy, no longer joins the desert air at an elevated altitude, but now flows down the slope to the sea. In the mean time the air over the deserts has cooled and descended, no longer rushing westward at a great height, but now proceeding westward near the surface to form a continuous current with the heavy air flowing down the slope. Thus the current changes. The sea breezes cease, and the mesas and valleys are flooded with pure dry air from the deserts. But this desert influence, so beneficent in the foothill country, does not appreciably affect the coast districts which become damp and chilly soon after sundown, and remain so all night. The humidity in the favorite resorts along the coast is, in fact, greater than in places in corresponding latitudes along the eastern coast. As the warmer air from the interior meets the cooler air from the sea, this moisture is visibly condensed, and there goes on rapidly the formation of fog.

We have now considered in a general way the two main objections to the climate of southern California: 1. The climate is equable only in the sense that every day is like every other day. There are marked differences between sunshine and shade; there are also diurnal changes of temperature which are frequently very trying. 2. The coast resorts are always damp at night, and during the spring and summer there are frequent fogs which appear soon after the evening chill, and do not lift until late the next morning. While this objection applies to the cities and favorite resorts along the coast, it does not apply to the interior deserts, the mountains, and some of the foothills.

Having considered the disadvantages, it remains for me to speak of the advantages of the southern California climate considered in toto, and then to enumerate and analyze the various climates met with in this region. The rigors of a northern winter, often trying the strongest constitution, are always escaped in southern California. The mountains afford protection from cold northern winds. It is not necessary to adapt one's mode of life to the changes of the seasons, for these hardly exist. Since from eighty to ninety per cent. of the days are sunshiny (in the insular and desert climates ninety-five per cent.), it is possible to be in the open air most of the time. Nowhere in the world can one enjoy greater variety of scenery and pleasurable occupation. Traveling not more than thirty miles in all, the writer has in the morning made snowballs on a mountain top (Mt. Lowe), at noon picked oranges in the foothills (at Altadena), and in the afternoon enjoyed a dip in the Pacific Ocean (at Santa Monica). Additional advantages are the moderate temperature, cultivability of the soil, and the presence of sanitary and prosperous towns.

There follows a brief enumeration of the more important climates met with in southern California:

1. *The Mountain Climate.*—With an altitude of 4,500 feet or more are resorts in southern California which possess the benefits and detriments of mountain climates in general. The air and the soil are dry, and the number of clear days is large; but the marked diurnal extremes of temperature, as well as the increased work of the heart and lungs necessitated by the rarified air, are likely to prove detrimental to the aged, the feeble, and those suffering from cardiac or respiratory insufficiency. The altitude is not, however, sufficiently great to cause mountain sickness.

2. *The Foothill Climate.*—Of the various climates met with in southern California this possesses the most advantages with the fewest disadvantages. As a result of the moderate altitude—1,500 to 3,000 feet—there are less fog, less humidity, and fewer cloudy days than near the coast; the nearby mountains afford shelter from the wind currents, and consequently the diurnal changes of temperature are reduced to a minimum. But any good climate depends upon something more than altitude, wind currents, rainfall, sunlight, humidity, proximity to the sea and mountains, etc. Of the formidable list of thirty-six climatic factors which Dr. Hann says ought to be embodied in a full discussion of the climatology of any locality, among the most important is geological formation. It is a common experience to have ob-

served marked differences in places close together in which all those factors except the last mentioned are the same. In one place, if one sits outside late in the afternoon of a summer's day, one notices the dampness and begins to feel chilled; in another place not many miles away one can camp out at night without any ill effects. The secret of the difference lies in the character of the soil; the former place probably has a deep, slaty subsoil, while the latter is probably rocky with a sandy covering. Great upheavals that once upon a time took place in the mountainous districts have resulted in geological formations contributing largely to the fine foothill climate, which possesses the combined advantages of dry soil, dry air, and moderate elevation without the disadvantages of greater altitudes or the coast districts.

3. *The Desert Climate.*—While possessing the advantages of dryness and equability the desert regions of southern California are nevertheless unsuitable for climatotherapy; for they are very hot, and the dry winds are laden with alkaline dust which is very irritating to the mucous membranes. Moreover, the desert lacks the conveniences of civilization. To obtain the combination of low altitude, considerable sunshine, dryness, as well as purity of the air and equability, it is necessary to go to New Mexico or Arizona.

4. *The Coast Climate.*—This we dismiss with a word, having already seen that the humidity, fogs, and extremes of temperature are serious objections to the marine climate.

5. *The Insular Climate.*—The only one of the Channel Islands inhabited to any extent is Santa Catalina, which is about twenty miles west of the mainland. Where the sea air agrees and considerable humidity is not an objection, this insular climate is amongst the best of all. Ninety-five per cent. of the days are sunshiny; the fog, so frequent along the coast of the mainland, is seldom seen here, and the temperature is much more equable.

We come next to consider in a general way the effects of this climate in health and disease. As a result of the moderate degree of heat throughout the year combined with considerable atmospheric moisture, healthy residents of southern California exhibit a certain degree of lassitude—the usual sedative influence on the nervous system of a warm, moist climate. On the other hand, healthy visitors from the East, after they have recovered from the severe "cold" which usually develops during the first weeks of residence, become energetic and gain in weight. This difference is illustrated by the very walk of the visitor; the New Yorker in Los Angeles shoots ahead of the natives on the street and is easily recognized as an Easterner by his rapid gait. This primary stimulating influence has therapeutical practicability for those temporarily weakened by disease. Moreover, since so many of the days are sunshiny, the convalescent can be kept out of doors practically all of the time.

From endemic diseases southern California is practically free. There are no marshes, mosquitoes, or malaria. Measles, scarlatina, and diphtheria do occur, but they are much milder than in the east, and are seldom followed by complications. In the east the infant mortality from bronchopneumonia during the winter and spring, and from gastrointestinal affections during the summer, is very high; in southern California gastrointestinal trouble in children is mild and infrequent, and, as is usual in seasonless climates, bronchopneumonia is almost unknown. That lobar pneumonia is uncommon is shown by the fact that three years ago a physician with a large general practice in Pasadena had in twenty-one years of active work seen only three cases. Pneumonia of the aged, so common in the east during the spring, is rare in southern California. Euthanasia is said to occur more frequently in southern California than in any other part of the United States. In the cities typhoid fever is fairly common. So far as could be ascertained three years ago, cerebrospinal meningitis is extremely rare. During his nine months' visit in southern California the writer failed to investigate the occurrence and frequency of influenza, and is unable to give any reliable information on the subject. Insolation is unknown. While myalgia, neuralgia, sciatica, acute articular, and subacute rheumatism are fairly common amongst residents, these ailments are exceedingly frequent amongst visitors—presumably because of their unsuitable wearing apparel and unfamiliarity with the sudden temperature changes. On a foggy morning the stranger goes out with an umbrella, an overcoat, and flannel underwear; the umbrella causes the natives to smile, for they know that on a foggy day it almost never rains, and if it did the heavy downfall would render the umbrella useless; the overcoat he does not need because late in the forenoon a strong sun will make it very warm; the flannel underwear he changes because of the very warm afternoon, and when the unfailing sudden drop of temperature comes late in the afternoon it causes him to be thoroughly chilled and to suffer the next day from one of the affections mentioned. Recurring attacks of tonsillitis in children, accompanied by rheumatic pains, so common in the cities of temperate climates because of the meteorological conditions, are of infrequent occurrence in southern California. Chronic nose and throat troubles are common in the cities and towns where there are sudden temperature changes, wind and dust; in the desert districts, the alkali laden winds aggravate these conditions; on the other hand, the insular and foothill climates exert a sedative influence on chronic nasal, pharyngeal, and laryngeal catarrhs. In the climatic treatment of asthma, such a climate as will affect most favorably the cause of the illness should if possible be recommended; if the cause is undiscoverable, as is so often the case, southern California because of its great diversity of climate within a small extent of territory furnishes an excellent field for travel and experimentation, it being found that in selected cases mountain altitude, depressed desert and insular climate all exert a beneficial influence on the disease. As regards cardiac and vascular diseases, there are no special advantages offered by southern California. In chronic ne-

phritis removal from the irregular changeable weather prevailing in temperate climates to the warm seasonless climate of the California foothills or of Santa Catalina Island may exert an influence for good upon the disease.

One of the peculiar effects of great altitude being an increase in the erythrocytes, hæmoglobin percentage, and oxygen absorbing power of the blood, according to Dr. Solly "cases of pure anæmia or those in which anæmia is the controlling factor . . . without grave complications from catarrhal, inflammatory, irritable, nervous, or cardiac conditions," are greatly benefited by residence in the mountain resorts. Because of the abundance of sunshine, variety of scenery, and diversity of exercise and amusement offered, a visit to southern California has frequently proved beneficial in the treatment of neurasthenia and hypochondriasis.

As regards the climatic treatment of pulmonary tuberculosis in general, it may be said that few problems in the whole range of practical therapeutics present to the practitioner greater difficulties than advice to consumptives as to change of climate. This complexity arises to a great extent from the existence of so many considerations extraneous to the physical status of the patient and to the probability of cure or improvement under favorable climatic conditions. Before any proper advice in such a matter is possible, we must needs be confronted by a whole host of questions such as the following: Will the patient's financial and physical conditions permit of a change at all? Assuming that he has plenty of means and is strong enough to stand the journey, will the lack of care, comforts, and conveniences offered at home by relatives and friends be outweighed by the possible climatic benefits of migration to a distant land? Are the mental peculiarities and temperament of the patient such that individual evil influences of nostalgia, imprudence or unwisdom will overbalance the possible physical improvement? Granted that a change of climate is practicable and advisable, which is more likely to be necessary, a temporary or a permanent change? If the former, will it not be advantageous to select a climate somewhat similar to that in which the patient will be compelled to live after practical cure? Assuming that a permanent change is indicated, that the patient lives in a changeable climate and that his condition is known to have been favorably influenced by certain seasons and unfavorably by others, is it not advisable to send him to a climate possessing the qualities of the former seasons and lacking those of the latter? These are some of the questions we ought to ask our patients and ourselves before advising a change of climate at all.

The rôle of southern California in the climatic treatment of pulmonary tuberculosis being an important and extensive one, there naturally arises the question: What are the factors in the southern California climate making it a remedial agent in the treatment of this condition? This question is not difficult to answer if we recall that the benefits formerly attributed solely to inherent qualities of various climates are now known to be derived principally from life in the open air and adherence to dietetic and hygienic principles. In the choice of a suitable climate for consumptives modern authorities are inclined to regard as unimportant factors altitude, temperature, humidity, and variability, provided they are not extreme, and to pay more attention to the existence of sunlight, pure air, and opportunities for proper hygienic and dietetic treatment.

There are good reasons why Alfred Meyer and, in fact, all phthisiologists harp on the importance of plenty of fresh air in the treatment of tuberculosis. Some years ago it was demonstrated by Trudeau and others that animals successfully inoculated with tuberculosis would succumb to the disease when confined, whereas they would recover when kept in the open air. When Indians are brought from the plains to dwell indoors, and when negroes are brought from Africa to work in factories, they often succumb to tuberculosis; whereas among Indians assigned to reservations and negroes working on plantations tuberculosis is less common. Moreover, it is the universal experience of physicians suffering with tuberculosis that their condition is improved by plenty of fresh air.

It may be said, then, that southern California does possess the requisites for the successful climatic treatment of tuberculosis; for, as we have seen, in certain regions there are plenty of sunshine, pure air, sanitary towns, opportunities for outdoor work and diversion, good physicians, and modern sanatoria. According to William R. Huggard, "California is especially suitable for persons of moderate vitality, who have little or no active disease, but who have a predisposition to pulmonary trouble and who would be likely to break down under the wear and tear of life in England or in the larger cities of the eastern States of America."

The incipient cases of pulmonary tuberculosis, or those in the stage of infiltration, frequently do well in almost any part of southern California, and to effect a practical cure a prolonged visit is often sufficient. In these cases work is often a distinct advantage, provided it is in the open air. If we hold the belief of some authorities that in incipient cases altitude is of great value, then we should send our patients to Colorado rather than to California; for in Colorado may be had the combined benefits of remunerative occupation and continuous pulmonary gymnastics, whereas in the California mountain resorts there is little work to be had and the evils of idleness and introspection naturally result.

Just as important in climatotherapy as in other forms of treatment is individualization. A case which, according to extent of pulmonary involvement, might be classed as incipient may, because of the virulence of infection or marked reaction of the individual, be less amenable to climatic treatment than an advanced case with cavity formation in which the recuperative powers of the patient are considerable and the lesions nonprogressive. Always to be kept in mind is the fact that in the same individuals different degrees and kinds of tuberculosis, as well as in different individuals the same degrees and kinds of tuberculosis, require very different treatment.

In cases of moderate severity and extent or those in the stage called by the older writers the stage of softening, it may also be advisable to send the patients to southern California. But experience has proved that for permanent practical cure in these cases a migration rather than a prolonged visit is required. The selection of a local climate will depend largely upon the physical and financial condition of the patient. In any case, the patient should be advised to place himself on arrival under the care of a local physician. If he is robust and has means he should at first go to the mountains and should rest—preferably to a mountain sanatorium; later, when improvement has taken place, he should go to the foothills or to Santa Catalina Island and follow an outdoor occupation. If he is robust and poor or if he is weakly and well to do, he should at once go to the foothills or to the small towns near the foothills. The writer is firmly convinced that it is far better for such a patient to remain at home than to go to a city near the coast, such as Los Angeles, whose climate is an example of the worst, for the treatment of pulmonary tuberculosis, to be found in southern California. What constitutes a remarkable feature of this section is the fact that, while the climate of Los Angeles is so objectionable, yet not many miles away are to be found regions almost ideal for the treatment of pulmonary tuberculosis. In the foothill country—almost within gunshot of this progressive city—are "benches," with an elevation of about 2,000 feet, where the soil and air are dry, and where fog, frost, and marked diurnal temperature changes are absent. In 1880 the California State Board of Health selected as the best location in southern California for consumptives the town of Sierra Madre, twelve miles northeast of Los Angeles. Surprising is the sparse population of this district, probably the most desirable in southern California for invalids.

If a patient whose disease is moderately advanced is both weakly and poor, not until his admission to a sanatorium is assured should he be sent to southern California at all? Undoubtedly the sanatorium treatment, possessing both curative and educational value, is the best for both rich and poor consumptives alike, who after cure and discharge become centres for the diffusion of correct hygienic and dietetic principles. Unfortunately first class sanatoria in southern California are beyond the means of most patients, and the State of California justly refuses to provide efficient open air treatment for the indigent sick of other States.

Having considered the incipient cases and those of moderate severity, since only a small proportion of the advanced cases even under the most favorable conditions recover, I may dismiss these last with the warning that it behooves us as physicians to be very conservative in this matter and to ponder well before sending advanced cases to a distant clime away from home and friends. It is very unfortunate that as a result of the ignorance of the medical profession in this regard, a great number of patients who with propitious surroundings in their native State might improve or recover, are sent away to California to die. The long railway journey may in itself prove disastrous; the dietetic tribulations, the badly ventilated and overheated cars, and the fatigue of the long trip contribute largely to a termination which, in these advanced cases, is almost inevitably fatal.

Our own knowledge as to choice of climate being so meagre, it should not surprise us if the unfortunate patients with advanced tuberculosis who are heartlessly told that they have consumption and must go to California, are unable to select a proper climate on their arrival. Is it not better for a poor patient to eat and be cared for in New York than to starve and be forsaken in California? The patient of means who on arrival in California seeks expert advice may possibly be sent to an adequate sanatorium, fortunate circumstances which may result in his improvement or cure. But the wealthy patient who because of his repugnance for hospital treatment refuses to go to a sanatorium is likely to be sent first to the foothills. Having tried this climate for a week, tired after the journey, and suffering from the usual "cold" of the visitor, he of course notices no improvement and therefore decides to try the mountain climate. Being one of those cases for whom altitude is injurious, his condition continues to grow worse, and as a last resort he migrates to the coast, than which his native city in the east is probably less harmful. The sad ending of the story is that his death is hastened by the worry, fatigue, and detriment attendant upon all these changes.

That crying ills of which these are examples are by no means uncommon is forcibly brought out by Dr. A. Jacobi in an article warning us of the dangers of exile in the treatment of tuberculosis. In southern California, at any rate, these evils are real and far reaching; therefore we should not order a migration to California without first having familiarized ourselves with its meteorological facts and climatic data.

Nine years ago, S. Edwin Solly, appreciating these evils and the need of their correction, urged upon the medical profession the necessity of instruction in the medical schools of at least "the broad principles of climatology and the outlines of climatic therapeutics." While it must be admitted that the scope of climatology in the domain of practical therapeutics is a limited one, yet real benefits frequently accrue from its proper employment just as undoubted harm frequently results from its improper application. These seem to us sufficient reasons for urging the introduction of the study of medical climatology into medical curricula—a course which would tend to increase the value and benefits as well as to eliminate the dangers and abuses of practical climatotherapy.

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ABDOMINAL PREGNANCY. REPORT OF A CASE.*

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Extrauterine gestation is productive of one of the gravest emergencies the surgeon is called on to treat. This abnormality was probably first described by Albucasis, an Arabian physician of the eleventh century, and later by Riolanus; while abdominal section was probably first done for this condition by Nufer in the year fifteen hundred. Mauriceau in 1669 clearly described the condition. Desmeiris in 1836 gave the world a classification used to-day. Lawson Tait was the first surgeon who had a wide operative experience in this condition, and he was able to set his brother colleagues an example of success to follow.

The frequency of this condition varies much with the individual statistics of different operators. Some assert as having had as many as one out of every hundred cases, while others have found only one in twenty thousand. In latter years there has been an apparent increase in the number of cases. This is probably due to several causes, among which may be mentioned more knowledge concerning the subject, growing popularity of operative treatment, probable increase of gonorrhœa, and the commonness of abortion. There can be no doubt that in former times many cases went unnoticed, and that even now cases are not infrequently overlooked. The true nature of many cases of hæmatosalpinx, hæmatocele, and blood cyst of the ovary is misunderstood.

Formerly many cases of ectopic pregnancy were considered to be primarily abdominal. Latterly since we have come into a more exact knowledge of the subject the secondary form has been considered the rule, and the primary form the exception in abdominal pregnancy. Nearly all cases have followed tubal abortions. A few writers on the subject have gone so far as to deny that such a thing as primary abdominal pregnancy ever occurs.

The most trustworthy statistics on the subject tell us that eight and one half per cent. of all cases of eccyesis are abdominal in character. In the primary form the ovum falls into the peritoneal cavity and becomes fixed there. The secondary form arises by rupture of a salpingocyesis by which either the fœtus alone or the whole product of conception is thrown free into the abdominal cavity. At the time of occurence of the tubal abortion the placental attachment to the tube must remain at least in part undisturbed until new attachments and a new circulation can be formed.

Ætiology.—The specific cause of an individual case is exceedingly obscure. Generally speaking, whatever condition prevents the passage of the ovum to the uterus, but which does not prevent the passage of the spermatozoon to the ovum may bring about this state. Most cases occur in women between the twentieth and thirtieth years of life. To classify causative factors we have malformations (congenital or otherwise) and pathological conditions of the tube. Under the first class we have diverticula, etc. Under the second class are any and all inflammatory states which will result in hyperplastic or neoplastic tissue, these conditions leading to obstructions of the lumen of the tube. The ciliated epithelium lining the tube may be destroyed and the walls of the tube infiltrated. Inflammation bands of peritonæum may distort or compress the tube. Thick mucus in the lumen or the external pressure of an abdominal growth may block the way. Recurrent cases are rare. A large number occur in women who have been relatively or completely sterile. The average time elapsed since last pregnancy was four and one-half years. It occurs most often in multiparæ and is more likely to follow a full term pregnancy than a miscarriage or an abortion. It is generally conceded that extrauterine pregnancy is due to mechanical defects of some sort. As in many respects abdominal pregnancy is but the variant of a general type, I will consider the subject of ectopic gestation as a whole.

Pathology.—Under the primary forms we have

* Read before the Virginia Medical Society at a meeting held at Charlottesville, Va., on October 11, 1906.

(1) ovarian, (2) abdominal, (3) tuboovarian, and (4) tubal, which is divided into ampullar, isthmial, and intestinal. All in accordance with the location of the conception product. The ovum develops usually toward the outer end of the lumen of the tube. As it grows the sides of the tube expanding become much hypertrophied and assume a spindle shape. The growth is not regular and even, and some parts may be thin and easily ruptured. This usually takes place at the upper portion of the tube. The ovum is usually surrounded by the amnion and the chorion, the latter being fixed by its villi to the mucous lining of the tube. Owing to the comparatively brief stay of the ovum in the tube a true placenta is not usually formed there. A hyperplasia of the tubal tissues forms a sort of pseudodecidua, the uterine extremity of which at times is found open in continuation of the uterine cavity. By reason of the loose attachment of the chorionic villi, they are easily lacerated causing hæmorrhage which often produces rupture of the tube. Tubal abortion is apt to occur before the end of the second month. The conception product seldom escapes from the end of the tube and usually is freed by rupture. In a few cases rupture does not take place, and a fleshy mole is formed similar in nature to that which is sometimes formed in the uterus. The primary abdominal form occurs when the ovum becomes fertilized in the abdominal cavity. Occasionally the ovum becomes implanted on the fimbria ovarica, or it may become fixed to the bottom of the *cul-de-sac* of Douglas, either of the iliac fossæ, or to the intestines. Tuholske reports a remarkable case in which the attachment was mainly to the under surface of the liver, the case going nearly to term.

The surface of attachment in the beginning is necessarily small, but the placenta after it begins to form rapidly radiates and becomes attached to numerous points. The peritonæum under the ovum becomes much congested and thickened, a sort of cyst wall is formed which contains many bloodvessels. This surrounds the ovum, and forms a false decidua, while within the uterus a true decidua is formed.

The secondary form may occur after the rupture of an extrauterine or intrauterine gestation sac and the escape of its contents into the abdominal cavity; provided the circulation and nutrition is maintained the embryo continues its growth in whatsoever part of the abdomen it has lodged. Fœtal membranes are developed about the ovum, while the placenta may or may not change its site and attachments. In the uterus the changes are much the same as in normal pregnancy. For the first three or four months changes of the endometrium and hypertrophy occur, after that the uterus remains practically at a standstill. Absorption is the fate of the fœtus which has been extruded into the abdominal cavity, unless conditions favorable to a continuance of the circulation remain. The escape of the fœtus from the tube usually happens between the eighth and twelfth weeks.

The termination of metacyesis in untreated cases when not immediately fatal, as most of them are, often insures for the patient a life of invalidism. The fœtal parts, in event of the survival of the individual may ulcerate into the bladder or intestines, or through the abdominal wall. The presence of a dead fœtus acting as a foreign body will most naturally bring about numerous adhesions with the varying results that follow in their train. The sac containing a living or dead fœtus is apt to rupture sooner or later. The woman may succumb at once from severe hæmorrhage or die later from the anæmia produced by successive hæmorrhages. If the rupture cyst contains a dead or petrified fœtus, death from peritonitis is almost sure to follow. It is quite possible at the end of a primary or secondary abdominal pregnancy for rupture of the cyst and escape of the fœtus to take place without provoking either hæmorrhage or peritonitis. The final fate of the dead fœtus is quite variable. If death occurs during the first months the fœtus may be completely absorbed. At a later period this disappearance cannot take place. Suppuration and partial liquefaction, conversion into adipose tissue, mummification, or calcareous infiltration with the formation of a lithopædion may result. The cyst may, especially in old cases, ulcerate or rupture through the abdominal wall, into the intestine, vagina, bladder, uterus, or by various channels, the greatest number by the first named channel and the remainder following in the order named.

The symptoms are divided into those common to all varieties, and those peculiar to individual varieties. Of the first class are the reflex symptoms which belong to all normal pregnancies. The nausea and vomiting are commonly severe and begin usually early in pregnancy. Two symptoms specifically point to extrauterine gestation. They are the bloody discharge, and the abdominal pains which are as a rule colicky and sharp, they start from the region of the tumor and radiate downwards and outwards. These pains may begin about the first of the second month and last throughout pregnancy. The acme of their severity is about each menstrual period, and there may be an intermission of entire freedom from them between the periods. During these attacks of pain the abdomen may be swollen and tender to the touch. The pulse is accellerated, but there is no temperature rise. The bloody discharge from the uterus occurs in a majority of patients. This phenomenon is usually accompanied by pain and the expulsion of the decidual membrane, the discharge being due to rupture of the decidua, of a seropurulent, coffee-colored or reddish nature, and may be apparently so profuse as to call for the tamponade. In the primary abdominal type there may be no disturbance of the menstrual function. The return of the menses is indicative of fœtal death. The rectum may be irritable, and pulsation can often be elicited by vaginal palpation. The most typical symptom is metrorrhagia coincident with the symptoms of pregnancy in its early stages. If associated with this is a discharge of decidual tissue one should expect extrauterine gestation.

False labor may be premature happening at the seventh or eighth month, but usually makes its appearance at term, rarely afterwards. At

that time the patient has intermittent pains analogous to true labor pains. The cervix does not become obliterated, but dilates sufficiently for the entrance of one or two fingers. After the decidua is expelled the pain ceases and does not return unless there has been a rupture of the fœtal sac. The signs of labor will disappear, and milk will come in the breasts.

The symptoms of rupture are sudden and severe pain radiating over the abdomen, rapid weak pulse, air hunger, shock, and other concomitants of hæmorrhage. There is apt to be nausea, hiccough, and extreme tenderness of the abdominal walls. The escape of the fœtus from the tube without much loss of blood is marked by severe pain referable usually to the side, tenderness of the abdomen, and often a temperature rise. The rupture may be spontaneous or provoked by some slight trauma.

Physical Diagnosis.—The os and cervix are often soft, and either firmly confined by adhesions or pushed entirely out of their natural position by the rapidly enlarging cyst. Fœtal pulsations may be felt through the vaginal wall, and the fœtus can at times be outlined in the same way. There are two tumors, one of which is usually situated to the right or left of the median line. A sulcus between the adventitious body and the cervix can be made out. In some cases the fœtus is palpable through the abdominal wall. On manual examination of a cyst containing a dead fœtus of considerable size crepitation of the bones may be obtained. The uterus remains stationary in size after the fourth month. Fœtal heart sounds and movements are discernible after the fifth month.

Diagnosis.—The diagnosis is nearly always difficult, and cannot be made with certainty during the first period. At that time the diagnosis of probability constitutes an ample reason for surgical interference. It may be taken for ovarian cysts, fibroid tumors, several forms of salpingeitis, and hæmatocele. It may possibly be differentiated from these by the history, the malposition of the uterus, and by the disturbances of pregnancy. In the second period of pregnancy diagnosis is not so difficult, but it is nearly always impossible to distinguish one variety from another. In making a diagnosis we have what we can elicit from the story of the patient in her own words, her replies to minute questionings, and a physical examination. After the escape of the fœtus from the tube and the beginning of the secondary abdominal type, the acute symptoms may subside, but there are apt to be recurrent attacks of pain. An apparently normal condition necessarily tends to throw the physician and patient off their guard. The diagnosis is naturally difficult, because of the irregularity of the symptoms, the frequency with which it is simulated by other conditions, and the ease with which the bleeding with or without expulsion of the decidua may be taken for an ordinary abortion. Probably there are few conditions more plain to the careful observer than a typical case of exfœtation, but comparatively few cases are typical. The diagnosis of abdominal pregnancy is rather rarely made prior to false labor, for the reason that the physician's attention is seldom called to the case. We should regard sudden collapse associated with pallor and other symptoms of intraabdominal hæmorrhage in any woman having a possibility of pregnancy as prima facie evidence of ruptured ectopic gestation sac. A period of amenorrhœa usually precedes the bloody discharge which does not correspond in nature nor necessarily in point of time with the natural monthly bleeding. Important points relative to the bleeding are the color, the persistence, and the presence of membrane or pieces of membrane. Among the most characteristic symptoms are the variable period of amenorrhœa, irregular uterine hæmorrhage, pelvic pain, and discomfort, and the shedding of the uterine decidua.

Prognosis.—Abdominal pregnancy means death to the fœtus in nearly all cases, and to the mother in one half the cases. Club foot and other deformities are apt to be present in the child, owing to the deficiency of amniotic fluid and the pressure on the sac walls. The outcome in untreated cases not ending fatally is chronic invalidism.

Treatment.—The first reported, definitely planned operation after a specific diagnosis was performed in 1885 by Veit, of Berlin. Immediate operation is advisable if a diagnosis can be made during the first period, or even if there is a suspicion of exfœtation, which is backed by good circumstantial evidence. After the fifth month has elapsed and the fœtus is still living, if its preservation is deemed desirable the woman should be kept very quiet in order to minimize the chances of rupture and to give her an opportunity to go to term. This pregnancy is like a mine, ready to explode without a moment's notice, and it is highly important that the patient be in easy reach of competent surgical skill at all times.

It is nearly always best to approach these pregnancies by a median laparotomy. Complete removal of fœtus, membranes, and placenta is highly desirable. By reason of dense adhesions great danger of hæmorrhage or dangerous condition of the patient this procedure will at times be impossible. Under such circumstances the edges of the opening in the sac should be sutured to the parietal peritonæum and the sac carefully drained. The placenta in such cases will come away gradually by fragments, and in two or three weeks its exfoliation will have been complete. Surgical intervention should take place as early as possible after the death of the fœtus. If the cyst in such case is in the cul-de-sac vaginal section is appropriate; after the extraction of fœtus and placenta the cavity had best be packed with a five per cent. iodoform gauze. I wish to urgently emphasize the absolute necessity for removal as early as a diagnosis can be made, and the stringent indications for immediate operation when we see a pregnant woman showing symptoms of intraabdominal hæmorrhage.

Report of Case.—In connection with the foregoing I will report the following case: The patient, S. J., a young married woman, twenty-eight years old, was referred to me by Dr. C. W. Lemon, of Claremont, W. Va. She had not been under the immediate notice of the attending physician much of the time. He had

been called on occasionally to prescribe for abdominal pains of a rather vague and indefinite character. The patient was of a comparatively ignorant and unobservant type. The true nature of the trouble had so far gone undetected. The woman considered herself pregnant about six weeks when she entered the hospital March 28, 1906. She, according to her statement, had been suffering a good deal from indigestion, associated with nausea, her monthly periods had been irregular and painful for some months, and the last month had been especially painful.

On physical examination I found a large mass posterior to the uterus which apparently extended up well into the pelvis, a uterus which in enlargement appeared to resemble closely that usually found about the fourth month of pregnancy. This organ was low in the pelvis and fixed in its position. There was considerable pelvic tenderness, fœtal heart sounds could be heard, and the case was diagnosticated as one of abdominal pregnancy. The heart, lungs, and kidneys were normal, so far as could be ascertained at the time. Several times there was an evening rise of temperature, but on no occasion did the temperature rise above 100° F. The stools were regular, percentage of hæmoglobin about normal. As the patient was quite comfortable when in a sitting or lying position, and as she was quite desirous of prolonging the pregnancy I decided to keep her under observation for a time. Seven days passed without a particular event, although the patient suffered some pain, and was occasionally nauseated. The evening of the seventh day the patient had a very severe pain in the abdomen, but did not mention it for fear of having to undergo an operation. The next morning about 7.20 trouble began. The abdominal pain was agonizing, the symptoms of hæmorrhage were typical and severe in character. The radial pulse became almost imperceptible. Adrenalin in saline solution was administered every fifteen minutes hypodermatically, 750 c.c. of saline solution was administered by hypodermoclysis. The patient was prepared for operation, which was begun at 8 o'clock a. m. At this time the pulse was running from 150 to 160 per minute, respirations 48 to 54 per minute. Another 750 c.c. of saline solution was administered during the operation, which lasted for thirty-five minutes.

Operation. Median laparotomy. The fœtus, its cyst wall, and the placenta were removed as rapidly as possible. The placenta had been ruptured, and there was a great deal of free blood in the abdominal cavity. Some of it clotted, indicating previous hæmorrhage. The tubal attachments of the pregnancy were slight, indicating either a primary abdominal pregnancy or an early rupture of the tube. The placental implantation was extensive, including right and left pelvic walls, rectum, posterior surface and fundus of uterus, omentum coils of small intestine, sigmoid colon, bladder, and parietal peritonæum of the abdominal wall. Injuries to bowel were repaired, and denuded areas covered so far as practicable. The blood was removed by dry sponging, and the wound of the abdominal parietes closed by layer sutures of chromic gut without drainage. The fœtal development would indicate that the twenty-second or twenty-third week of growth had been attained. The fœtus was ten inches in length, and weighed one pound and two ounces. The cord was twelve inches in length. As the placenta was removed piecemeal, it was difficult to get a correct estimate of its size or weight. Another hypodermoclysis of saline solution along with adrenalin solution was administered. The pulse gradually fell to 120 that afternoon. Improvement was rapid, and convalescence without noteworthy event. Patient left the hospital on the thirteenth day after the operation in a good condition.

Summary.—The greater actual frequency of ectopic pregnancy than the number of observed cases would lead us to believe: The usual irrelevant and atypical nature of the symptoms; the difficulties in the way of making a diagnosis and necessity for a careful study of the cases, in which this condition might be suspected, both in its present and past aspects; the importance of studying the character of the uterine discharges; the association of this with pelvic pain and discomfort, and the signs of pregnancy; the advantages of prompt operation, removal of blood and other débris by dry sponging without irrigation, thorough hæmostasis, and the closure of wound without drainage.

Sheltering Arms Hospital.

AN UNUSUAL CASE OF SUPPRESSION OF URINE.

By H. D. Howe, M. D.,
Hampton, Va.

The patient was operated upon three years ago for carcinoma of the fundus of the uterus by Dr. Gwathney, of Norfolk, Va., a vaginal hysterectomy being performed. Six months following a perfectly normal convalescence, a left femoral phlebitis developed, and a few months subsequent to this there was some slight bloody vaginal discharge. She consulted a very capable physician in Charleston, S. C., who found some granulation in the vaginal vault, and cauterized it, but no evidence of recurrence, and considered the phlebitis a postoperative condition. The patient suffered great abdominal pain in addition to that due to the leg, and was practically bedridden for several months. Later she came here to be with her family, and put herself under my care.

At this time I found enlargement of the inguinal glands and considerable swelling of the left leg. The vaginal vault was smooth, and the scar excellent, but there was induration, and felt on the right side especially evidence of new growth. One mulberrylike granular mass was present on the vaginal surface, one inch behind the meatus urinarius, and this I removed. On section by capable pathologists, it proved to be carcinomatous.

The progress of this case for the next six months was progressive failure with great abdominal pain, especially referred to a point just above each anterior superior spine, and extending towards the bladder and down the sides. A mass could be easily detected on the right side above the anterior superior spine.

On May 17, 1906, the patient passed no urine, but as vomiting had been excessive the day before and perspiration copious, I attributed it to this cause. The nurse was specially instructed to collect carefully all urine, even if with the stools. The following day none was passed, and there was no evidence of any urine in the bladder, and no desire to urinate. The catheter gave negative results. Thinking it possible there may have been some communication with the rectum, I injected methylene blue in the bladder, but the whole amount, and that only, was returned from the bladder. The desire to urinate became very urgent in the next day or two. She would make repeated efforts to empty the bladder, each time with great expectation, but accomplishing nothing. Peculiarly, all other pain disappeared, and from this time no opiate was given, except to quiet the nervous symptoms which later developed. A very distinct mass began to develop on the right side below the ribs, extending nearly to Poupart's ligament. This was diagnosticated as hydronephrosis subsequent to blocking of the ureters with a carcinomatous mass. The absence of such a mass on the left was difficult to explain.

The mental condition of the patient was perfectly

clear until June 3rd. Vomiting was excessive at all times, and consisted of the stomach contents and bile stained fluid in large amounts. This later gave a strong urinous odor. The bowels were at first constipated, and later the stools consisted merely of returned discolored salt solution which was given twice daily to alleviate the intense thirst, but for the last ten days of life was discontinued, as the bowels rejected it at once.

Mild uræmic symptoms developed on June 3rd, seventeen days after the excretion of any urine, and progressively increased, until the patient died eight days later. True coma did not develop, and no general convulsions occurred, though twitching and local spasms were frequent.

The autopsy showed the left kidney to be a mere thin walled cyst, containing about ten ounces of clear fluid. The thick abdominal walls, the thinness of the cyst walls, and its situation beneath the ribs, were the evident reasons for its being overlooked. There was no macroscopic evidence of kidney structure. The ureter was obliterated at the pelvic brim by a carcinomatous mass, originating from the stump of the broad ligament and involving the sigmoid and rectum. The right kidney showed true hypertrophy of the kidney structure, as well as great dilatation of the pelvis. It measured ten inches in length, four and a half wide and three thick, and contained nearly a pint of urine. There was a small carcinomatous involvement of the lower portion. As on the left, the ureter was entirely obliterated by a carcinomatous mass arising from the stump of the right broad ligament. There was of course reabsorption and subsequent vomiting of the urine secreted by the right kidney.

I report the case as of interest in showing how long —twenty-five days in this case—such a condition can persist. The subsidence of pain after blocking of the ureters is, I believe, not unusual.

I know of but one similar case to the one here described. Dr. S. C. Gordon, of Portland, Me., writes me of a patient upon whom he operated for carcinoma of the right kidney. This patient lived for twenty-seven days and twelve hours, without secreting a drop of urine, or showing any signs of uræmia. The autopsy showed an entire absence of the left kidney.

176 VICTORIA AVENUE.

Correspondence.

LETTER FROM TORONTO.

The Muskoka Cottage Sanatorium.—The Muskoka Free Hospital for Consumptives.—The Toronto Free Hospital for Consumptives.—A New Magazine.—The Ontario Medical Council.—Professor Osler.

TORONTO, *December 5, 1906.*

The National Sanitarium Association of Canada conducts three institutions, having for their object the treatment of consumptives, and the annual meetings of these were held on the 22nd and 24th of November in Toronto. Dr. J. H. Elliott, the physician in charge of the Muskoka Cottage Sanatorium, which treats pay patients, was present and presented the annual report of that institution. This, the parent institution of the association, treated during the past hospital year 236 patients, a larger number than in any previous year. During the nine years that this sanatorium has been established it has treated 1,287 patients. The medical reports show that the results of treatment continue to be eminently satisfactory. One table shows that, of ninety-two discharged apparently cured, five have died of other diseases, sixteen relapsed, and eight died of the disease; seventy-seven per cent. remain well. Of a series of 159 arrested cases, seventy-nine, or fifty per cent., of the patients are as well as on the day they were discharged, six and a half years ago. During the past year a new seven roomed cottage was built at a cost of $5,700. Four additional tent cottages were built, making the total now in use sixteen. These additions have over eighty available beds.

Dr. C. D. Parfitt, the physician in charge of the Muskoka Free Hospital for Consumptives, which is also situated at Gravenhurst, presented the annual report of this institution. This hospital is for patients who do not pay and for incipient cases only, and was first opened in April, 1902. One hundred and eighty-six patients were admitted during the course of the hospital year, and the daily average in residence was fifty-five. Seven hundred and fifty-two patients have been cared for in the four years the hospital has been doing work. During the past year a residence for the physician in chief has been built, costing over $5,000. Instructions have been given and plans prepared for an administration building to cost $15,000.

The Toronto Free Hospital for Consumptives treats the advanced consumptive. It is presided over by Dr. W. J. Dobbie, who reports as follows: One hundred and forty-nine patients were admitted during the past year. All told, the institution has cared for 336 since it was opened, two years ago. In connection with this there are at the present time being erected new and carefully planned buildings which will provide the nucleus for a new sanatorium for advanced patients who can pay. There is no such institution in Canada to-day. This will be ready for occupation about June, 1907. Buildings and improvements to the extent of $20,000 have been added during the past year. Two wards have been set apart for children.

The National Sanitarium Association of Canada has established a new magazine, known as *Canadian Outdoor Life*. Its purpose will be to advocate the outdoor treatment of tuberculosis, and it will also have useful educational matter on the hygiene of living.

The following candidates have been elected by acclamation to the Ontario Medical Council for the term of four years: Dr. John L. Bray, of Chatham; Dr. J. McArthur, of London; Dr. J. A. Robertson, of Stratford; Dr. Henry, of Orangeville; Dr. P. Stuart, of Milton; Dr. S. H. Glasgow, of Welland; Dr. E. E. King, of Toronto; Dr. H. Bascom, of Uxbridge; Dr. S. C. Hillier, of Bowmanville; Dr. A. E. MacColl, of Belleville; Dr. W. Spankie, of Wolfe Island; Dr. J. Lane, of Mallorytown; and Dr. M. O. Klotz, of Ottawa. Election is in progress in the Woodstock district, St. Thomas, Guelph, Sault Ste.-Marie, and Toronto west. In the latter the contest is three cornered, the candidates being Dr. A. A. Macdonald, Dr. Bruce L. Riordan, and Dr. J. S. Hart.

Dr. Osler is expected from England shortly to participate in the centenary celebration of his mother's birth. She lives in Toronto. It is expected that while here he will address the medical men of Toronto on the proposal to establish an academy of medicine for this city.

Therapeutical Notes.

Night Sweat:

℞ Quininæ bisulphatis, ...0.5 gramme;
Tinct. hyoscyami, ...6.0 grammes;
Syrupi simplicis, ...25.0 grammes;
Infus. chamomilli, ...100.0 grammes.
M. S. Every three hours one tablespoonful.

Bulletin général de thérapeutique.

Suppositories for Hæmorrhoids:

℞ Chrysarobini, ...0.08 gramme;
Iodoformi, ...0.02 gramme;
Extract. belladonnæ, ...0.01 gramme;
Olei cacao, ...2.0 grammes.
M. One suppository.
S. To insert every evening one suppository.

Bulletin général de thérapeutique.

Local Application in Mumps.—Ragozzi (*Journal de médecine de Bordeaux*, October 21, 1906) recommends this preparation:

℞ Guaiacolis, ...1 gramme;
Petrolati, | Adipis lanæ, | .....āā 10 grammes.
M. ft. Ung. Apply morning and evening, cover with a piece of rubber, and secure with a moderately tight bandage.

Insomnia of the Aged.—Lemoine (*Revue pratique d'obstetrique et de gynécologie*, October, 1906) says that bromides should never be given for the insomnia of old people. The insomnia is due largely to sclerosis of the cerebral arteries with consecutive anæmia. He advises small doses of the iodides with broken doses of opium:

℞ Potassii iodidi, ...2 grammes;
Morphinæ hydrochloridi, ...0.05 grammes;
Syrup. aurantii carb. amaris, ...150 c.c.
M. Sig.:
Dose. One or two dessertspoonfuls at night.

The condition of the intestinal tract should be kept in mind and atonic conditions treated.

Cerebrospinal Meningitis Cured by Spinal Injection of Colloidal Silver.—Vidal and Ramond (*Le Progrès médical*, October 27, 1906) recently reported a case of successful treatment of cerebrospinal fever due to the meningococcus. This organism, which had been detected in the cerebrospinal fluid some time before, entirely disappeared in a few days after the subarachnoid injection of colloidal silver. The symptoms also improved, and the patient entered at once into convalescence. Sicard had already shown the advisability of the spinal canal as an easy way of introducing medicaments into the body in such emergencies.

Unfavorable Results from Treatment of Gastric Ulcer by Starvation.—N. Reichmann (*Archiv für Verdauungskrankheiten*) has observed bad results following prolonged fasting in the course of treatment of cases of round ulcer of the stomach. Among these are great general debility, with weakness of the heart, syncope, and other symptoms of inanition; and on the other hand, suppurative parotiditis, due to accumulation of pyogenic microbes in the mouth and in the duct of Stenon. He advises the frequent use of cleansing or antiseptic mouth washes and the subcutaneous injection of artificial serum with the use of cardiac stimulants.

Increase of Morning Temperature in Certain Phthisical Cases After Using a Hypnotic.—Sabourin (*Journal de praticiens*, October 27, 1906) has observed that, when a hypnotic is given to phthisical patients their temperature is as a rule elevated a degree or more the next morning, and this may persist for the greater part of the day. He attributes it to the sleep rather than to the drug employed. The physiological dilatation of the peripheral vessels which accompanies sleep and is favored by the warmth of the bed clothing is exaggerated by the drug, which also may retard the restoration of the circulation to its equilibrium.

Chloroform Water in Affections of the Stomach.—The *Revue française de médecine et de chirurgie* (September 25, 1906) calls attention to the value of the saturated solution of chloroform in cases of vomiting and painful affections of the stomach. It causes a sense of burning in the throat when taken alone, and therefore may be diluted with an equal quantity of water or flavoring syrup. It can be given in doses amounting to 100 grammes daily. It relieves the feeling of weight and oppression in dyspepsia, and overcomes nausea and nervous vomiting.

Other remedies may be associated with it if desired, such as opium, morphine, cocaine, belladonna, Cannabis indica, etc., for example:

℞ Extracti belladonnæ fol., ...0.05 gramme;
Tinct. opii camph., ...10 grammes;
Syrup. menthæ piperitæ, ...20 grammes;
Aquæ chloroformi, | Aquæ liteæ, | .....āā 60 grammes.
M. Take a tablespoonful as required.

Sodium Anisate as a Substitute for Sodium Salicylate.—Cinci calls attention to the sodium salt of anisic acid. The acid is obtained by oxidation of the oil of anise, and is a product isomerous with methyl salicylic acid. Anisic acid is only slightly soluble in water, but is very soluble in alcohol and likewise in ether. Its alkaline salts, however, are very soluble in water. Anisic acid is endowed with very marked antiseptic properties. When used as a dusting powder on the surface of a wound, it prevents suppuration and the development of microorganisms. Sodium anisate administered internally acts as an antipyretic, its effects being quite as powerful as those obtained from salicylic acid. It does not, like the latter, disturb the digestive organs or interfere with nutrition. It may be given in the same dosage as sodium salicylate.

℞ Tincturæ eucalypti, ...2 grammes;
Aquæ, ...100 grammes;
Syrupis papaveris, ...40 grammes;
Sodii anisati, ...2 grammes
M.

—*Revue pratique d'obstetrique et de gynécologie*, October, 1906.

Thiosinamine in the Treatment of Atrophy of the Optic Nerve.—Grunert, of Bremen (*Journal de médecine*, October 28, 1906), uses an injection of the following solution in cases of atrophy of the optic nerve:

℞ Thiosinamini, ...4 grammes;
Glycerini, ...8 grammes;
Strychninæ nitratis, ...0.20 gramme;
Aquæ destillatæ, ...50 grammes.
M. ft. Solution. Dose. mxv.

The object of this treatment is to soften the connective tissue in the new formation in the nerve trunk by the action of the thiosinamine. The injections are at first given once daily, and later are given at longer intervals; the site preferred being in the muscles of the forearm. This treatment is continued as long as there is progressive improvement; if the case should become stationary the strychnine is to be omitted and the thiosinamine given alone, and in order to prevent a relapse it should not be discontinued too soon. The presence of complications, such as detachment of the retina, diseases of the vitreous, etc., would contraindicate the use of thiosinamine, which has a congestive action.

A Novel Use of Cocaine in the Nose to Relieve Labor Pains and Dysmenorrhœa.—Some years ago Fliess called attention to the genital reflex from the nose, and indicated certain points which he called "genital points," which were situated upon the surface of the mucous membrane, and were more definitely located at the anterior extremity of the inferior turbinals and the adjacent sæptum and the tubercle of the sæptum. These areas he found to be notably congested and hyperæsthetic in certain cases of dysmenorrhœa. These cases he designated as "nasal dysmenorrhœa," because artificial irritation of these portions of the wall of the lower nasal meatus was found to increase the dysmenorrhœal pains; and, on the contrary, their cocainization caused these pains to disappear. These observations were confirmed by Schiff at the clinic of Professor Chrobak, of Vienna. At the same clinic Jerusalem and Falkner (*Wiener klinische Wochenschrift*, April 12, 1906) have quite recently terminated a new series of researches which demonstrate the possibility of inducing contractions of the gravid uterus by massage of the nasal genital points with a sound. In like manner their stimulation by faradization or galvanization would bring on labor, or even produce abortion. They also conducted other experiments by applying cocaine to the genital points, upon a tampon, during the progress of labor. As a result, they were satisfied that such applications had a decided power to suppress the pains of the first period, but without influencing those of expulsion. They cited one case of a robust woman, who was delivered of a child (with a small head, through a normal passage), and in which the entire labor, including the period of expulsion, was unattended by any pain whatever, on account of this cocainization of the genital area in the nose. —*Revue française de médecine et de chirurgie*, September 25, 1906.

Treatment of Calvities.—When the baldness is not due to a parasitic cause, such as ringworm or favus, or to a general cause like syphilis, various methods have been recommended. Lassar (*Deutsche medizinische Wochenschrift*, July 5, 1906) applies the following:

℞ Sodii carbonatis, } .....āā 15 grammes;
Potassii carbonatis, }
Saponis, ...70 grammes;
Aquæ rosæ, ...100 grammes.
M.

The scalp is to be shampooed with this preparation and with warm water, and washed with water at ordinary temperature, then dried with a towel. Applications are then made with:

℞ Hydrargyri bichloridi, ...0.30 gramme;
Phenolis liquifacti, ...6 grammes;
Aquæ destillatæ, ...150 grammes;
M. To be applied for half an hour, on a compress.

When the compresses are removed, the hair is dried in the air, and then the scalp is next rubbed with:

℞ Thymolis, ...0.25 gramme;
Alcoholis (90°), ...100 grammes.
M.

After this has dried, a small quantity of the following pomade is used:

℞ Acidi salicylici, ...1 gramme;
Tincturæ benzoini, ...2 grammes;
Olei olivæ, ...50 grammes;
Olei bergamottæ, ...gtt. xv.
M.

The *Revue pratique d'obstetrique et de gynécologie* (October 10, 1906) recommends a similar method of treating baldness: The scalp is to be washed with tar soap, daily, for a period of six or eight weeks, later the application is to be made less frequently. The scalp is to be rubbed for ten minutes and then the soapsuds are removed by a stream of warm water. Following this, the scalp is to be washed with cold water and dried with a towel, and a little of the following is used with friction:

℞ Hydrargyri bichloridi, ...0.5 gramme;
Aquæ destillatæ, ...150 grammes;
Glycerini, } .....āā 50 grammes.
Spiritus odorati, }
M.

This is succeeded by the local use of a solution of naphthol in absolute alcohol (one half of one per cent.). Finally, when the oily matters have been removed by this means as thoroughly as possible, an application of the following is made:

℞ Acidi salicylici, ...2 grammes;
Tincturæ benzoini, ...3 grammes;
Ol. bulbuli, ...q. s. ad 100 grammes.
M.

This method is said to fill all the indications in cases of ordinary alopecia, and also to suppress its causes and excite the growth of the hair. Gaucher has also obtained good results in cases of falling out of the hair from the following combination:

℞ Glacial acetic acid,.....1 gramme;
Resorcin, ...1 gramme;
Chloral hydrate, ...4 grammes;
Solution of formaldehyde (40%),.....5 grammes;
Castor oil, ...0.40 gramme;
Pilocarpin, ...0.50 gramme;
Alcohol, ...200 grammes;
Essence of violets, q. s.

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THE SURGERY OF THE STOMACH.

The Mütter lecture in surgical pathology of the College of Physicians of Philadelphia was delivered on the evening of December 4th by Dr. William J. Mayo, surgeon to Saint Mary's Hospital, Rochester, Minn. The title of the lecture was The Principles Underlying the Surgery of the Stomach and the Associated Viscera. Dr. Mayo discussed the bearings of the facts of embryology, physiology, anatomy, and bacteriology on the methods of operations on the stomach and its surrounding organs as practised by the advanced surgeons of the day. He showed that infection played a small part in the pathology of the stomach. From the facts of embryology he deduces that the digestive tract may be divided into three parts. A portion, composed of the stomach and duodenum, prepares the food for absorption. Another portion, from the end of the duodenum to the hepatic flexure of the colon, serves as an absorbing area. The remainder of the intestinal tract, from the hepatic flexure of the colon to the anus, serves as a reservoir. He concludes that water is of value in the small intestine, but that in the large intestine it is harmful in large quantities, because it interferes with storage. It has been shown that there are reverse mucous currents in the rectum and colon, so that an unlimited quantity of water may be introduced into the rectum at the rate of a pint or a quart an hour, rendering hypodermoclysis and transfusion unnecessary in cases in which the economy is suffering from a lack of fluid.

In pyloric contraction, the pyloric antrum becomes a part of the fundus of the stomach. If, on the other hand, the pylorus is not contracted, gastroenterostomy will not drain the stomach. He referred to the position of the stomach in the body, which, as modern anatomists have taught for several years, is oblique, and not transverse, and showed that on account of this position the majority of gastric ulcers occurred at the pyloric end. He calls this the grinding portion of the stomach. In deciding whether a peptic ulcer is gastric or duodenal he uses the loop of bloodvessels surrounding the pylorus as a landmark. He pointed out that the protected position of the pyloric extremity of the stomach beneath the liver accounted for the fact that fatal perforation was more common in the cardiac end; because when there was inflammation in the pyloric end, the adhesions with the neighboring organs were more dense and served their protective purpose better.

If the four main vessels of the stomach are ligated, the pyloric end may be removed almost bloodlessly. The lymphatic current in the stomach runs from left to right, and the lymphatic vessels lie with the bloodvessels. The lymphatic supply is poor at the fundus and very rich at the pylorus, and in a measure this lymphatic distribution accounts for the absence of involvement of the fundus in cases of carcinoma of the pylorus.

Physiologically, Dr. Mayo looks upon the stomach as a convenient organ which allows of the storage of a large quantity of food which can be drawn upon from time to time for purposes of digestion, so as to prevent continuous feeding; just as the urinary bladder and the intestine are convenient organs for the storage of material to prevent continuous evacuation. The digestive tract is supplied, as is well known, by the sympathetic nervous system principally, although there are some fibres of the vagus nerve going to these organs. On account of the sympathetic nerve supply, all parts of the digestive tract react to irritation in any one part, and the inability of the sympathetic nerve to prevent reaction of the stomach, for example, to irritation at remote points produces conditions like pyloric spasm, gastric neurasthenia, etc. Secondly, many cases of pyloric spasm are due to appendicular inflammation.

From a bacteriological point of view, Dr. Mayo called attention to the fact that at the height of digestion the stomach contents were nearly always sterile. On the other hand, the bile always contains microorganisms, usually of attenuated virulence. While these organisms may gain access to the gallbladder by passage up the common

bile duct and the cystic duct, he thinks the majority of them reach the gallbladder by passing through the liver, and he is also of the opinion that gallstones are always bacterial in origin, and that the causative bacteria have come through the liver.

In order to prevent embolic pneumonia after operations upon the upper abdomen, Dr. Mayo advises raising the head instead of the foot of the bed. He points out that when infectious material is absorbed through the endothelium of the peritonæum it enters the lymphatics and is destroyed. On the other hand, if it is absorbed through a denuded area, it enters the blood current immediately and may become a dangerous element. In operations on the upper abdomen, therefore, the infectious material, if any is present, should be encouraged to gravitate toward the pelvis, so as to be absorbed through healthy endothelium.

THE REGENERATION OF NERVES.

There is at present a more or less animated discussion among neurologists as to the histogenesis of the regeneration of nerves. Some observers believe that regeneration is autogenetic; that is, that the new fibres have a peripheral origin. Others believe that they grow out from the central stump of the injured nerve, in which the individual fibres have preserved their integrity. Mott, Halliburton, and Edmunds (*Proceedings of the Royal Society*, lxxviii, B, 525) present a series of observations which appear to indicate definitely the central origin of the new fibres. In a series of experiments union of the central and peripheral ends of a divided nerve was prevented by covering the divided ends with caps made of sterilized drainage tube. After 100 to 150 days no evidence of regeneration could be demonstrated in the peripheral end of the divided nerve. In a second series of experiments a portion of excised nerve was transplanted into the anterior wall of the stomach, so that the nerve was completely inclosed in a sheath of stomach wall lined by peritonæum. After 150 days there was no evidence of regeneration, but, on the other hand, every evidence of degeneration and absorption. In a third series of experiments a large nerve was divided and immediately sutured. After the lapse of sufficient time to allow for regeneration a second operation was performed and a piece of nerve about half an inch long was excised a short distance below the former point of section. Histological examination of this excised portion showed that all traces of degenerated products had disappeared. In ten days after the second operation the animal was killed, and examination of the nerve above and below the second line of division showed no degeneration in the former situation; but in the latter portion Wallerian degeneration was present. As the result of a fourth series of experiments performed to determine the rate of medullation in regenerating nerves, they conclude that the late appearance of the medullary sheath in those portions which are more distant from the place where the nerve was originally cut is a conclusive piece of evidence in favor of the view that the new nerve fibres have grown from the central end in a peripheral direction. The results of a fifth series of experiments, designed to demonstrate the influence of stimulus on regeneration, are in favor of the view that new nerve fibres grow from central axones and that they are not formed autogenetically.

The following events take place in a divided nerve, according to the authors: The neurilemmal cells multiply, elongate, and unite into long chains. This process is more vigorous at the termination of the central end than at that of the peripheral end. This process is thought to be phagocytic and nutritive. At the central end of the cut nerve the process is effective and provides for the nourishment of the actively lengthening axis cylinders. At the distal end, on the other hand, it is ineffective so far as any real new fibre formation is concerned, unless the axones reach that end of the cut nerve. In the latter event the products of the activity of the neurilemmal cells provide the supporting and nutritive elements necessary for the continued growth of the axones.

THE NEW BUILDING OF THE WOMAN'S HOSPITAL IN NEW YORK.

It should be a source of great satisfaction to see the old Woman's Hospital at last suitably equipped in an eminently proper locality. Dr. Le Roy Broun's description of the chief features of the new building and of special appliances to be used in it, which we publish in this issue, is of great interest. The exterior of the building is imposing, but it is evident that architectural display has not been uppermost in the preparation of the design; efficiency in achieving the prime purpose of the institution, that of curing the patients, has constantly been kept in view, and it is to be expected with confidence that the sanitary condition of the new building will be thoroughly preserved.

Dr. Broun calls attention in his article to a very earnest hope on the part of the medical staff that means may be obtained of securing the en-

tire services of a competent pathologist, a young but well trained and ambitious man. It is hardly to be questioned, we think, that a hospital must profit far more from the work of such a man, constantly engaged in its work, than from the services of a pathologist in whose life the hospital work is little more than an incident. Even in the restricted field of gynæcology there is a large field for pathological and bacteriological investigation, and we hope that the ambition of the medical board in this respect will be realized, but that can happen only as the result of generous contributions to the hospital's funds.

THE MEDICAL SCHOOL OF GREIFSWALD.

"Ægrotis curandis, medicis instituendis." So read, presumably still reads, the inscription on the hospital and clinic of the university at Greifswald. This old Pomeranian institution celebrated a few months ago its 450th anniversary. The development of its medical faculty is so different from the rapid strides of the departments of our own colleges that a short synopsis of it may be of interest; besides, it will give a true picture of many of its German sister institutions.

Among the existing twenty-one German universities, Greifswald (1459) ranks as the fourth in age; Heidelberg (1385), Leipsic (1409), and Rostock (1419) are older, while Cologne (1388) and Erfurt (1392) no longer exist, although the city of Cologne has only lately opened a new medical school; and Prague (1348) and Vienna (1365) belong to Austria. The oldest existing European university is that of Bologna, which in 1888 celebrated its 800th anniversary.

Dr. Paul Grawitz, professor of pathology at Greifswald, has in the name of the medical faculty written a *Festschrift* for the celebration, taking in the years 1806 to 1906, as a sequel to Kosegarten's *Geschichte der Universität Greifswald* (Greifswald, 1856), written for the fourth centenary celebration and ending with the year 1820.

The university at Greifswald was founded by the dukes of Pommern-Wolgast in 1456, and has seen many vicissitudes. The Westphalian peace conference in 1648 brought it to Sweden, and in 1815 it came through the Vienna congress to Prussia. We learn from Professor Grawitz that at the time of its foundation the medical faculty consisted of one chair, from 1559 it had two, and in 1790 one more was added, while in 1820 there were four regular professors (surgery, pathology, and ophthalmology; theory of medicine and pharmacology; medicine, gynæcology, and therapeutics; and anatomy and physiology). In 1852 was founded the chair of gynæcology, in 1856 that of pathology, in 1861 that of physiology, in 1863 that of ophthalmology, and in 1888 that of hygiene. Now, therefore, the faculty consists of ten regular professors, psychiatry, pædiatry, rhinology and laryngology, otology, dermatology, and forensic medicine being in the hands of assistant professors. In 1826 there were matriculated 18 medical students; in 1836, 103; in 1864, 205; in 1887, the highest number, 520; in 1895, 285; and in 1905, 169. But it must be remembered that the city of Greifswald has only 23,000 inhabitants, and although the surrounding country is well inhabited, it cannot supply such an amount of clinical material as the larger cities.

Among well known teachers may be mentioned Hoppe-Seyler, von Ziemssen, von Bardeleben, Hüter, Eulenburg, Landois, Löffler, Bier, Martin, and Westphal. Most of them eventually went from Greifswald to some more important university.

The Prussian government is known to keep a strong hand on its educational institutions and students, and to be often rather autocratic in its appointments. A well known example is the appointment of Schweninger, Bismarck's physician, to the department of dermatology at the Berlin University. A simliar case happened in Greifswald when, in 1858, the government appointed its own candidate to the chair of gynæcology against the wishes and rights of the faculty.

Dr. Grawitz is to be congratulated that he, not a Greifswald graduate, but belonging to the faculty since 1886, has given such a good condensed history. We only could have wished for a map of Greifswald, indicating the situation of the medical institutions.

THE INFLUENCE OF AMERICAN SURGERY IN EUROPE.

One of our New York surgeons, Dr. Carl Beck, read an address on this subject at a recent convocation of the George Washington University, and it is printed in vol. v, No. 3, of the university's *Bulletin*. After an interesting sketch of ancient and mediæval surgery, Dr. Beck traces the salient features of the rise and progress of surgery in modern times, giving due credit to the various nations for their important contributions to the advance of the science and art. As regards America, he naturally speaks of the introduction of anæsthesia and of the early ovariotomies as the most prominent events. But the American management of disease of the vermiform appendix forms the real topic of his address. European surgeons, he says, have slowly admitted the main

American contention—that in favor of operative intervention in apparently mild and ill defined cases and of the interval operation.

He tells us of his having been present at the discussion of the subject inaugurated by the Berlin Medical Society on July 18th, and says: "Although it was most gratifying to hear the same views expressed for which many American surgeons have been fighting for the last twenty-five years, it was disappointing to find that no allusion was made to their immortal merits in this respect." He adds, very tactfully: "As this omission was preeminently based upon the traditional European ignorance concerning medical events in the New World, I was glad to avail myself of the chance offered to me, by the kind invitation of the president, to congratulate the distinguished society on having become so thoroughly Americanized in the question of appendicitis."

It is mainly in surgical technics, says Dr. Beck, that America has taken the lead, and, like most of us, he supposes that for many years to come that will continue to be the case, and that Americans will rely on Europeans, particularly the Germans, to work out the principles of surgery, for the United States is preeminently the land of action, and Germany that of research. Thus the Old World and the New will react upon each other for the general welfare; we shall continue to make pilgrimages to Europe for instruction in the fundamentals, and Europeans will visit us with increasing frequency for the sake of observing our practical methods. Dr. Beck, a European by birth and training and of great surgical experience in America, is one of the few men qualified to make such a comparison as he has essayed.

Obituary.

ALEXANDER E. MACDONALD, M. D.,

OF NEW YORK.

Dr. Macdonald's habitual blooming and stalwart appearance will perhaps give rise to some astonishment that he should have died of pulmonary tuberculous disease. It is certainly but a few months since he looked as well as ever. It is understood that he had diabetes also. Dr. Macdonald was of Canadian birth and early education, but he took his medical degree in New York, and here he followed his career, that of an alienist. For many years he was in charge of one of the large island asylums, and his administration of its affairs was admirable. He was an ardent promoter of the outdoor games and contests that for several years past have served to lighten, for a time at least, the burden of mental suffering borne by the inmates. He often contributed, by writing and in debate, to the progress of psychiatrics, and his advice in medicolegal matters was always recognized as sound and helpful. It is only recently that he resigned the superintendency of the Manhattan State Hospital, and there was then good reason to expect that, freed from official cares, he would long be spared to pursue congenial studies. Dr. Macdonald was a notably handsome man, and his humor and amiability made him a social favorite.

ALONZO GARCELON, M. D.,

OF LEWISTON, MAINE.

At the venerable age of ninety-three years, without notable abatement of his natural powers, Dr. Garcelon has died suddenly and, there is good reason to suppose, painlessly. The account is that he was found dead in his bed, to which, being in his usual health, he had betaken himself but a few hours before. Though a comparatively small town had been the immediate scene of his life work, it is probable that he was personally known to more members of the medical profession than any other man, however renowned, for almost every year for many decades he had attended the meetings of the American Medical Association, and his tall and impressive form caused him to be pointed out to all newcomers, who in most instances were introduced to him. He had been president of the association, and always showed deep interest in its welfare. His activities were not confined to medicine, though his professional career, which was exceedingly creditable, was never long interrupted by his public duties or his necessary attention to business enterprises. He was at one time governor of the State of Maine, and on various occasions he served in other political offices. He was also concerned in considerable commercial undertakings. As a public official and as a man of affairs he should serve as an example to many a physician who might make himself conspicuously useful in other fields than that of professional work. Dr. Garcelon was personally attractive even in his extreme age, and the general feeling for him was one of affection.

FERNAND HENROTIN, M. D.,

OF CHICAGO.

Dr. Henrotin, a gynæcologist of national reputation, died at his home on Sunday, December 9th, at the age of fifty-nine years. He was a native of Belgium, but he took his medical degree from the Rush Medical College, of Chicago, and made that city the scene of his professional career. He was eminently a progressive man, though conservative in his methods. He was highly esteemed by his professional brethren throughout the country.

News Items.

NEW YORK CITY AND STATE.

The Association of the Alumni of the New York Hospital held a smoker at No. 6 West Sixteenth Street on the evening of Wednesday, December 12th.

The Geneva, N. Y., Medical Society.—At a meeting of this society, held on Thursday evening, December 6th, Dr. John A. Spengler read a paper on Prevalent Eye Diseases.

Changes of Address.—Dr. Reeve Turner, to 208 East Seventy-second Street, New York, from the State Hospital, Middletown, N. Y.; Dr. Albert E. Roussel, to 2108 Pine Street, Philadelphia, Pa.

The Rochester (N. Y.) Academy of Medicine.—The following was the order for a meeting of the *Section in Surgery*, held on Wednesday, December 12th: A paper on Sciatic Pain, by Dr. R. R. Fitch (by invitation). Discussion opened by Dr. E. B. Angell.

The Buffalo Medical Clinic.—The regular monthly meeting of this society was held on Thursday evening, December 6th. The paper of the evening was read by Dr. William Irving Thornton, entitled, A Review of the History of Syphilis and the Recent Investigations as to Its Ætiology.

The Woman's Hospital in the State of New York.—Dr. J. Riddle Goffe has been elected to fill the vacancy on the medical board of this institution, caused by the resignation, several years ago, of Dr. T. Addis Emmet. The new hospital was opened for the reception of patients on December 6th.

The Medical Society of the County of Herkimer, N. Y.—At the annual meeting of this society, held at Herkimer, on Wednesday, December 5th, officers were elected as follows: President, Dr. John B. Ellis; vice-presidents, Dr. L. L. Brainard, Dr. E. G. Kern, and Dr. H. J. Hunter; secretary, Dr. A. Walter Suiter; treasurer, Dr. George Graves.

The Williamsburgh Medical Society.—The physicians of the Eastern District of the Borough of Brooklyn, at a meeting held on Wednesday, December 5th, organized a society to be known by this name. Officers were elected as follows: President, Dr. Leon Louria; vice-president, Dr. William Linder; corresponding secretary, Dr. Marcus J. Levitt; recording secretary, Dr. Edward L. Friedman; treasurer, Dr. A. Hayman. The meetings of the society will be held on the second Wednesdays of each month.

The New York Academy of Medicine.—At a meeting, held on Thursday evening, December 6th, the annual election of officers was had, with the following results: President, Dr. John A. Wyeth; vice-president, Dr. Algernon T. Bristow; trustee, Dr. Charles L. Dana; member of committee on admissions, Dr. Floyd M. Crandall; member of committee on library, Dr. Henry S. Oppenheimer; recording secretary, Dr. John H. Huddleston; and corresponding secretary, Dr. Charles Stedman Bull.

The Medical Association of the Greater City of New York.—A meeting of this association will be held on Monday evening, December 17th. The following programme will be presented: Nominations for officers; A Modification of the Obstetric Forceps, Eliminating the Danger of Excessive Compression, by Dr. A. Ernest Gallant; Immediate Repair of the Soft Parts After Labor, by Dr. Henry C. Coe; discussion by Dr. Charles Jewett, Dr. Robert A. Murray, Dr. Francis Foerster, and Dr. Frank R. Oastler; Modern Obstetric Technique, by Dr. George Livingston Broadhead; discussion by Dr. Edwin B. Cragin, Dr. James D. Voorhees, and Dr. Ralph W. Lobenstine; The Urine in Pregnancy, by Dr. Frederick E. Sondern; discussion by Dr. J. Clifton Edgar and Dr. Samuel M. Brickner; general discussion to be opened by Dr. William M. Polk.

Personal.—At the fourteenth biennial convention of the Sigma Nu Fraternity of America, held at Syracuse, November 30 and December 1, 1906, Dr. Albert Vander Veer, of Albany, was elected honorary president of the fraternity. The other officers chosen were: President, Dr. A. T. Kerr, of Ithaca; honorary vice-president, Dr. Roswell Park, of Buffalo; and secretary-treasurer, Dr. William Walter, of Chicago.

Dr. N. P. Card, of Utica, who was lately appointed assistant surgeon in the hospital of the State Soldiers' Home, at Bath, N. Y., has presented his resignation to Commandant Ewell, after having been on duty five days. He will accept a position in the Manhattan State Hospital. Dr. Carlton Foster, late of the State Hospital at Central Islip, has been selected from the State civil service list to succeed Dr. Card at the State Soldiers' Home hospital.

Medical Society of the County of Ulster.—The annual meeting of this society was held at the City Hall, Kingston, on Tuesday, December 4, 1906. Officers were elected as follows: President, Dr. Alexander A. Stern, Kingston; vice-president, Dr. Cornelius V. Hasbrouck, Rosendale; secretary, Dr. Mary Gage-Day, Kingston; treasurer, Dr. Elbert H. Loughran, Kingston; Censors: Dr. Adelbert H. Mambert, Kingston; Dr. Walter D. Hasbrouck, Kingston; Dr. Robert R. Thompson, Kingston; Dr. Dell B. Allen, Saugerties; Dr. Josiah Hasbrouck, Port Ewen; delegate to the State Society, Dr. James L. Preston, Kingston; delegate to the Third District Branch, Dr. Daniel Connelly, Kingston. The scientific session was as follows: President's Address, Review of Medical Progress the Past Year, Dr. E. E. Norwood; general discussion on bacteriological work. A committee was appointed to consult with the Board of Health in reference to a bacteriological department.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending December 8, 1906:

	December 8.		December 1.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	72	15	87	20
Smallpox	13	0	0	0
Varicella	147	0	74	0
Measles	155	5	152	7
Scarlet fever	149	9	136	8
Whooping cough	52	10	55	5
Diphtheria	276	32	291	32
Tuberculosis pulmonalis	356	162	319	162
Cerebrospinal meningitis	8	2	10	4
Totals	1,228	235	1,124	238

Society Meetings for the Coming Week:

Monday, *December 17th.*—New York Academy of Medicine (Section in Ophthalmology); Medical Association of the Greater City of New York; Hartford, Conn., Medical Society; Chicago Medical Society.

Tuesday, *December 18th.*—New York Academy of Medicine (Section in General Medicine); Medical Society of the County of Kings, N. Y.; Binghampton, N. Y., Academy of Medicine; Buffalo Academy of Medicine (Section in Pathology); Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Baltimore Academy of Medicine; Clinical Society of the Elizabeth, N. J., General Hospital.

Wednesday, *December 19th.*—New York Academy of Medicine (Section in Genitourinary Surgery); New York Society of Dermatology and Genitourinary Surgery (private); New York Society of Internal Medicine (private); Women's Medical Association of New York City (New York Academy of Medicine); Medicolegal Society, New York; Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Jersey City); Buffalo Medical Club; New Haven, Conn., Medical Association.

Thursday, *December 20th.*—New York Academy of Medicine; Brooklyn Surgical Society; New Bedford, Mass., Society for Medical Improvement (private); Medical Society of the City Hospital Alumni, St. Louis; Atlanta, Ga., Society of Medicine; Newark, N. J., Medical and Surgical Society; Æsculapian Club of Buffalo, N. Y.

Friday, *December 21st.*—New York Academy of Medicine (Section in Orthopædic Surgery); Clinical Society of the New York Post Graduate Medical School and Hospital; Manhattan Medical and Surgical Society, New York (private); East Side Physicians' Association of the City of New York; New York Microscopical Society; Roosevelt Hospital Alumni Association, New York; Brooklyn Medical Society; Baltimore Clinical Society; Chicago Gynæcological Society.

Saturday, *December 22nd.*—New York Medical and Surgical Society (private); Harvard Medical Society, New York (private); Lenox Medical and Surgical Society, New York (private).

PHILADELPHIA AND THE MIDDLE STATES.

The Clinical Society of the Elizabeth (N. J.) General Hospital.—A meeting of this society will be held at the Hospital on Tuesday evening, December 18th. A paper on Morphine will be read by Dr. P. Du Bois Bunting.

The Monthly Meeting of the Section on Gynæcology of the College of Physicians was held on Thursday, December 6th, together with the Philadelphia Obstetrical Society. Dr. J. Whitridge Williams, of Johns Hopkins University, delivered an address upon The Ætiology of Pernicious Vomiting of Pregnancy. Dr. Richard C. Norris described the treatment of pernicious vomiting of pregnancy, and the discussion was conducted by Dr. E. P. Davis, Dr. D. L. Edsall, Dr. B. C. Hirst, and Dr. C. A. Fife.

The Fifty-second Annual Report of the Board of Managers of the Howard Hospital has just been received. During the year 541 patients were admitted to the hospital, of whom 413 were admitted to the wards and 128 to the private rooms; 8,730 patients were treated in the outpatient department. During the year the home for nurses was completed, and the rooms in the hospital formerly occupied by the nurses as sleeping quarters have been converted into a children's ward and into rooms for pay patients.

Philadelphia Personals.—Dr. F. P. Gengenbach, of Denver, Col.; Dr. C. L. Kaucher, of Reynoldsville, Pa.; and Dr. F. I. Patterson, of Scenery Hill, Pa., are registered at the Philadelphia Polyclinic and College for Graduates in Medicine.

During the recent visit to Philadelphia of Dr. William J. Mayo, of Rochester, Minn., he was entertained by Dr. Charles H. Frazier, Dr. John H. Musser, and Dr. John B. Deaver. The Mütter Lecture was delivered by Dr. Mayo, at the College of Physicians on the evening of December 4th.

The Philadelphia Academy of Surgery.—At the regular meeting of the Philadelphia Academy of Surgery, held on Monday, December 3rd, Dr. Astley P. C. Ashhurst showed a case of Cavernous Angeloma of the Upper Extremity in a Girl of Twelve Years; Dr. Orlando H. Petty reported a fracture of the Coracoid Process of the Scapula Caused by Muscular Action; Dr. John B. Deaver read the report of surgical clinics for students at the German Hospital for 1905-1906; Dr. William J. Taylor reported a case of Abscess of the Prostate in Typhoid Fever; Dr. Charles F. Mitchell reported eight cases of Perforation of the Bowel in Typhoid Fever.

Scientific Society Meetings in Philadelphia for the Week Ending December 22, 1906.—*Monday, December 17th,* Ornithological Section, Academy of Natural Sciences; Medical Jurisprudence Society; Northeast Branch, Philadelphia County Medical Society; Society of Normal and Pathological Physiology, University of Pennsylvania. *Tuesday, December 18th,* Section on Ophthalmology, College of Physicians; Dermatological Society; Academy of Natural Sciences; North Branch, Philadelphia County Medical Society. *Wednesday, December 19th,* Section on Otology and Laryngology, College of Physicians; Association of Clinical Assistants of Wills Hospital; Franklin Institute. *Thursday, December 20th,* Section Meeting, Franklin Institute; Medical Society of the Woman's Hospital. *Friday, December 21st,* American Philosophical Society.

The Accident to Dr. W. Joseph Hearn.—The many friends of Dr. W. Joseph Hearn, in all parts of the United States, will be extremely sorry to hear of the serious accident sustained by him on the afternoon of Tuesday, December 4th. Dr. Hearn was on his way to the Philadelphia General Hospital and was driving across the South Street bridge when his horse became frightened at something on the bridge, which was being repaired, and bolted. Both he and his driver were thrown out, and the doctor sustained a fracture of one arm and a fracture of the base of the anterior fossa of the skull. On the evening of the day of the accident it was thought that it was very doubtful whether he would recover, but we are glad to say that at the time of writing his condition has improved considerably. The sympathy of a large number of Dr. Hearn's old students and personal friends, we are sure, will be extended to him and his family during the period of his serious illness.

The College of Physicians of Philadelphia.—At the regular meeting of the College of Physicians of Philadelphia, held on Wednesday, December 5th, Dr. Alfred Gordon read a paper entitled Cases Allied to Amaurotic Family Idiocy; Dr. M. B. Hartzell read a paper entitled A Case of Extensive Leukoplakia; Dr. Charles Lester Leonard read a paper entitled Symptoms and Signs in Urinary Lithiasis. The honorary librarian reported eighty-one additions to the library during the month of November, and the chairman of the committee on the Mütter Museum reported three additions to the museum.

The following programme was arranged for a meeting of the *Section in General Medicine,* held on Monday evening, December 10th: Presentation of a patient with Probable Congenital Disease of the Heart, with remarks by Dr. Joseph Sailer; Preicteric Itching, also a paper on The Development of Cardiac Murmurs During Attacks of Biliary Colic, by Dr. David Riesman; Further Observations on Metabolism in Purpura, by Dr. David L. Edsall; A Review of the Therapeutic Use of Koch's Tuberculin, by Dr. A. P. Francine; The Pathogenesis and Treatment of Neurasthenia in the Young, by Dr. Robert N. Willson.

Charitable Bequests.—By the will of Christian Krumm the Lutheran Orphans' Home receives $100. By the will of Mary Hartman, the Hebrew Orphan Asylum and the Hebrew Hospital and Asylum Association receive $100 each. By the will of Elizabeth Anderson, the premises 615 and 619 So. Seventeenth Street are bequeathed to the Philadelphia Home for Incurables. The Presbyterian Home for Widows and Single Women receives $6,000. The Presbyterian Orphanage receives $5,000. The Presbyterian Hospital receives $5,000, to endow a free bed to be known as the Elizabeth Anderson Free Bed. The Pennsylvania Society for the Advancement of the Deaf receives $500 for its home at Doylestown, Pa. The Orange Home at Hatboro, Pa., and the Western Home for Poor Children receive $3,000 each. The Old Men's Home receives $1,000, and the Masonic Home of Pennsylvania receives $500. The will further directs that $500 be divided among the inmates of the Anderson Wing of the Presbyterian Home for Aged Couples and Single Women, at Bala, Pa. The residue of the estate is left to the American Oncological Hospital. By the will of Rosanna Agen the Free Hospital for Poor Consumptives receives $50.

The Northern Medical Association of Philadelphia.—The sixtieth anniversary of the Northern Medical Association of Philadelphia was celebrated by that body on the evening of December 5th by a banquet. The association is the oldest medical society in Philadelphia, with the exception of the College of Physicians. Since its organization, in 1846, the society has passed through many vicissitudes, the most serious of which, and the one which came nearest to causing the complete dissolution of the association, was the bitter discussion that took place at the time of the entrance of women into the medical profession. Serious differences of opinion also developed at the time of the introduction of cœliotomy into the list of surgical operations, and at the introduction of homœopathy. The society has always had an active membership among the younger men of the medical profession, although their seniors in professional years have always been regular attendants at the meetings. Among the noted men who have occupied the president's chair of the Northern Medical Association may be mentioned Dr. Arnold Naudain, Dr. Nathan L. Hatfield, Dr. John Rhein, Dr. William M. Welch, Dr. J. Solis-Cohen, Dr. Charles K. Mills, Dr. E. E. Montgomery, Dr. James B. Walker, Dr. Joseph S. Gibb, Dr. Charles P. Noble, and Dr. David Reisman. The anniversary dinner was a successful affair, at which fifty-two members and guests sat down. Remarks were made by Dr. David Riesman, Dr. Charles K. Mills, Dr. Albert Bernheim, Dr. Joseph S. Gibb, Dr. H. Augustus Wilson, Dr. James B. Walker, Dr. Joseph P. Remington, and others.

The Health of Philadelphia.—During the week ending December 1, 1906, the following cases of transmissible diseases were reported to the bureau of health:

	Cases.	Deaths.
Typhoid fever	180	19
Chickenpox	63	0
Cerebrospinal meningitis	3	1
Diphtheria	84	10
Measles	49	3
Whooping cough	8	3
Tuberculosis of the lungs	50	52
Pneumonia	79	54
Erysipelas	12	0
Puerperal fever	1	3
Trachoma	1	0
Septicæmia	2	0
Cancer	18	19

The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the

lungs, 6; diarrhœa and enteritis, under two years of age, 18. The total mortality was 446, in an estimated population of 1,469,126, corresponding to an annual death rate of 15.79 in a thousand population. The total infant mortality was 90; under one year of age, 75; from one to two years of age, 15. There were 33 still births, 16 males and 17 females. No unusual meteorological phenomena were recorded by the weather bureau, except that on November 27th the maximum temperature recorded was 61 degrees. There has been a great deal of talk in the newspapers about the existence of typhoid fever in the West Philadelphia wards recently supplied with filtered water from the Belmont filtering plant. During the week under discussion 16 cases of typhoid fever were reported from this district, which has a total population of 148,371, and includes three large hospitals and a large orphan asylum. The deaths from typhoid fever in this district numbered 2. The outcry concerning the typhoid fever incidence in the district appears to be entirely unwarranted. It must be admitted, however, that in the laboratory of hygiene of the University of Pennsylvania Dr. Gildersleeve has found fermentation in cultures from tap water every day but one since November 22nd. This indicates that the tap water is still contaminated with intestinal organisms.

BOSTON AND NEW ENGLAND.

The Alpha Kappa Kappa Fraternity of the Maine Medical School.—The Theta Chapter of this fraternity held its annual initiation and banquet at New Meadow's Inn, on Saturday, December 8th.

The Phi Chi Medical Fraternity of Maine.—The annual banquet of the Gamma Gamma Chapter of this fraternity was to be held at Portland, on Saturday evening, December 15th. Dr. Richard C. Cabot, of Boston, was announced as the speaker of the evening, on the subject: Medicine *versus* Surgery as a Profession.

The Maine Academy of Medicine and Science.—The following programme was arranged for a meeting of this academy, held at Portland, on Wednesday evening, December 12th: Eye Strain: Its Relation to the General Health and the Public, by Dr. J. A. Spalding, Portland; Middle Ear Diseases: Their Relation to the General Health and the Public, by Dr. F. Y. Gilbert, Portland; Hay Fever, by Dr. F. E. Leslie, Andover, Me.

The Portland, Me., Medical Club.—The annual meeting and banquet of this club were held on Thursday evening, December 6th. At the business meeting the following officers were elected for the ensuing year: President, Dr. C. R. Burr; first vice-president, Dr. E. G. Abbott; second vice-president, Dr. F. Y. Gilbert; secretary-treasurer, Dr. W. W. Robinson; board of censors, Dr. F. W. Searle, Dr. G. B. Swasey, Dr. H. S. Emery. After the dinner, the retiring president, Dr. H. J. Patterson, read a paper on Obstetrics, after which Dr. John F. Thompson gave the annual oration, which dealt very largely with expert medical testimony and its value.

The Rhode Island Medical Society held a quarterly meeting at Providence, on Thursday, December 6th, under the presidency of Dr. Christopher F. Barker. Dr. J. C. Rutherford was appointed anniversary chairman for the meeting of June 13, 1907. Delegates were appointed to the various State Medical Association meetings as follows: Maine, Dr. F. B. Fuller and Dr. A. M. Paine; New Hampshire, Dr. A. G. Sprague and Dr. R. M. Smith; Vermont, Dr. H. L. Barnes and Dr. E. C. Bullard; Massachusetts, Dr. George H. S. Mathews and Dr. Frank T. Fulton; Connecticut, Dr. J. H. Morgan and Dr. R. B. Smith; New York State, Dr. C. W. Skelton and Dr. C. W. Stewart; New Jersey, Dr. J. L. Wheaton, Jr., and Dr. G. T. Swarts.

BALTIMORE AND THE SOUTH.

The Memphis and Shelby County, Tennessee, Medical Society.—The programme arranged for a meeting of this society held on Tuesday, December 4th, included the following titles: The Prescribing of Proprietaries, by Fred. Weiss, Ph. D., and Dentition in Its Relation to Disease, by Dr. A. G. Jacobs.

The Hart County, Kentucky, Medical Association.—At the annual meeting of this association, held at Munfordville, on Tuesday, December 4th, officers were elected as follows: President, Dr. J. J. Adams, of Munfordville; vice-president, Dr. J. J. Mudd, of Hardyville; secretary, Dr. H. C. Bruner, of Hardyville.

Personal.—Dr. J. McCaw Tompkins, of Richmond, Va., has been appointed chief interne of the Richmond Memorial Hospital, to succeed Dr. Samuel Brown, who resigned to associate himself with Dr. George Ben Johnston. Dr. Tompkins is the son of Dr. Christopher Tompkins, dean of the Medical College of Virginia.

The Claiborne County, Mississippi, Medical Association.—The annual meeting of this association was held at Port Gibson, on Monday, December 2rd. The election of officers resulted as follows: President, Dr. J. F. McCaleb; vice-president, Dr. E. D. Barron; secretary, Dr. George W. Acker; censor, Dr. T. T. Bailey.

The Baltimore City Medical Society.—At the annual meeting of this society, held on Wednesday, December 5th, the election of officers resulted as follows: President, Dr. A. C. Hannon; vice-president, Dr. J. M. Handley; secretary, Dr. W. E. Magruder; treasurer, Dr. W. S. Gardner. An interesting address was made by Dr. R. C. Cabot, of Boston, on Suggestions for Hospital Reorganization, with Special Reference to a Greater Effectiveness of Treatment Therein.

The Chattahooche Valley Medical and Surgical Society is the name by which a society recently organized at Alexander City, Ala., is to be known. The Chattahooche Valley comprises territory of West Georgia and East Alabama. The following officers were elected for the ensuing term: President, Dr. J. A. Goggans, Alexander City, Ga.; first vice-president, Dr. W. E. Maxwell, Kellyton, Ala.; second vice-president, Dr. O. S. Justice, Central, Ala.; secretary, Dr. W. J. Love, Opelika, Ala.; treasurer, Dr. A. J. Coley, Alexander City, Ala. Alexander City was selected as the next place of meeting. The society is to meet twice a year.

CHICAGO AND THE WEST.

The Hennepin County, Minnesota, Medical Society.—The following programme was presented at a meeting of this society, held at Minneapolis, on Monday, December 3rd: Typhoid Fever in the Aged, by Dr. A. S. Hamilton; Recent Views Regarding the Treatment of Acute Bright's Disease, by Dr. Lester W. Day.

The Millcreek Valley (O.) Medical Society.—At a meeting held at Cincinnati on Tuesday, December 4th, the officers elected at the November meeting were installed, as follows: President, Dr. W. O. C. Harding, of Elmwood; vice-president, Dr. Alvin Carr, of Reading; secretary-treasurer, Dr. J. W. Thiel, of St. Bernard.

The Oklahoma Medical News-Journal.—Beginning with the issue for January, 1907, this journal will have for its editor Dr. Y. E. Colville, of Chattanooga, Tenn., who has purchased one half interest in the journal, and will devote his entire time to the editorial department. Dr. J. R. Phelan will be the business manager.

Statement of Mortality of Chicago for the Week Ending December 1, 1906, compared with the preceding week, and with the corresponding week of 1905. Death rates computed on figures of United States Census Bureau's midyear populations—2,049,185 for 1906, 1,990,750 for 1905:

	Dec. 1, 1906.	Nov. 24, 1906.	Dec. 2, 1905.
Total deaths, all causes	571	577	483
Annual death rate in 1,000	14.53	14.68	12.65
Sexes—			
Males	313	344	275
Females	258	233	208
Ages—			
Under 1 year of age	95	114	82
Between 1 and 5 years of age	64	40	40
Between 5 and 20 years of age	47	39	26
Between 20 and 60 years of age	235	259	221
Over 60 years of age	130	125	106
Important causes of death—			
Apoplexy	14	10	17
Bright's disease	38	45	40
Bronchitis	14	20	18
Consumption	66	53	67
Cancer	23	28	23
Convulsions	9	14	7
Diphtheria	25	13	12
Heart diseases	62	51	40
Influenza	2	1	3
Intestinal diseases, acute	22	31	31
Measles	1	3	4
Nervous diseases	27	19	22
Pneumonia	82	90	62
Scarlet fever	17	13	1
Suicide	4	5	4
Typhoid fever	9	8	8
Violence (other than suicide)	41	35	21
Whooping cough	2	3	3
All other causes	113	135	100

Pith of Current Literature

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

December 8, 1906.

1. Symptoms of Cancer of the Uterus, By JOHN G. CLARK.
2. Report of Committee on Cancer of the Uterus, By JOHN G. CLARK.
3. The Operative Treatment of Cancer of the Cervix Uteri, By EMIL RIES.
4. The Radical Operation in Uterine Cancer, By Professor ALFONS VON ROSTHORN.
5. Fibroid Tumors of the Uterus (*To be continued*), By CHARLES T. NOBLE.
6. The Physical and Evolutionary Basis of Marriage, By BAYARD HOLMES.
7. The Guarantee of Safety in the Marriage Contract, By ALBERT H. BURR.
8. Education as a Factor in the Prevention of Criminal Abortion and Illegitimacy, By J. H. CARSTENS and HENRY O. MARCY.
9. The Guarantee of Safety in the Marriage Contract, By Professor A. DÜHRSSEN.
10. The Protection of the Innocent, By WILLIAM LEE HOWARD and EDWARD L. KEYES.
11. Malarial Hæmoglobinuria (*To be continued*), By WALTER V. BREM.
12. Value of Small Quantities of Human Milk in the Treatment of Infantile Atrophy and the Infectious Diseases of Infants, By FRANCIS P. DENNY.
13. A Plea for a Square Deal for the Wet Nurse. Wet-nursing of Foundlings Pernicious and Should be Abandoned, By WILLIAM T. WATSON.
14. A Series of Interesting Cases of Surgical Conditions of the Kidney, By G. FRANK LYDSTON.

1 to 4. Cancer of the Uterus.—Clark observes that there has not been one pathognomonic sign or symptom discovered which will point unerringly or even with approximate certainty to the onset of cancer of the uterus. The established fact that more than sixty-five per cent. of cases of cancer are turned away from our hospitals as inoperable, and that of those presumably operable only a very small proportion are ultimately cured, is a very serious reflection on our ability to make an early diagnosis in these cases. But the blame rests not only on the profession, for the patients only too often pursue such a procrastinating policy that nothing can be done by the time they consult a physician. The suggestive signs which should be investigated by an exhaustive examination in any woman between twenty-two years of age and the climacteric period are: 1. Any deviation of the menstrual period in the way of an excess or an intermenstrual discharge, especially in women beyond thirty years of age. The most suspicious of these are: (a) a mere show after slight exertion, defæcation, or coitus; (b) increasing length of the period, even if only one day more than has been her established habit. Every woman is a law to herself in this respect. 2. An exacerbation in amount or change in character of the discharge in a woman who may have had a simple leucorrhœa for months or years. Of these changes a free aqueous, acrid, or blood tinged discharge is especially portentous. 3. A leucorrhœal discharge in a patient who has never had it before. 4. Every atypical discharge in a woman after the menopause. These individuals are especially liable to cancer and should, if possible, be even more exhaustively examined. 5. Pelvic pain of more than a few days' duration should be an urgent reason for examination, although it is very seldom an early symptom of cancer. —Ries remarks that every cancer which is not removed completely kills its bearer sooner or later, the further it is followed up the greater the chance of removing it entirely. An incomplete operation does not save from death from cancer. It is worth while to risk a severe operation where the alternative is a lingering, often horribly painful and disgusting disease, the best side of which is the semiidiocy of the morphine numbed bearer of cancer.—Von Rosthorn concludes his paper with the following suggestions: 1. The abdominal operation is the most rational for the treatment of carcinoma of the cervix, since by its employment the most extensive removal of the parametric tissue is made possible. 2. The view that glands are involved only in later stages of the disease must be dismissed, and the fact that we sometimes find participation of the glands in the very early stages of uterine cancer has convinced him of the necessity of removing the glands in all cases, as he has always done. 3. Based on his own experience, he urgently advises it as our duty to operate in cases of recurrence which have not advanced too far for such procedures. On this account alone it is important to reexamine at frequent intervals (every eight weeks) after the primary operation.

6 to 10. Marriage and Its Obligations.—These seven papers were read in the Section on Hygiene and Sanitary Science of the American Medical Association, at the fifty-seventh annual session at Boston in June last. Holmes says that it was observed, in the early stages of society, that venereal diseases—syphilis and gonorrhœa—produce sterility or at least diminish fertility. As the perpetuation of any tribe or family was largely a matter of numbers and strength of arms each little group was at war with every other group, and self preservation and conquest were matters of endurance and constantly appearing fresh, young warriors. Success depended, then, on an unbroken stream of healthy progeny. This was only possible when the fecundity of the tribe was undiminished by venereal diseases, a condition secured through monogamous customs while less fertility weakened their polygamous adversaries. Other physical factors have acted with this one, but this one was early and has been and probably will be ever acting.—Burr refers to the Creel bill of North Dakota (1899) which requires all applicants for the marriage license to present a certificate from a medical examining board of three physicians, appointed by the county judge, showing freedom from venereal disease, habitual drunkenness, insanity, and tuberculosis; and says that, to insure a sanitary marriage it is imperative to establish a quarantine station before the marriage license window over whose gate should hang this legend: No health certificate, no license.—Carstens and Marcy place education in the foreground, combined with self control in the young.—Dührssen, using the words of another, that sanitary science prevents injury to another, even inadvertently, says that sexual abstinence until marriage is the mainstay, and such abstinency is facilitated by hard study, by the various athletic sports, and by abstinence from alcohol.—Howard is of the opinion that ignorance of matters pertaining to sexual questions in young girls is the chief cause of their downfall. In sex instruction, even with the sexes separated, we must have group instruction, according to the mental and physiological development of the individual girl. This instruction must be given by those who realize the tremendous significance of the sexual awakening.—Keyes's article follows the same idea of education, at the proper time by the proper person.

12. Value of Small Quantities of Human Milk in the Treatment of Infantile Atrophy and the Infections of Infants.—Denny states that the chief causes of failure of an exclusive artificial diet are: a, Disturbances of assimilation, of which infantile atrophy is an extreme type; b, a diminished resistance to bacterial infections. The benefits of human milk in these conditions probably depend on the action of ferments, and it is therefore rational to expect to get results from the use of small amounts of human milk, while good results are obtained by the addition to the infant's diet of two to five ounces of human milk a day. Discretion must be exercised in giving breast milk in the early stages of a

gastrointestinal infection. But it is poor practice and unjustifiable to have a wet nurse abandon her own child in order to nurse a sick baby. Much can be done with breast milk obtained from poor mothers, women living at home, who come to the hospital or house a few times a day. The amounts obtained at each nursing should be determined by the nurse's compensation made proportional to the quantity furnished. It is unjustifiable to keep babies in hospitals or institutions unless a sufficient amount of breast milk is added to their diet to render them resistent to hospital infections.

13. **A Plea for a Square Deal for the Wet Nurse.**—Watson attacks the system of giving out foundling infants to be wet nursed, relating the dangers following such practice. Wherever such system is in vogue there chancres of the breast abound. Some years ago Bulkley collected 1,148 cases of chancre of the breast. He says regarding them: Italy takes the lead, furnishing thirty-three per cent. of the cases. Russia, Poland, and France also give large numbers, in all of which countries baby farming is very prevalent. The system should be done away with, as our modern methods of raising infants show great success.

MEDICAL RECORD.

December 8, 1906.

1. Trypsin for the Cure of Cancer, By WILLIAM J. MORTON.
2. A Case of Bronchitis; with Remarks on Cough and the Perforated Zinc Inhaler, By BEVERLEY ROBINSON.
3. Observations on the Ætiology of Cancer, By WILLIAM H. DIEFFENBACH.
4. The Importance of the Early Diagnosis and Treatment of Epileptic Symptoms, By FRANK M. STITES.
5. Late Results of the X Ray Treatment of Cutaneous Epithelioma, By CHARLES MALLORY WILLIAMS.
6. Some Ætiological Factors in Bone Tuberculosis in Children, By CHARLTON WALLACE.
7. Sarcoma of the Nasal Fossa, By RICHARD H. JOHNSTON.

1. **Trypsin for the Cure of Cancer.**—Morton has instituted, since April, a series of experiments with a view to testing trypsin for the cure of cancer, consisting in the consecutive use of trypsin in a series of about thirty cases. He comes to the conclusion that trypsin deserves further trial, but reserves his opinion as to its actual therapeutical value until he can speak from a larger experience. Beard, of Edinburgh, who is proposer of this method, believes that the cancer cell differs from other cells solely in the characteristic that it is a latent and aberrant germ cell unmodified as it should have been in the ordinary course of the development of the embryo. It is, thus, not a somatic cell, but one which in the life cycle of the development of the embryo, should have "degenerated" and passed out of existence. The thing that should have destroyed it, at about the sixth week of the life of the embryo, is the pancreatic juice from which trypsin is extracted. Certain of these germ cells, undestroyed by the pancreatic juice of the embryo, become located in various out of the way corners of the growing human being, and later on, under favoring circumstances, propagate themselves and thus produce what we call cancer. Therefore, administer pancreatic juice hypodermically and in excess to the patient to destroy these "germ" or cancer cells, and also administer pancreatic diastase (amylopsin) independently of the proteolytic and fat splitting ferments (trypsin and lipase). Among the conclusions of Morton may be mentioned: Rigors and increased temperature following within a few hours the injection of trypsin are an encouraging sign, since they indicate that the cancer has been attacked by the trypsin. The symptoms are due to the toxic action of absorbed and destroyed cancer products. Trypsin has a decided effect in reducing cancer cachexia and in improving the general health. The result of the trypsin treatment in many instances demonstrates that even in severe cancer of uterus involving the associated pelvic organs the disease may be brought to a halt, so to speak, even if the patients do not eventually recover. The use of trypsin has caused hæmorrhages to cease and has alleviated pain. It is a fact that the patients frequently refer their greatest feeling of improvement to the period of time when they are taking amylopsin following trypsin. An important, as well as a difficult, feature of the treatment, therefore, is reasonably to determine the proper time to administer the diastatic ferment as well as the requisite amount, following or during the use of the trypsin. It has seemed to him that the pure diastase (injectio amylopsini) had much to do with favorable results.

2. **A Case of Bronchitis; with Remarks on Cough and the Perforated Zinc Inhaler.**—Robinson is in favor of the zinc inhaler with a solution of equal parts of beechwood creosote, alcohol, and spirit of chloroform. From 5 to 15 drops of the liquid may be dropped on the sponge of the inhaler and renewed one or more times daily, as required. At first the inhaler should be worn a few moments at a time and reapplied every hour or two. Later, after a few days, a week or more, the inhaler may be worn continuously one or more hours during the day, and even night. He is also confident that in every stage of pulmonary phthisis the perforated zinc inhaler will be found valuable, not only to supplement other curative measures, and even the internal use of creosote properly given, but also because of itself it is directly curative.

3. **Observations on the Ætiology of Cancer.**—Dieffenbach has made the following observations from his cancer patients: 1. Sex; about sixty per cent. women. 2. Age; passed fifty; majority fifty-two to sixty-five years. 3. General health; fairly robust; constipation present in almost all the cases; hepatic disturbances common; negative history of syphilis and tuberculosis in nearly all the cases; history of gonorrhœa admitted in the majority of male cases. 4. Hereditary cancer in but ten per cent. of cases. 5. Vaccination in all cases questioned. 6. After persistent questioning history of trauma preceding neoplastic growth in ninety per cent. of cases. This statement seems to the author to be of great import, especially in reference to cancer of the breast and of the uterus in women, and to cancer of the throat and tongue in men, which is so much more common in men as in women and undoubtedly due to the habit of smoking, with its entailing irritation in some cases. It can be explained on no other basis. If these statements, concludes the author, prove correct, it behooves us as guardians of the public health to warn against neglecting traumatism of all kinds; to warn against certain habits and occupations which induce constant irritation, and to insist that when trauma occurs or exists proper medical attention be given without delay.

4. **The Importance of the Early Diagnosis and Treatment of Epileptic Symptoms.**—Stites remarks that a diagnosis of epilepsy at the earliest possible stage of its development is essential to successful treatment. Convulsions from any cause and at any age are not to be regarded as of slight significance, but the possibility of the development of epilepsy in every case must receive careful consideration. Recurring convulsions in the young, associated with hereditary susceptibility to nervous diseases, should invariably be regarded as probably epileptic in their nature. The more insignificant the exciting cause the stronger the indication of this disease should be regarded. It should be remembered, at the same time, that each return of the seizure renders permanent cure more doubtful. Though care should be exercised in doubtful cases it is better to give the patient the benefit of the doubt and institute treatment early, even when a positive diag-

nosis of epilepsy is not possible, than to allow the condition to become chronic and perhaps hopeless. The general care which should be given to a patient supposed to be epileptic would, in fact, benefit any obscure nervous disease, whether convulsive or not in its nature.

BRITISH MEDICAL JOURNAL.

November 24, 1906.

(Seventy-Fourth Annual Meeting of the British Medical Association.

Section of Therapeutics.

1. The Treatment of Uræmia, By E. Le Fevre.
2. Opsonins and Bacterial Vaccines, By G. W. Ross.
3. The Action of Drugs in Vascular Hypertension, By T. L. Coley.
4. The Respective Spheres of Hygienic and Medicinal Measures in the Treatment of Pulmonary Tuberculosis, By S. S. Cohen.
5. The Working Bulletin System for the Collective Investigation and Classification of the Newer Materia Medica, By F. E. Stewart.
6. Drug Fallacies, By W. E. Dixon.
7. The Action of Drugs on the Uterus, By A. R. Cushny.
8. A Discussion on Alcohol as a Therapeutic Agent, By A. D. Blackader and S. J. Meltzer.
9. A Discussion on the Teaching of Materia Medica and Pharmacology, By J. T. Halsey, T. McCrea, C. R. Marshall, and others.
10. Therapeutics of Acute Acquired Insanities, By D. R. Brower.

Section of Laryngology and Otology.

11. Subperiosteal Abscess of the Forehead, Complicated with Thrombophlebitis of the Superior Longitudinal Sinus, Extending to the Lateral Sinus and Jugular Vein of the Opposite Side: Meninigitis: Death: Necropsy, By V. Delsaux.
12. A Discussion on Laryngeal Disturbances Produced by Voice Use, By M. Hunt and W. E. Casselberry.
13. Inflammatory Nasal Obstruction as an Ætiologic Factor in the Production of Sputa, By W. P. Porcher.
14. Thyreotomy and Laryngectomy for Malignant Disease of the Larynx, By C. Jackson.
15. A Discussion on Congenital Stridor (Laryngeal and Tracheal), By A. L. Turner and H. Ashby.

Other Articles.

16. The Past of Dermatology in Edinburgh, By N. Walker.
17. On the Action of Salicylates in Acute Rheumatism, By R. Stockman.
18. The Recognition of Myelopathic Albuminose in the Urine, By T. R. Bradshaw.
19. Rheumatic Fever and Amyloid Degeneration, By J. M. Beattie.
20. Myomectomy During Pregnancy and Labor at Term in an Elderly Primipara: with Notes on Similar Cases, By A. Doran.
21. Congenital Laryngeal Stridor, By D. R. Paterson.
22. Notes on an Unusual Case of Papilloma of the Larynx in a Child Treated by the Local Application of Formalin, By A. Bronner.

1. **Uræmia.**—Le Fevre divides cases of uræmia into three classes: 1. Those occurring in patients with previously normal kidneys, the attack coming on with great suddenness during the course of an infectious disease. There is anuria, with abundant albumin, blood, and casts; the urea percentage of the blood is normal, and the bodily temperature is elevated. A toxic substance produced by bacteria is the primary cause. 2. Those with a history of previous disturbance of the kidneys, coming on suddenly during an infectious disease or after an alcoholic debauch, and likewise due to bacterial toxines. The urea percentage of the blood is high, the amount of urine normal, and there is no cardiovascular change. 3. Those associated with chronic nephritis and renal insufficiency, the symptoms being those of chronic uræmia. The urea percentage of the blood is high, cardiovascular changes are present. Uræmic convulsions can be temporarily controlled by chloroform inhalations. Morphine is often of value, but must be carefully watched. Coma with high tension is best treated by venesection or rapid catharsis; when the tension is low, digitalis is indicated. Uræmic dyspnœa is a form of convulsive spasm and should be so treated. The eliminative function of the kidney should be furthered from the start; aconite, digitalis, and caffeine are all of value. No potassium salts should be used. Uræmic diarrhœa is an attempt at elimination and should not be checked. Elimination by the skin (hot packs and baths) is very important; pilocarpine is unsafe. The removal of the toxines can be best brought about by venesection; the electric light bath is also of great service.

3. **Drugs and Hypertension.**—Coley's observations go to show that the action of a drug on the normal circulation is not paralleled in cases of circulatory disease, as shown by the action of veratrum, aconite, and nitroglycerin. The routine use of the iodides produces no effect in cases of marked hypertension. Arsenic may be of value in certain cases of arteriosclerosis of plethoric type, but more for its general than depressant action on the blood pressure. The drugs increasing elimination are most logically employed. In many cases the increased pressure is physiological and should not be interfered with. The use of aconite or veratrum viride to reduce pressure is unjustifiable.

8. **Alcohol.**—Blackader holds that alcohol is not an efficient cardiac or respiratory stimulant to be used for long periods. As a narcotic it can be freely used, and has but few injurious after effects. It should be used cautiously in infections of all forms. In fever or exhaustion of the nerve centres with inability to digest, it may be employed as a food, replacing the carbohydrates. Meltzer favors a judicious use of alcohol in disease. It can take the place of carbohydrates and fats, and saves proteids. It supports the development of immunity against infection, stimulates the heart, and corrects the dangerous distribution of blood. It assists in covering the expenditure of energy of the diseased body, and protects its tissues from breaking down.

10. **Acute Acquired Insanity.**—Brower states that acute acquired insanity can be successfully treated in a general hospital. Treatment consists in isolation, rest in bed, an efficient nurse, a generous diet, elimination by skin, kidneys, and bowels, the correction of any error in general metabolism that can be reached.

13. **Sputum Due to Nasal Obstruction.**—Porcher is convinced that the word "sputa" is a misnomer in that it defines all expectoration to be a product of the lower respiratory organs alone and saliva. Inflammatory nasal obstruction is a much more frequent source of profuse expectoration than is commonly accorded it. The symptoms of chronic bronchitis are so varied and uncertain that the diagnosis is often based alone upon the prolonged expectoration. Nasopharyngeal secretions pass down into the larynx, accumulate in the false ventricles, and are expelled by coughing.

17. **Salicylates in Rheumatism.**—Stockman holds that there can be no doubt that salicylic acid and its compounds have a specific effect in acute rheumatism. But they are given usually in too small doses; from 90 to 160 grains should be given daily, and much larger doses at the outset. The drug should be administered frequently, as it is eliminated very rapidly. It is often impossible to push it, owing to the production of deafness and other symptoms, due to an action on the nerve centres. It works best in the joint cases because it is excreted readily into the joint cavity from the blood. Where the disease affects fibrous tissues, however, its action is much less rapid and powerful. Early treatment with sufficiently large doses greatly lessens the risk of acquiring valvular disease and chronic fibrositis, and also diminishes the frequency of prolonged sub-

acute fever and of relapses, as these last are due to organisms surviving in the fibrous tissue. Besides internal administration of sodium salicylate, the free local application of methyl salicylate externally is of great value.

18. **Myelopathic Albuminose.**—Bradshaw gives the tests for the recognition of myelopathic albumose in the urine, the peculiar substance which is pathognomonic of multiple myeloma, an absolutely fatal disease. Early diagnosis depends upon the recognition of the presence of albumose in the urine. It is closely related to the albumins, and reacts to the common tests, but differs in the following particulars. It coagulates at a much lower temperature than albumin—about 58° C, The coagulum dissolves on boiling. It gives a white precipitate with strong hydrochloric acid; this test is very delicate. Where small quantities only are present the ring method should be used. The precipitate with strong nitric acid is dissolved on boiling, and reappears on cooling. Coagulation takes place with potassium ferrocyanide and acetic acid just as is the case with albumin, but much more slowly. Finally, albumose becomes deposited in an insoluble form on standing for a longer or shorter time.

19. **Amyloid Degeneration.**—Beattie reports four cases in which amyloid degeneration was found in various organs of patients who had died from acute rheumatism or its sequelæ.

21. **Congenital Stridor.**—Paterson, from a study of five cases of congenital laryngeal stridor, concludes that there is no malformation of the mouth or larynx, and no evidence of abnormal breathing. Stridor takes place at the entrance of the larynx by the vibration of the soft structures of the posterior wall. The vocal cords take no part in its production and compression of the trachea by an enlarged thymus is no essential element.

LANCET.

November 24, 1906.

1. The Evolution of the Streptococci (*Horace Dobell Lecture*), By F. W. ANDREWES.
2. The History of the Study of Clinical Medicine in the British Islands (*Fitzpatrick Lectures*, II), By N. MOORE.
3. The Reciprocal Relations Between Affections of the Uterus and Its Appendages and the Rest of the Body, By T. WILSON.
4. Description of a Heart Showing Gummatous Infiltration of the Auriculoventricular Bundle, By A. KEITH and C. MILLER.
5. Thirty-three Consecutive Hysterectomies. By W. H. RICHARDS.
6. Further Notes to a Case of Myelopathic or Splenomegalic Polycythæmia, By F. P. WEBER.
7. Two Cases of Perforated Gastric Ulcer Successfully Operated On, By D. MACARTNEY.

1. **The Streptococci.**—Andrewes endeavors to trace the lines along which the development of the streptococci has taken place. The streptococci are a well defined natural group of bacteria deserving in all ways to rank as a "genus" in the natural history sense. The cocci are placed lowermost in the bacterial scale; their division into genera is based largely upon the arrangement of the units in larger groups, which again depends upon the series of planes in which fission takes place. The plane of division of the streptococci is always the same—a plane at right angles to a constant axis of growth. Certain streptococci possess a thick and well defined capsule, but it is not constant and depends upon the medium upon which the coccus is growing. The pneumococcus forms capsules only when growing in the animal body or in special media. Metchnikoff contends that the capsule is a defensive mechanism, thrown out as a protection against injurious agencies. Morphology is of very little assistance as a means of specific classification; the sum total of the biological characters of any given form must always be taken into account. The varieties of streptococci are bewildering, but the author concludes that those met with in human beings, in health and disease, present some half dozen forms of approximately specific value connected by a multiplicity of intermediate varieties. There are three modes of life amongst bacteria. In the first the nourishment is mineral—carbon dioxide and nitrates. The second class, the saprophytes, live on dead organic matter. The third, the true parasites, have acquired the power of feeding on living organic matter. The streptococci have advanced part way along this path. They have cut themselves entirely adrift from mineral food, and cannot subsist thereon. Most of them belong to the second or saprophytic class. To all intents and purposes they are exclusively attached to the animal body and in particular to the alimentary canal. Here and here alone, they flourish and prevail in incredible numbers. Voided from the body they may survive for a time in earth or water or dried up as air borne dust, but to thrive and to multiply they must be swallowed by a suitable host. When found outside the body they are always the result of pollution. The resistance of streptococci to heat is not great; they are easily destroyed by a temperature of from 54° to 56° C. But against resistance their resistance is much higher; a special adaptation to saprophytic life in the alimentary canal. Difficult to explain is the resistance displayed by the streptococci to certain chemical poisons, a resistance which they share with the organisms of the colon group; they can grow well in broth containing 1 in 1,000 of carbolic acid. But it is in their power of assimilating various chemical substances as food that the streptococci best show their adaptation to a saprophytic existence in the alimentary canal. Certain of the common forms have become weak facultative parasites; they cannot attack healthy tissues or produce acute suppuration. But they can and do multiply in the blood during the last hours of life, and given a weak spot, they can set up chronic suppuration. And finally certain forms have progressed far enough to acquire highly developed parasitic powers and a high degree of virulence. The streptococcus pyogenes and the pneumococcus have developed actively aggressive powers, and manufacture chemical poisons, hæmolysins, which destroy red blood corpuscles, and deadly toxines destroying tissue cells with which they come in contact.

LA PRESSE MEDICALE.

November 17, 1906.

1. Opening Lecture at the Clinic for Diseases of the Urinary Passages, By Professor ALBARRAN.
2. Ignace Philippe Semmelweis, 1818-1865. By Professor PINARD.
3. Apropos of the Localization of Motor Aphasia, By Professor J. DEJERINE.
4. Arteriosclerosis. Pathological Anatomy and Pathogeny, By O. JOSUÉ.
5. A New Method of Amputation (Cinéplastique) of the Arm and Forearm, By Professor ANTONIO CECI.

1. **Opening Lecture.**—Albarran gives a brief history of the surgery of the urinary passages, beginning with the studies of Suscruta in India, B. C. 800 or 900, and tracing its progress down to the present time.

3. **Localization of Motor Aphasia.**—Dejerine's article is controversial and in defense of his opinions on this subject.

4. **Arteriosclerosis.**—Josué holds that the lesions of arteriosclerosis are hyperplastic and degenerative. The hyperplasia he attributes to functional exaggeration of the elastic and muscular elements of the arterial wall, caused by hypertension, and above all, by frequent changes in tension. The degenerative changes he considers due to the overworked condition of the hyperplastic artery, and believes that the appearance of these degenerative changes is favored by certain conditions which are produced by infections and intoxications, such as

poisoning with tobacco, lead, and especially adrenalin, or, rather the secretion of the suprarenal capsules. The same toxic substance may determine both the hyperplastic modifications and the degenerative lesions. Although the secretion of the suprarenal capsule may do this, the changes which are produced by it are degenerative rather than hyperplastic.

5. Amputation of the Arm.—Ceci presents three cases of amputation of the arm and forearm in which he sutured the tendons of the flexor and extensor muscles in such a way as to form a loop, which extended below the rest of the stump and secure the action of those muscles on the artificial limb afterward adjusted. The description of one operation is as follows: The patient was chloroformed and bleeding prevented by a rubber bandage. (a) An incision was made two fingers' breadth below the fold of the elbow through the skin and subcutaneous tissue, which was then dissected up to the junction of the middle and upper thirds of the arm. (b) The tendon of the biceps was carefully separated from its radial insertion, and that of the triceps from the olecranon. (c) A circular incision was then made about the humerus which, after elevation of the periosteum, was divided in its lower third. (d) The elastic bandage was removed, bleeding carefully checked, and the nerve trunks resected. The tendon of the biceps was then sutured to that of the triceps, so as to form a loop. (e) Two lateral incisions on opposite sides, five centimetres long, were then made in the long cutaneous sheath three centimetres from its free margin. This cutaneous sheath was then superimposed upon the tendinous loop, and the margins of the two incisions were sutured, so as to leave an opening in the middle of the loop. (f) Finally, the lower border of the cutaneous sheath was sutured in a sagittal direction, and thus the musculotendinous loop was entirely covered by skin and subcutaneous tissue. The opening made in the middle of the loop was packed with gauze to keep it open. The exuberant skin and tissue atrophied rapidly, and after the cicatrix was solid exercises in traction were instituted, and finally the action of the muscles whose tendons formed the loop was utilized to contract the fingers of an artificial hand.

November 21, 1906.

1. Experience with the Antituberculous Vaccination of Cattle by Behring's Method at Melun, By H. Vallée.
2. The Action of Collargol in Puerperal Infection, By E. Bonnaire.
3. Experimental Syphilis, By R. Romme.

1. Antituberculous Vaccination of Cattle.—Vallée states that fifteen animals were tested in the following manner three months after they had been vaccinated according to Behring's method: Two vaccinated animals and two controls were put in contact with other animals which had evident tuberculous lesions. Six vaccinated and six nonvaccinated animals were injected intravenously with four milligrammes of very virulent bacilli. Seven vaccinated and seven nonvaccinated animals were inoculated subcutaneously with virulent organic products of bovine origin. The results in the animals inoculated subcutaneously were: 1, Extensive lesions of the prescapular glands in the seven controls and in one of the vaccinated; and, 2, extension of the infection to the lungs in five of the controls, while the viscera remained unaffected in all of the vaccinated. The results in those in which bacilli were injected into the jugular veins were: 1, Death of the three of the controls after twenty-nine, thirty-four, and thirty-seven hours; 2, generalized lesions of tuberculosis in the remaining three demonstrated post mortem; and, 3, post mortem examination of the vaccinated animals a month after the infection revealed from two to four very small tubercles in the bronchial glands of two, and that the lungs of all were free from tuberculosis. In the animals subjected to infection by cohabitation, the reaction to tuberculin was insignificant in the vaccinated, while in the controls the reaction was violent and post mortem examinations revealed serious tuberculous lesions of the abdominal viscera and lungs.

2. Collargol in Puerperal Infection.—Bonnaire calls attention to some of the dangers which attend the internal use of collargol when it is given as a means of prophylaxis against the occurrence of puerperal fever.

ZENTRALBLATT FUER CHIRURGIE.

November 3, 1906.

1. An Ideal Truss for Inguinal Hernia in Infants, By K. Fiedler.

1. A Truss for Infants.—Fiedler recommends for a truss for inguinal hernia in infants, a skein of yarn tied about the waist and slung about the thigh on the corresponding side, the knot coming over the hernia. [This method of treating herniæ in young infants has been used in America not less than twenty-five years.]

November 17, 1906.

1. Sterilization of Catgut, By Conrad Stich.
2. Plastic Operations in the Peritonæum with Isolated Pieces of Omentum, By S. S. Girgolaff.

2. Isolated Omentum for Plastic Use.—Girgolaff has found experimentally that the large intestine or stomach may be purposely injured, loosely sutured, and covered with a piece of omentum taken from the same animal. Within from twenty-four to forty-eight hours, the omentum forms vascular adhesions with the organ to which it has been attached, and covers over the wound perfectly without forming any adhesions with the parietal peritonæum. So great is the vitality of the isolated pieces of omentum, that he also used them experimentally upon injuries of the liver as "living tampons" with excellent results. The results of implanting the omentum upon the small intestine have not been quite so good.

ZENTRALBLATT FUER GYNAEKOLOGIE.

November 10, 1906.

1. Sterilization of Women, By Mensinga.
2. A New Uterine Irrigator, By Gutbrod.

1. Sterilization of Women.—Mensinga takes issue with Rochard as to the justification of artificially making women sterile. The welfare of the race, he contends, depends upon healthy women with healthy breasts. Weakened, sickly, or exhausted women, unable to nurse their offspring, should not be compelled or allowed to bring children into the world. Especially, insists the author, should this hold true in France. The method of bringing about sterilization and the effects of the premature menopause—which latter can be largely mitigated by the use of lutein—are purely secondary considerations.

November 17, 1906.

1. Foreign Bodies in the Peritoneal Cavity, By W. S. Gruzdew.

1. Foreign Bodies in the Peritoneal Cavity.—Gruzdew records the case of a woman who had been laparotomized by another surgeon and who presented herself with a hard, resistant metal mass which could be felt just beneath the skin and which could be palpated by bimanual examination. By vaginal section he was able to remove the clamp which was covered with dense connective tissue. The clamp had been in the abdomen for seven years, and had become entirely encapsulated. The author cites some similar, recorded cases, and gives the details of several methods employed by different operators to prevent such mistakes.

ROUSSKY VRATCH.

October 28, 1906.

1. On the Prevention of Mortality in Cancerous Affections, By V. M. Zykoff.
2. On Experimental Syphilis in Monkeys (*Concluded*), By M. A. Tchlenoff.
3. The Treatment of Leucæmia with the X Rays, By A. F. Drzhevetski.

4. Formation of Artificial Vagina by Snegirieff's Method, By P. F. GOUSSIEFF.

1. The Fight Against Cancer.—Zykoff studies the statistics of cancerous affections and suggests that in order to diminish the mortality from these diseases operative treatment, should be instituted early, after a prompt diagnosis, in cancer of the stomach. In the diagnosis of this class of troubles, next to palpation, we must rely upon the examination of the gastric contents. By this means we can detect gastric cancer much earlier than it appears in palpation.

2. Experimental Syphilis.—Tchlenoff presents a very complete review of the research on syphilitic infection, immunization, etc., conducted since the discovery of the *Spirochæta pallida* by Schaudinn. The conclusion he draws from a study of this mass of research which has accumulated within the past eighteen months is that very probably a serum will be discovered with the aid of which one can accurately diagnosticate the disease. He believes with Hoffman that now that the *Spirochæta pallida* has been found we should go on experimenting upon the less susceptible animals—the young pig and the young horse, especially. Although the experimental material on monkeys is still scanty, there is no doubt that the clinical era of syphilis has ended and that the bacteriological has at last dawned. With this new phase lie all our hopes for the future. As Neisser said at the Lisbon Congress: "I regard it as the highest fortune of my advanced life that I can once more begin to work upon a question of such enormous social interest, and no one feels more than I how thankful we must be to those benefactors of humanity—Metchnikoff, Roux, and Schaudinn."

3. Leucæmia Treated with Roentgen Rays.—Drzhevetski says that he obtained excellent results in a case of leucæmia treated with the Röntgen rays. Twenty-five séances were used, within six weeks, and though he does not claim a complete cure in the short time of observation, he reports that three months after the cessation of treatment the patient's condition had continued excellent. The Röntgen rays must be used carefully in leucæmia, for if the treatment be forced, unpleasant results may follow, as dermatitis, nephritis, etc. These effects are said to be due to leucotoxines resulting from a decomposition of white blood cells. The treatment should, therefore, be interrupted from time to time to give the body a chance to eliminate the products of decomposition of the white blood cells. It is possible that an excessive use of the x rays may account for some of the failures recorded in the use of this method of treating leucæmiæ. Full credit is given in this article to the American writers, Childs, Dunn, Pusey, and Senn, who introduced this method of treatment.

November 4, 1906.

1. The Modern Pharmacal Treatment of Disease (*To be concluded*), By S. V. LEVASCHEFF.
2. A Case of Complete Inversion of the Viscera, By M. M. POKROVSKI.
3. Primary Cancer of the Lungs, By Z. F. ORLOVSKI.
4. Case of Primary Endothelioma of the Lung, By D. A. YERMOLINSKI.
5. Cæsarean Section for Relative Indications, By S. S. KHOLMOGOROFF.
6. A Method of Preserving the Percentage of Active Chlorine in Solutions of Calcium Hypochlorite, By K. A. BOLOVSKI.

2. Visceral Inversion.—Over two hundred cases of complete or partial inversion of the viscera have been reported, but only a small number of these has been corroborated by autopsies. Pokrovski's case occurred in a hack driver, aged thirty, Russian, who was admitted to the hospital for an attack of influenza, followed by otitis media. A perforation was found in the drum; the patient had a high temperature, headache, and answered but listlessly the questions of the surgeons. A cerebral abscess was revealed upon trephining. The patient improved for a month, then grew worse again, and a second trephining was resorted to. Two months later he was trephined for the third time, and a suppurating thrombus was found in the transverse sinus. A few days later a large phlegmonous abscess had to be opened in the neck. The patient died three months after admission. The autopsy showed purulent meningitis, especially at the base, and an abscess in the left temporal region, of the size of a walnut. A complete inversion of the viscera was revealed at autopsy, the heart occupying the right half of the chest; the aorta arising from the right ventricle, the venous orifice of which was closed by a bicuspid valve. The pulmonary artery arose from the left ventricle, which was provided with a tricuspid valve. The innominate artery was on the left side; to the right of the arch were (separately) the carotid and the subclavian arteries. The descending thoracic aorta and the abdominal aorta lay to the right of the spine. The right lung consisted of two lobes; the left of three. The liver was on the left side; the spleen on the right. The stomach and intestines were arranged to correspond with this inversion, the cæcum lying in the left and the sigmoid in the right iliac fossa.

3. Clinical Features of Primary Cancer of the Lungs.—Orlovski collected a number of autopsy reports from various sources, making a total of 59,173 autopsies. In these primary cancer of the lungs occurred 114 times, i. e., almost two cases per thousand autopsies (or 0.19 per cent.). He reports one case which he studied in detail, and contributes an interesting analysis of the clinical symptoms of primary cancer of the lungs. The only pathognomonic sign of the disease is the presence of bits of tumor or of "cancer cells" in the sputum, in the pleural exudate, or in the material obtained by exploratory puncture. Unfortunately these characteristic elements are usually absent, and if present are often to such an extent the seat of fatty degeneration that they cannot be identified. Another useful symptom is the enlargement of the lymph nodes, but unhappily the nodes affected are the bronchial and other groups which are inaccessible. A peculiar raspberry jelly look was thought by Stokes to indicate cancer of the lungs, but this sign is not certain, for other authors have described rusty sputum, and sputum of various colors, including olive green, saffron-yellow, etc. Hæmoptysis may occur repeatedly in the course of the disease. The presence of groups of epithelia, usually under young fatty degeneration, was thought to be characteristic of the sputum of cancer, and is probably a useful, though not an absolute clue. The tubercle bacillus may be found in the sputum of patients with cancer of the lung, as tuberculosis quite frequently coexists with cancer. The sputum in cancer is usually viscid and tenaceous. The cough may be slight, but often is severe and persistent. It is accompanied frequently by dyspnœa, pain in the chest, a feeling of oppression, etc. There may be an intermittent febrile movement which has nothing characteristic. The chief complication is a pleural effusion. The physical signs are not trustworthy, as a small cancerous area around a bronchus may give rise to a large area of dulness and bronchial breathing. This was the case in the instance reported in the present article. The autopsy showed that the diagnosis had been correct.

6. To Preserve the Amount of Chlorine in Solutions of Hypochlorite.—Bolovski devised a method for estimating the amount of active chlorine in solutions of calcium hypochlorite, which are used for the detection of indican in the urine. It is difficult, ordinarily, to keep on hand a solution of calcium hypochlorite containing the needed amount of active chlorine for the indican tests. The author suggests that the solution be kept on ice, or, rather, packed in ice. By this means he has been able to preserve it for months.

ARCHIVES OF PÆDIATRICS.

November, 1906.

1. Some Phases of the Feeding Problem, By L. E. Holt.
2. Adherent Pericardium with Ascites, By S. W. Sappington and C. F. Rau.
3. A Study of Proteids in Infant Feeding, By F. M. Fry.
4. Resumé of Work Done in the Section of Diseases of Children, American Medical Association, June, 1906, By E. E. Graham.

1. Some Phases of the Feeding Problem.—Holt thinks there is much confusion among pædiatricians on the subject of infant feeding. One of the causes of trouble is the great number of complicated methods of calculating percentages in the constituents of milk which have been published. The refinements of these methods are absolutely lost on the profession, as a whole. The writer's idea is that simplicity in formulæ with moderate flexibility is the essential, and that he is master of the situation who can use a few formulæ wisely. There should be substantial agreement among writers upon the following points: 1. The normal range of milk percentages borne by infants. 2. The approximate percentage, composition of milk, cream, and top milk which are being used for infants' food. 3. The simplest possible method of obtaining the percentages desired from the ingredients mentioned. 4. The necessity of translating at once into percentages any milk formula a patient may be using, and a simple method for making such a calculation.

2. Adherent Pericardium.—Sappington and Rau refer to that form of adherent pericardium which is associated with ascites and enlarged liver differentiating it from simple adherent pericardium and other varieties of mediastinopericarditis. The symptoms are almost entirely abdominal, and may lead to the incorrect diagnosis of hepatic cirrhosis, tuberculous peritonitis, or some other subdiaphragmatic trouble. Most of the cases occur during childhood or adolescence. The principal ætiological factors are tuberculosis and rheumatism. The serous membranes throughout the body are often associated with the pericardial lesion. Especially is this true in regard to the pleura, though pleural adhesions are sometimes of no great pathological importance. Infection of the pericardium, pleuræ, and peritonæum, may all have originated from tuberculous lymph glands. The symptoms which the author regards as suggestive of the condition under discussion are marked or recurrent ascites, without or preceding œdema of the legs, enlargement of the liver, persistent cyanosis, especially of the lips and ears, pale puffed face, and small rapid pulse. The cause of the ascites in this disease is probably hepatic congestion, though this has not yet been absolutely determined.

3. A Study of Proteids in Infant Feeding.—Fry gives the following summary as the result of his investigations: 1. When standard milk was used the formulæ for proteids were very accurate. 2. The artificial foods which were used gave as distinct an improvement as could be expected from theoretical considerations, this being manifested by absence of vomiting of diarrhœa, and of curd in the stools; also by gain in weight and in reduced mortality. 3. Caseinogen being kept at a minimum and lactalbumen at a maximum, very strong foods can be given with good results. 4. The best results were obtained by increasing the strength of the foods at intervals of several days, from a proteid of caseinogen 0.15 per cent. and lactalbumen 0.35 per cent. to caseinogen 0.15 and lactalbumen 0.75 per cent. 5. Inasmuch as the bulk of the proteid should be represented by an abundance of lactalbumin is is of great importance that a whey should be used which contains the greatest possible amount of albumin. 6. The possible good results will not be realized if there is variation in the composition of the milk, unless this is recognized by careful analysis, and considered in the modification of the milk. 7. These analyses may be made by a few hours' work, or may be obtained from a chemist at a moderate expense, hence their necessity does not make modified milk impracticable.

Proceedings of Societies.

NEW YORK ACADEMY OF MEDICINE.

Section in Genitourinary Diseases.

Meeting of October 17, 1906.

Dr. Follen Cabot in the Chair.

A Case for Diagnosis.—Dr. Victor C. Pedersen presented a young woman, twenty-one years of age, white, single, and a clerk, for diagnosis. The family history was negative. One or two brothers and sisters had notched teeth. The past history was fairly good. About a year ago he had a severe attack of typhoid. He denied all venereal history. He had suffered from frontal headaches in the afternoon for a number of years. About two weeks ago he noticed a painless swelling on the left shin. Examination showed a small rough node on the left shin, without tenderness, local heat, fluctuation, or general rise of temperature. He showed some improvement after two weeks' antisyphilitic treatment. The question arose as to whether the condition was syphilitic, a post typhoid periostitis, tuberculous disease of the bone, or a neoplasm of the bone. Posttyphoid bone lesions were peculiar in arising at almost any period after the fever and in following varied forms and courses, so that the precedence of typhoid fever rendered this diagnosis possible.

Dr. George Emerson Brewer said that posttyphoid periostitis could be excluded, as it was very painful until it broke through the periosteum. Tuberculosis of the shaft of the bone was almost unknown. The fact that the patient had a periosteal thickening and involvement of the subcutaneous tissues and skin pointed toward a gummatous condition.

Dr. Martin W. Ware agreed with Dr. Brewer in the opinion that the condition was probably syphilitic. He thought that an x ray examination would show whether it started in the centre of the bone or on the surface.

Dr. Pedersen was inclined to regard the condition as syphilitic, but the other conditions had been suggested.

Unilateral Hæmaturia Due to Filariasis.—Dr. F. Tilden Brown presented this patient. He said the interesting feature of the case was a unilateral hæmaturia. So far as he could find in the literature, the explanation of hæmaturia in association with filariasis was not made clear, whereas the chyluria occurring in that condition was explained very satisfactorily. The patient was a colored women, thirty-three years old, who was born in the West Indies, and had lived there until two years ago. She was in the Presbyterian Hospital with the same trouble from April 14 to May 24, 1905. Three months before that she had had pain in the right hypochondrium, extending to the back. This pain had increased in severity before she entered the hospital. At the same time she had had bright red blood in the urine for seven days. There had been increased frequency of urination. No jaundice or vomiting. Slight rigidity and resistance on the right side of the abdomen. Some tenderness in the right hypochondriac region. The urine was repeatedly examined for tubercle bacilli, with negative results. Filariasis was not suspected at this time, and she was examined thoroughly for stone or tuberculosis. When she again entered the Presbyterian Hospital she was on the medical side, under Dr. Tuttle. She gave a history of a return of pain on the right side last December. Last month the patient had a return of the old

trouble, but it was not so severe. The urine was red at times, and urination was more frequent. No pain on voiding it. The pain in the right hypochondrium and lumbar region was not so severe as formerly. Constipation, nausea, and vomiting. Temperature normal. One week after admission filariæ were found in the urine and in the blood. Ureteral catheterism showed blood coming from the left ureter. Blood examination showed hæmoglobin, 70 per cent.; red cells, 4,336,000; white cells, 11,000. Chemical and microscopical examinations of the two urines were the same except for the presence of blood in one. There was about half as much again urine coming from the left side as from the other. It was common when a kidney was subjected to some form of irritation, as in stone or tuberculosis, to have an increased secretion of urine from the diseased side. Dr. Brown desired information as to the probable cause of the bleeding. It occurred most certainly from the kidney, as the ureteral catheter was slowly introduced, and at each level during its introduction the same kind of bloody urine issued.

Dr. BREWER asked if there was any œdema of the groins. He did not think there was any treatment for the condition.

The CHAIRMAN said that the cystoscope enabled Dr. Brown to determine the point of the bleeding, which could not have been done otherwise, as the pain was over the other kidney. That showed the tremendous value of the cystoscope.

Dr. BROWN said that if the hæmaturia continued much longer and to the same extent, an exploration of the kidney would be justifiable, with the reasonable expectation that a dilated lymphatic might be appreciated where the parent worm or worms lay, or some thickening might be appreciated which might be removed, with relief of the symptoms. It was noted that examinations at the same time showed more of the embryos in the urine than in the blood, which was in keeping with the theory that the larger central vessels, arterial, venous, and lymphatic, were much more densely inhabited than the peripheral ones.

Hæmorrhagic Nephritis.—Dr. JOSEPH WIENER reported two cases. The first was that of a woman, thirty-eight years old. Uterus removed fifteen years ago. Present illness began eight years ago, with severe pain in the left kidney, vomiting, and fever. Patient grew progressively worse. Five months ago the urine was bloody for the first time. Had gained in weight, though appetite was poor. Pain was increased by exertion and diminished by rest in bed. There was tenderness in both hypochondriac regions. The kidneys were not palpable. Gave a positive general reaction to tuberculin. X ray examination of the kidneys, ureters, and bladder was negative. Cystoscopy showed the mouth of the left ureter to be normal. Exploratory nephrotomy was done on the left side, which showed the kidney to be very friable. The renal pelvis was normal. A piece of kidney tissue was removed for examination. The pathologist reported an acute inflammation. Patient recovered and left the hospital, and daily examinations of the urine afterward failed to show any blood.

The second case was that of a man, twenty-nine years old, Russian by birth. Had typhoid twelve years ago. At that time had pain in the left kidney and hæmaturia. Ten days before admission had moderate pain above the crest of the left ilium. Hæmaturia began one week before admission. There was no pain when lying still, but pain was present when moving about. The urine was acid, sp. gr., 1.024, albumin was present, and there were many white and red blood cells. Cystoscopy was unsatisfactory, but blood could be seen spurting from the mouth of the left ureter. X ray examination was negative. Nephrotomy on the left side showed the kidney to be very soft. There was no stone felt. Examination of a piece of kidney tissue removed showed an acute exudative nephritis, with casts in the tubules. The patient recovered, and had had no recurrence of the pain and hæmaturia.

Dr. BROWN spoke of the use of the x ray in tuberculosis of the kidneys. He had seen well marked shadows given by tuberculous kidneys. In one case where the x ray showed a shadow that suggested stones, operation showed a tuberculous destruction of the interior of the kidney, which was filled by a putty-like substance. He also mentioned a case where a stone had been seen and subsequently removed from the lower end of the ureter, and where the x ray had failed to show the stone.

Dr. WIENER had had a somewhat similar case five years ago, in which there were repeated attacks of pain in the left kidney, with casts and blood. Nephrotomy was performed, and the hæmaturia stopped, the casts disappeared from the urine, and the whole case cleared up. Could not say whether the patient was permanently cured or not. Recently the x ray pictures had been very satisfactory in the diagnosis of stone. He always had two pictures made, with two days between the exposures. It was important to have the bowels thoroughly empty.

The Luys Urine Separator.—Dr. BENJAMIN S. BARRINGER read a paper with this title. He traced the history of urine separators, which dated from 1890, mentioning those of Lambotte, Neumann, Harris, Cathelan, and Luys. The literature of the subject was reviewed, the largest number of cases published being a series of 210 cases by Luys himself. There were no articles by American writers. He said the opinions against the separator were as a rule too general in character, and were apt to include all separators as a class; and writers on the subject too often confined their articles to criticising the results of other workers. He described the construction of the Luys separator and the technique of separation. Fourteen cases in which he had used the separator were reported in detail. The separator could not be used when the bladder capacity was less than twenty c.c.; where the urethra was not penetrable to the instrument; or where the neck of the bladder was distorted by marked prostatic hypertrophy, extreme anteversion or anteflexion of the uterus, certain uterine tumors, or marked cystocele. There were cases where the vigorous muscular grip of the bladder upon the separator caused injury of the vesical mucous membrane and resultant slight hæmorrhage. Any inaccuracy of results obtained by the separator was to be attributed either to its employment in unsuitable cases or to a failure to recognize traumatic hæmorrhage when it occurred, and did not arise from leakage of urine from one side to the other. There was a large class of cases where knowledge of the condition of the kidneys was necessary, and in which the ureters could not be catheterized. These were cases in which one or both ureteral openings were obscured by cystitis, where the rapid excretion of pus or blood into the bladder clouded the bladder fluid, or where in a normal bladder one or both ureteral mouths could not be found. In such cases the separator was invaluable. Cystitis formed no barrier to its use, or to obtaining exact knowledge of the kidney conditions in such cases. The exception to this was where a bacteriological examination was necessary, when catheterism of the ureters was more exact. With women the pain or discomfort caused by the separator was about the same as that caused by the use of a simple examining cystoscope. With men the pain of separation was slightly more than this. Separation was much simpler than ureteral catheterism. The sterilization of the instrument was abso-

lute, as the separator could be boiled. Infection of the ureters from the bladder was excluded.

Dr. Brown asked if the cystoscope was used in conjunction with the separator to corroborate the findings of the latter. It seemed to him it was absolutely necessary to use the cystoscope also, and it would be a waste of time to use both, and as good results could not be obtained as by using the catheterizing cystoscope. A great many men would use the separator alone who could not use the cystoscope, and in that way serious errors might be made. He did not think that segregation in combination with cystoscopy would ever be proved to be as efficient as ureteral catheterism.

Dr. Wiener thought the Luys separator superior to the Harris instrument, which he had tried for a while and given up. He did not think we should antagonize these instruments. They had a distinct field of usefulness. There were objections to them, just as to the ureteral catheter. The objection of hæmorrhage applied as well to ureteral catheterism.

The Chairman thought that the separator should be used in certain cases in conjunction with the cystoscope. His experience with the Harris instrument had been very disappointing, as the pathological elements in the urine in one important case proved to be from the bladder and not the kidneys. In certain cases there was danger of carrying infection from the bladder into the ureter and kidney with the ureteral catheter, but that accident was very rare in careful hands. The ureteral catheter also had a distinct therapeutic value in affording a means of lavage of the renal pelvis and ureter and in the treatment of stricture of the ureter. He, therefore, thought that, while there was a place for the separator, yet its field of usefulness was rather limited, when compared with the modern cystoscope.

Dr. Barringer said that it was always his practice to make a cystoscopic examination of the bladder prior to the use of the separator. He believed, as Dr. Brown had emphasized, that any of these instruments in the hands of the unskilled were dangerous. He thought, however, that men might use the separator who would otherwise go ahead and operate without any attempt to determine the condition of the separate kidneys. He thought the personal equation had more influence in ureteral catheterization than in separation. It was not his intention to undervalue the ureteral catheter, but to emphasize the value of the separator.

A New Combined Observation and Catheterizing Cystoscope.—Dr. F. Tilden Brown presented a modification of his catheterizing cystoscope. The sheath was round instead of elliptical, as in the older instrument, and the telescope was somewhat shorter. The lamp, instead of being on the end of the beak, was protected by a metallic hood, with two windows, one in front and one behind. The lamp itself was inverted, pointing toward the angle of the instrument. This arrangement gave better illumination, and permitted of a shorter telescope, which in the new instrument was flush with the end of the sheath. The catheters lay in grooves in the telescopic piece. On the anterior surface of the sheath, just above the angle, there was a window, and a prismatic telescope was provided for indirect observation work.

Dr. Ware said he had found in using the older instrument that in turning the inner end of the cystoscope to the ureteral mouth it would sometimes bend the instrument sufficiently to cause a shadow in the field, and he asked whether that objection had been overcome in the new instrument.

The Chairman spoke of the desirability of having a vesical speculum through which the bladder could be inspected, applications made to the bladder mucous membrane, and possibly through which the ureters could be catheterized, as in the case of the female. He did not think the sheath of Dr. Brown's instrument, as now arranged, could be used for that purpose. He had had such an instrument made, and through this he had been able to make local applications to diseased areas in the bladder, catheterize the ureters, remove growths and small stones, treat ulcers, etc. He was convinced that we were coming to an open tube method of treating certain bladder diseases in the male, as had been done for some time in the female.

Recently by the use of a forceps devised by himself he had been able to break a small stone in the bladder of a man. This was subsequently passed by the patient, who made a good recovery. This forceps was used in connection with the special telescope devised by himself for minor operative work on the bladder.

Devices for Examinations.—Dr. Brown presented a folding board, for use in examinations and operations in private houses. It consisted of two boards, each seven and a half inches wide and thirty-two inches long, fastened together at their sides with hinges. There were hinges at the end for fastening the board to any of the ordinary domestic tables. With the aid of this board the patient could be placed in any degree of the Trendelenburg posture. He also presented a short folding board, which was particularly useful in kidney operations for elevating the lumbar region. The board was provided with a crank arrangement by which the patient's loins could be raised or lowered at will. He also presented a modification of Clover's crutch and improved leg rests for use in cystoscopic examinations.

A New Ether Inhaler.—Dr. Pedersen presented a new type of bag inhaler. It was so constructed that much less obstruction was offered to respiration, and it required much less labor in breathing than any of the other inhalers on the market. This was accomplished by having a passage through the ether chamber as large as the human trachea, and around this passage was the ether soaked gauze exposed in two windows when the ether was turned on. It took two or three minutes longer to produce anæsthesia with this inhaler, but there were fewer bad after effects, less irritation, and less refrigeration. An inspiratory valve under control of the anæsthetizer allowed the patient during inspiration to obtain fresh air charged with fresh ether and, from the bag, warmed ether fumes to prevent refrigeration. Most patients breathed very quietly with this inhaler, as though under chloroform.

Book Notices.

The Practitioner's Visiting List, 1907. Philadelphia and New York: Lea Brothers & Co.

This convenient pocket book for memoranda and brief notes of professional work includes a number of pages of printed matter well calculated to be of aid in cases of emergency.

The Influence of the Mind on the Body. By Dr. Paul Dubois, Professor in the University of Berne and Author of *The Psychic Treatment of Nervous Diseases.* Translated by L. B. Gallatin. New York: Funk & Wagnalls Company, 1906. Pp. 63.

Anyone who finds Dr. Dubois's substantial volume on *The Psychic Treatment of Nervous Disorders* too lengthy or too philosophical for perusal will still be able to discover by reading this little book some of the fundamental principles on which his work is based, some of the methods which he employs, and some of the results which he achieves. Certain of these results seem to partake of the miraculous when they are stated without comment or explanation, but after Dr. Dubois

has shown how logical they are they become positively inspiring. Almost everyone is hearing more or less about the influence of the mind on the body at the present time, and one cannot too strongly affirm that Dr. Dubois's sane and hopeful view of the matter should find its way into the hands and lives of all who are in the least interested in such topics. How far he is from the negation of the Christian Scientists is shown by his statement: "There are no imaginary sick people; they all suffer and are worthy of our compassion." On the other hand, how tonic and hopeful is his philosophy is made evident by other passages in the book. For instance, he says: "The influence of the physical over the moral is generally exaggerated, and biological science, not well understood or well interpreted, has encouraged a crude and gross materialism which can never avail in regulating life . . . as the body suffers in the rebound of the various conditions of the spirit we shall, without repeal, assure our physical health by the education of our reason."

Die Technik der speziellen Therapie. Ein Handbuch für die Praxis von Professor F. Gumprecht, Med.-Rat in Weimar, Dozent an der jenaer Universität. Mit 205 Abbildungen im Text. Vierte umgearbeitete Auflage. Jena: Gustav Fischer, 1906. Pp. 412.

The selection of material is difficult in a work of this character, which endeavors to make available for the general practitioner many of the technical methods of the specialist. The author has wisely omitted all consideration of gynæcology, the eye and ear, and orthopædics, and has touched very lightly upon the nervous system. Within these limits there are given many useful suggestions and practical details of treatment, the successful application of which usually depends more upon thorough training in the clinic and at the bedside than upon textbook instruction, however excellent it may be. The sections dealing with the stomach and intestinal tract, the chest, the nose and throat, and the genitourinary organs, are especially good, and there is also a well written chapter on anæsthetics. In the more narrowly defined specialties the author has been less successful, notably in his treatment of the œsophagus, wherein œsophagoscopy is not even mentioned. A few of the therapeutical procedures described at length are of doubtful utility, and have practically become obsolete. Such are transfusion of blood and suspension for organic disease of the spinal cord. The author in his directions and descritpions of apparatus seems to sanction self lavage of the stomach. It is at least questionable whether it is ever safe or prudent for the patient to be permitted to wash out his own stomach. These, however, are but minor subjects for criticism in a work in which there is much to admire, and which has proved its value by reaching a fourth edition within eight years.

The Proceedings of the Charaka Club. Volume II. New York: William Wood & Co.

When a book embodies the intellectual diversions of a group of men of wide culture, deep learning, and trained intelligence, then, in the words of him to whom one of their number has been not inaptly compared, "something admirable is apt to result." Such a book is this volume, and the reader puts it down with a new appreciation of the wisdom of its authors and of their versatility as well.

The poem which graces its opening pages is from the hand of Dr. Weir Mitchell, and exhibits all his characteristic vitality and sympathy. Dr. Osler, to whom the poem is a tribute, follows with an account of another physician who was also a poet, though possibly an inferior one, Fracastorius. Dr. Jelliffe gathers from the mists all that is definitely known of Charaka, the patron genius of the club, and Dr. Bailey, in Dr. Craske's Prognosis, adapts to the purposes of fiction one of the countless ethical and psychological problems that continually confront the physician. Dr. Holden has delved among the legends of the church for the story of Saint Lucia and her eyes, supplementing it with a grim little tale of a modern insane criminal. Dr. Billings has contributed a collection of legends and traditions connected with the curious superstition of "the king's touch," and Dr. Dana, in a paper on The Medicine of Horace, combines his own charming style with that of the Roman poet. Poetry at first hand again appears in Dr. Frederick Peterson's Prophecy of Evolution, The Quest, and The Years That Bring the Philosophic Mind, and humor has its share in Dr. Shrady's Professional Reminiscences, in which he irresistibly reveals the true inwardness of many amusing situations which, at the time of their occurrence, prudence discreetly left unexplained. Dr. James gives an interesting account of Ramazzini, "the father of modern sanitary science," with quaint quotations from his works, especially his chapter on The Diseases of Learned Men, and Dr. Gerster adds a sketch of the founder of scientific surgery in Germany, Lawrence Heister. The volume closes with a brief account of the farewell dinner given by the club to Dr. Osler on his departure for Oxford.

BOOKS, PAMPHLETS, ETC., RECEIVED.

Stohr's Histology. Arranged upon an Embryological Basis. By Frederic T. Lewis, Assistant Professor of Embryology at the Harvard Medical School. From the Twelfth German Edition. By Philipp Stohr, Professor of Anatomy at the University of Würzburg. Sixth American Edition. Philadelphia: P. Blakiston's Son & Co., 1906.

Traité des maladies du nez. Par le Docteur A. Ménier, ex-interne des Hôpitaux de Paris, etc. Introduction de M. le professeur S. Duplay. Préface de M. le Docteur A. Castex. Paris: A. Maloine, 1906.

Conferences on the Moral Philosophy of Medicine. Prepared by an American Physician. New York: Rebman Company, 1906.

Verhandlungen der deutschen Röntgen-Gesellschaft. Band II. Verhandlungen und Berichte des zweiten Kongresses, am 1. und 2, April, 1906, in Berlin. Herausgegeben vom Ausschuss. Redigiert von Dr. Albers-Schönberg, Hamburg. Hamburg: Lucas, Gräfe & Sillem, 1906.

Handbuch der Urologie. Herausgegeben von Dr. Anton v. Frisch, und Dr. Otto Zuckerkandl. Band III. Abteilung XII-XVIII. Wien: Alfred Holder, 1905-1906.

Transactions of the Second International Sanitary Convention of the American Republics.

Jahresbericht über die Leistungen und Fortschritte auf dem Gebiete der Erkrankungen des Urogenitalapparates Redigiert von Prof. Dr. M. Nitze, Dr. S. Jacoby, und Prof. Dr. A. Kollmann. I. Jahrgang. Bericht über das Jahr 1905. Berlin: S. Karger, 1906.

A Compend of Genitourinary Diseases and Syphilis. Including Their Surgery and Treatment. By Charles S. Hirsch, M. D. Philadelphia: P. Blakiston's Son & Co., 1905.

Gesammelte Beiträge aus dem Gebiete der Physiologie, Pathologie und Therapie der Verdauung. Von Dr. I. Boas und seinen Schülern, 1886-1906. Zwei Bände. Berlin: S Karger, 1906.

Textbook on Diseases of the Heart. By Graham Steell, M. D., F. R. C. P. With an Appendix on the Volume of Blood in Relation to Heart Disease, by J. Lorrain Smith, M. A., M. D. Philadelphia: P. Blakiston's Son & Co., 1906

Medizinische Anwendungen der Elektrizität. Von Dr. S. Jellinek. München und Berlin: R. Oldenburg, 1906.

The Pathology of the Eye. By J. Herbert Parsons, B. S., D. Sc, F. R. C. S. Volume III. General Pathology, Part I. New York: G. P. Putnam's Sons, 1906.

Operationen am Ohr. Die Operationen bei Mittelohreiterungen und ihren intrakraniellen Komplikationen. Für Aerzte und Studierende von Dr. B. Heine, a. o. Professor der Universität und Direktor der Universitäts-Ohren-Poliklinik zu Königsberg i/Pr. Berlin: S. Karger, 1906.

Polypus of the Nose. By Eugene S. Yonge, M. D., Honorary Assistant Physician, Manchester Hospital for Consumption and Diseases of the Throat. London and Manchester: Sherratt & Hughes, 1906.

Miscellany.

The Death of Dr. William K. Otis.—At a meeting of the Medical Association of the Greater City of New York, held November 19, 1906, the following resolutions were presented and adopted:

Whereas, It has pleased Almighty God to remove from our midst our colleague, Dr. William K. Otis; therefore it is

Resolved, That we express our sincere sorrow at the loss we have sustained; that we are duly conscious of his high personal character and his genial and attractive personality, and that we are proud of his advanced position in medicine and of his well earned fame as a specialist in genitourinary surgery.

Resolved, That we extend the heartfelt sympathy of the society to the family of the deceased, and that these resolutions, expressive of grief and condolence, shall be transmitted to the local medical journals, to wit, the *New York Medical Journal* and the *Medical Record,* with the request that they be published in their columns.

Resolved, That a copy of these resolutions be sent to the family of the deceased.

(Signed) ROBERT W. TAYLOR, RAMON GUITERAS, ROBERT HOLMES GREENE. } Committee.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending December 7, 1906:

Places.	Date.	Cases.	Deaths.
Smallpox—United States.			
Colorado—Las Animas County	Oct. 1-31	3	2
Georgia—Augusta	Nov. 20-26	8	
Illinois—Galesburg	Nov. 18-24	17	
Indiana—South Bend	Nov. 18-24	4	
Kansas—Seven counties	Oct. 1-31	23	
Louisiana—New Orleans	Nov. 18-24	3	
Louisiana—Shreveport	Nov. 18-24	1	
Missouri—St. Louis	Nov. 18-24	3	
New York—New York	Nov. 18-24	1	
North Carolina—Greensboro	Nov. 18-24	5	
Ohio—Cincinnati	Nov. 24-30	1	
Virginia—Richmond	Oct. 1-31	1	
Smallpox—Foreign.			
Africa—Cape Colony	Oct. 14-22	15	
Brazil—Rio de Janeiro	Oct. 22-24	5	
Chile—Coquimbo	Oct. 22-21	28	1
Chile—Iquique	Oct. 29-Nov. 4		Present
Ecuador—Guayaquil	Oct. 24-31	14	
France—Paris	Oct. 28-Nov. 17	7	1
Gibraltar	Nov. 12-18	1	
Greece—Athens	Nov. 9-15		2
India—Calcutta	Oct. 21-27		3
India—Madras	Oct. 27-Nov. 2		2
Russia—Moscow	Oct. 28-Nov. 3	1	1
Russia—Odessa	Nov. 4-10	4	
Spain—San Feliu de Quixols	Oct. 11-17		1
Spain—Seville	Oct. 1-31		28
Turkey—Beirut	Nov. 6-10		
Yellow Fever—Foreign.			
Brazil—Rio de Janeiro	Oct. 28-Nov. 4	1	1
Ecuador—Guayaquil	Oct. 15-30		4
Cuba—Habana	Nov. 28-Dec. 4	5	
Cuba—Mantanzas Province			
Cuba—Jovellanos	Dec. 3	1	
Cuba—Union de Reyes	Nov. 26-29	3	1
Cuba—Santa Clara Province			
Cuba—Isabella de Sagua	Nov. 29	1	
Cholera—Foreign.			
India—Bombay	Nov. 1-6		1
India—Calcutta	Oct. 20-28		28
India—Karachi	Oct. 20-26		4
India—Madras	Oct. 27-Nov. 2		1
India—Rangoon	Oct. 21-27		3
India—Negapstam	Sept. 22-Oct. 19		19
Plague—Foreign.			
Australia—Cairns	Oct. 21-27	3	
Australia—Sydney	Sept. 25-Oct. 1	1	
Brazil—Rio de Janeiro	Oct. 28-Nov. 4	34	10
Egypt—Alexandria	Oct. 30-Nov. 3	1	1
Egypt—Minich Province	Oct. 30-Nov. 3		
Egypt—Suez	Oct. 30-Nov. 5	1	1
India—General	Oct. 14-20	7,876	6,216
India—Calcutta	Oct. 14-20		7
Japan—Fukuoka	Nov. 3	2	
Japan—Iida	Nov. 3		Present
Japan—Osaka	Oct. 2-Nov. 6	4	3
Japan—Waykama Ken	Oct. 10-Nov. 6	24	17
Straits Settlements	Sept. 4-10	1	
Turkey—Beirut	Nov. 6-10	1	

Public Health and Marine Hospital Service:

List of Changes of Station and Duties of Commissioned and Noncommissioned Officers of the Public Health and Marine Hospital Service, for the seven days ending December 5, 1906:

ALLEN, G. C., Pharmacist. Leave of absence granted Pharmacist Allen for two months, without pay, from September 28th, amended so that said leave shall terminate November 15, 1906.

BARNES, W., Acting Assistant Surgeon. Granted leave of absence for twenty-one days, beginning December 10, 1906.

CLARK, E. S., Acting Assistant Surgeon. Granted leave of absence for two days, from November 21, 1906.

ELDREDGE, MERRITT B., Pharmacist. Directed to proceed to Vineyard Haven, Mass., reporting to the Medical Officer in Command for duty and assignment to quarters.

GOODMAN, F. S., Pharmacist. Relieved from duty at Norfolk, Va., and directed to report to the Medical Officer in Command of Cape Charles Quarantine Station, for duty and assignment to quarters.

GRIBBLE, B. G., Acting Assistant Surgeon. Granted leave of absence for seven days, under Paragraph 210 of the Regulations, from November 26, 1906.

GRUBBS, S. B., Passed Assistant Surgeon. Granted one day extension of leave of absence, December 3, 1906.

GUTHRIE, M. C., Assistant Surgeon. Temporarily relieved from duty at Ellis Island, N. Y., and directed to proceed to Washington, D. C., for temporary duty at the Government Hospital for the Insane.

HALL, L. P., Pharmacist. Leave of absence for seven days from November 21, 1906, amended to read for five days only.

MCCLINTIC, T. B., Passed Assistant Surgeon. Relieved from temporary duty on Revenue Cutter *McCulloch,* and from duty at the San Francisco Quarantine Station, and directed to proceed to Manila, P. I., reporting to the Chief Quarantine Officer for duty.

MCCOY, GEORGE W., Passed Assistant Surgeon. Leave of absence for two months, beginning October 4, 1906, amended so as to read for one month and twenty-three days only.

PARKER, H. B., Passed Assistant Surgeon. Granted leave of absence for twelve days, from November 17, 1906, on account of sickness.

PETTYJOHN, JOSEPH, Assistant Surgeon. Relieved from temporary duty on the Revenue Cutter *Thetis,* and from duty at San Francisco, Cal., and directed to proceed to Manilla, P. I., reporting to the Chief Quarantine Officer for duty.

ROSENAU, M. J., Passed Assistant Surgeon. Detailed to represent the Service at the meeting of the Society of American Bacteriologists, to be held in New York city, December 27-28, 1906.

SCOTT, E. B., Pharmacist. Relieved from duty at Baltimore, Md., and directed to proceed to Norfolk, Va., reporting to the Medical Officer in Command, for assignment to duty.

SMITH, A. C., Surgeon. Granted leave of absence for three days, beginning December 2nd.

STEGER, E. M., Assistant Surgeon. Granted leave of absense for three days, from November 24th, on account of sickness.

STIER, CARL, Pharmacist. Granted leave of absence for twenty-seven days, beginning December 5, 1906.

WILLIE, C. W., Passed Assistant Surgeon. Granted leave of absence for two months, beginning December 9, 1906.

Appointments.

Mr. Merritt B. Eldredge was appointed a pharmacist of the Third Class, effective from date of oath.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, for the week ending December 8, 1906:

DUNCAN, WILLIAM A., First Lieutenant and Assistant Surgeon. Reported for duty as surgeon on the transport *Thomas,* at San Francisco, Cal.

EASTMAN, WILLIAM R., First Lieutenant and Assistant Surgeon. Granted leave of absence for one month.

FIFE, JAMES D., First Lieutenant and Assistant Surgeon.

Left Fort Slocum, N. Y., *en route* to Jefferson Barracks, Mo., on detached duty.

Ford, Clyde S., Captain and Assistant Surgeon. Relieved from duty at the Medical Supply Depot, New York, N. Y., and ordered to report to the Military Secretary of the Army for instructions in the matter of personal identification record, and upon completion of this duty to proceed to the Philippine Islands for duty.

Harvey, Philip F., Colonel and Assistant Surgeon General. Granted leave of absence for one month, to take effect on December 10th, with permission to apply for an extension of one month. During the absence of Colonel Harvey, Major Charles Richard, surgeon, will, in addition to his other duties, take charge of the office of the chief surgeon and perform the duties of that office.

Lewis, William A., Captain and Assistant Surgeon. Assignment to station at Fort Snelling, Minn., revoked; relieved from temporary duty at Fort Monroe, Va., and ordered to the Army General Hospital, Presidio of San Francsico, Cal., for duty.

Manly, C. J., Captain and Assistant Surgeon. Assigned to temporary duty at Fort Myer, Va., until December 13th, when he will proceed to Cuba, for duty in compliance with orders heretofore issued.

Marrow, Charles E., Captain and Assistant Surgeon. Granted leave of absence for one month, with permission to apply for an extension of one month; effective upon arrival in the United States.

Moncreif, William H., Captain and Assistant Surgeon. Advanced to the rank of captain, from November 30, 1906.

Murray, Alexander, First Lieutenant and Assistant Surgeon. Relieved from duty at Fort Bayard, N. M., and ordered to report in person to the chairman of the Isthmian Canal Commission, Washington, D. C., for duty with the commission on the Isthmus of Panama.

Rutherford, H. H., Captain and Assistant Surgeon. Ordered to proceed from the Army General Hospital, Presidio of San Francisco, Cal., to Washington, D. C., in charge of insane patients.

Steer, Samuel L., Captain and Assistant Surgeon. Assigned to temporary duty at Fort Monroe, Va., pending sailing of transport to Cuba.

Whitmore, E. R., First Lieutenant and Assistant Surgeon. Ordered to proceed from Fort Jay to Fort Slocum, N. Y., for temporary duty.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending December 8, 1906:

Alfred, A. R., Surgeon. Detached from the Naval Station, Cavite, P. I., and ordered home to await orders.

Biddle, C., Surgeon. Detached from the *Chicago*, and ordered to the Naval Training Station, San Francisco, Cal.

Bishop, W. L., Passed Assistant Surgeon. Detached from the *Dubuque* and ordered to the *Iowa*.

Carpenter, D. N., Surgeon. Detached from the *Raleigh* and ordered to the Naval Station, Cavite, P. I.

Dessez, P. T., Assistant Surgeon. Detached from Washington Barracks, and ordered to Naval Hospital, Chelsea, Mass.

Furlong, F. M., Surgeon. Detached from the Bureau of Medicine and Surgery and ordered to the Naval Hospital, Chelsea, Mass.

Gardner, James E., Medical Inspector. Ordered to the *Charleston*, as Fleet Surgeon of the Pacific Squadron.

Gates, M. F., Surgeon. Detached from the *Charleston*, upon reporting for relief, and ordered to the *Chicago*.

Gill, J. E., Passed Assistant Surgeon. Detached from Washington Navy Yard and ordered to the *Dubuque*.

Gordon, F. T., Pharmacist. Placed on the retired list of officers of the navy yard, November 30, 1906, detached from the Bureau of Medicine and Surgery, and ordered home.

Grove, W. B., Surgeon. Detached from the *Iowa* and ordered to the *Minnesota*.

Grow, E. J., Surgeon. Detached from the *Ohio* and ordered home to await orders.

Heiner, R. G., Assistant Surgeon. Detached from the *Scorpion* and ordered to the Washington Yard.

Higgins, S. L., Assistant Surgeon. Ordered to the Naval Hospital, Norfolk, Va.

Oman, C. M., Passed Assistant Surgeon. Detached from Norfolk Hospital and ordered to the *Ohio*.

Smith, W. B., Passed Assistant Surgeon. Detached from the Naval Training Station, San Francisco, Cal., and ordered to the *Raleigh*.

Johnson, M. K., Surgeon. Ordered to the Naval Hospital, Norfolk, Va.

Births, Marriages, and Deaths.

Born.

Guthrie.—In Bordentown, N. J., on Sunday, December 2nd, to Dr. J. A. Guthrie, United States Navy, and Mrs. Guthrie, a daughter.

Married.

Cortright—Stewart.—In Plainfield, N. J., on Saturday, December 1st, Dr. Charles Bartles Cortright and Miss Elsie N. Stewart.

Furman—Thayer.—In Fairport, N. Y., on Saturday, December 1st, Dr. I. J. Furman and Miss Celia B. Thayer.

Pratt—Cornell.—In Elmira, N. Y., on Monday, November 26th, Dr. Ray B. Pratt and Miss Florence Cornell.

Raiford—Burgess.—In Richmond, Virginia, on Wednesday, November 28th, Dr. Rufus L. Raiford and Miss Lora Burgess.

Smith—Martin.—In Washington, D. C., on Saturday, November 24th, Dr. William Hamilton Smith, of Baltimore, and Miss Katharine P. Martin.

Stirk—Ivins.—In Philadelphia, on Wednesday, November 28th, Dr. James Caffrey Stirk and Mrs. Elizabeth Wood Ivins

Stratford—Ray.—In Chicago, on Wednesday, November 21st, Dr. William Henry Stratford, of Lakewood, N. J., and Miss Marguerite Ray.

Died.

Arnold.—In New York, on Thursday, November 29th, Glover Crane Arnold, aged fifty-seven years.

Baylor.—In Pittsford, Vermont, on Sunday, December 2nd, Dr. John Galt Baylor.

Bowmanville.—In Philadelphia, on Monday, December 3rd, Dr. Augustus C. Bowmanville, aged eighty years.

Gustine.—In Kenner, Louisiana, on Saturday, November 24th, Dr. Stephen Duncan Gustine, aged thirty years.

Hoffman.—In Lebanon, Pennsylvania, on Tuesday, November 27th, Dr. Charles I. Hoffman.

Hull.—In Bristol, Connecticut, on Tuesday, December 4th, Dr. George S. Hull, aged seventy-four years.

Jones.—In Mount Vernon, N. Y., on Monday, December 3rd, Dr. Henry C. Jones, aged seventy-three years.

Lee.—In Richmond, Virginia, on Thursday, November 29th, Dr. W. A. Lee, aged sixty years.

Marion.—In Allston, Massachusetts, on Tuesday, November 27th, Dr. Otis H. Marion, aged fifty-nine years.

McDonough.—In New York, on Friday, November 30th, Dr. Edward J. McDonough, aged forty-four years.

Oleson.—In Lombard, Illinois, on Sunday, December 2nd, Dr. Charles Wilmot Oleson, aged sixty-six years.

Parke.—In Quebec, Canada, on Wednesday, November 28th, Dr. Charles Parke, aged sixty-three years.

Sherrom.—In Mexico City, Mexico, on Wednesday, December 5th, Dr. L. L. Sherrom, aged forty-five years.

Smith.—In Manayunk, Pennsylvania, on Friday, November 30th, Dr. John Greer Smith, aged thirty-two years.

Spottiswoode.—In Hollis, Virginia, on Friday, November 9th, Betty, daughter of Dr. J. Spottiswoode and Mrs. Spottiswoode.

Trent.—In Brooklyn, N. Y., on Tuesday, December 4th, Dr. John Henry Trent, aged sixty years.

Wade.—In St. Francisville, Louisiana, on Saturday, November 24th, Dr. Joseph J. Wade, aged seventy-three years.

Watts.—In Washington, D. C., on Wednesday, November 28th, Dr. Samuel R. Watts, aged sixty years.

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Original Communications.

PARALYSIS OF THE PERONEAL NERVE FOLLOWING CHILDBIRTH.*

BY JAMES HENDRIE LLOYD, M. D.,
Philadelphia.

Among the important causes of injuries to the large nerve trunks in the pelvis is childbirth. The subject is not new, although it is generally too much ignored by obstetricians. Among the older writers who have discussed the subject are Charpentier (1) and Churchill (2); Romberg (3) also recognized that paralysis could accompany certain diseases of the generative organs, and that it could be caused by direct pressure within the pelvis (4).

Veterinarians have not infrequently observed paraplegia as a complication of metritis in the lower animals. Gellé reported cases of metritis in cows after calving, and said that in all his cases there existed a paralysis of the posterior limbs. Swell published an account of an autopsy in the case of a cow afflicted with paraplegia after calving. Ithen made known many cases of metritis in the mare after foaling, with loss of power in the hind legs. In women similar cases are reported. Imbert-Gourbeyre gives three cases in which paralysis seems to have been due to pressure by the head on the sacral plexus or sciatic nerve. He admits two classes of causes, the traumatic cases and cases caused by inflammation. Other writers could be mentioned who refer to this subject, but who shed no particular light on it.

Winckel discusses the subject more fully than most obstetricians. Injurious pressure, he says, may be caused by a large head in an unfavorable presentation in a small pelvis; also, pressure may be made by the blades of the forceps, causing severe contusion of the sacral plexus on forced closure as well as during extraction. He recognizes as a cause pelvic exudations which may involve the sheaths of the nerves. He thinks that the affection is usually located in the external and middle cutaneous, the obturator, and the sciatic nerves. Finally, injury of the vagina with subsequent cicatricial contraction may cause traction and pressure upon nerve trunks (5). Hervieux (6), before Winckel, had a scientific conception of these cases, recognizing sepsis and pelvic cellulitis as causes of paralysis. Mills (7) wrote a valuable paper on puerperal paralyses, in which he gave clear indications for the systematic clinical study of these cases. In the discussion of Mills's paper at the College of Physicians, Hirst said that those paralyses are very rare. In a large experience in contracted pelves, difficult labors, head impaction, and forceps deliveries, he had seen but one case of paralysis of the limbs. He did not subscribe to the view that the paralysis is caused by direct pressure. He asserted that the nerves are protected by their situation from such injury. The pelvis has a cordiforn entrance, and the nerves are hidden within the bag so that, according to Hirst, no mechanical pressure is possible. Such an accident might happen, however, in a rare case in which the pelvis is elliptical; on the other hand, he believed that nerve involvement may occur from inflammation. Norris (8) points out that the flat rachitic pelvis, offering larger oblique diameters, is not so prone to these accidents as a generally contracted pelvis in which all the diameters are small. Such accidents, he thinks, are also possible in bad presentations, as by the face or brow.

There are not a few cases of puerperal paralysis reported, but it is not my intention to rehearse the whole list here to-night. The causes usually assigned are either sepsis or pressure. I have already gone over the subject carefully elsewhere (in the *Twentieth Century Practice of Medicine*, xi). A few facts stand out conspicuously, as in the case reported by Romberg, in which a woman was delivered with the forceps after a difficult labor. During the labor she had painful cramps in the left leg, and later she had an impaired and weakened gait, with loss of sensibility in the left foot. She could not feel the hand when it was passed over the dorsum of the foot, nor distinguish the sole upon which it was placed. The patient dragged the foot in walking. In short, this case has the appearance of a paralysis of the peroneal nerve; and specially significant features are the difficult labor, with instrumental delivery, and the painful cramps in the leg during labor—all pointing clearly to pressure.

Jaccond is one of those who insist that pressure during labor may cause paralysis of the limbs, and that this occurs not only in complicated labor, as Hoffmann and others observe, but also after regular and natural labor, as Bruns has stated. Axenfeld calls attention to the fact that during labor the pressure of the child's head may

* Read before the Philadelphia County Medical Society, November 14, 1906.

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cause pains in the thighs, and that painful cramps in the lower limbs are due to the same cause. I suppose that most physicians who practise obstetrics have seen such painful cramps during labor.

Bianchi (9), who wrote a special monograph on this subject, regards these traumatic paraplegias as incontestable. He notes that similar symptoms may be caused by the pressure of tumors upon nerves. Bianchi based his opinion upon a study of the anatomy of the pelvis. The nerves especially exposed to pressure are the lumbosacral cord, the crural, the obturator, the sacral plexus, and the sciatic nerve. He contends, contrary to others, that the great sciatic nerve is incompletely protected from injury during labor; that it is forcibly compressed in all labors, but to a variable extent. Ordinarily, this pressure occurs only towards the termination of labor, and is shown by cramps in the calves of the legs; but that in some cases long continued pressure, or contusion by the forceps, may cause grave and enduring symptoms, including paralysis of the sciatic nerve. He thinks that the sacrovertebral angle tends to avert the pressure in the sacral excavation, and that ordinarily the inclination of the planes and axes of the pelvis directs the principal effort and the greatest pressure of the head against the anterior wall, thus protecting the nerves in the pelvis, but he evidently believes that in exceptional cases this does not avail to avoid injury, especially in cases of forceps delivery, a posterior position of the vertex, prolonged labor, or a contracted pelvis.

In casting about for an explanation that will cover all cases of puerperal paralysis, some writers have indulged in dogmatic statements. For some, everything is explained by pressure; for others, the chief cause is septic infection. I do not see that it is necessary to ignore either one or the other of these important factors. It is essential rather to study individual cases in order to determine causation, and not to take a too narrow view.

The special object of my paper this evening is to show that pressure during labor can undoubtedly cause one variety at least of puerperal palsy, and to demonstrate its mechanism. I shall therefore put aside for the present all consideration of metritis and sepsis as acting causes, not because I do not believe in them, for I do; but because they are not essential in all cases. These accidents can happen in perfectly aseptic labors, and even in normal labors, although they are doubtless promoted by pelvic deformity.

The form of palsy to which I refer is that of the peroneal or external popliteal nerve. As the subject can best be understood by the study of an actual case, I will briefly give the clinical history of a patient whom I saw recently in the Philadelphia Hospital:

Case.—A. U., aged twenty-three; white; primipara; was delivered with forceps by the attending obstetrician in the maternity ward of the Philadelphia Hospital on June 4, 1906. It is not stated whether the patient was married; and the clinical notes are rather lacking in statements as to the cause or nature of the dystocia. For instance, they do not give the position of the head. It is stated, however, that the patient was healthy up to the end of term, and that she was delivered of a healthy male child. The impression I got from a verbal report by the resident physician was that the case was not regarded as a serious one at the time of delivery, but simply one of slow or retarded labor. The pelvic measurements were taken at my request, and were given as follows: External conjugate, eighteen centimetres; true conjugate (estimated), nine centimetres; right diagonal, twenty and one half centimetres; left diagonal, twenty-one centimetres; distance between trochanters, thirty centimetres. These measurements indicate, as I understand it, a rather small pelvis, especially the estimated true conjugate of only nine centimetres.

A tear in the anterior sulcus, and one in the posterior sulcus invading the transverse perineal muscle, were repaired. The temperature and pulse remained normal, and the patient never had symptoms of septic infection.

The patient did perfectly well until the ninth day, when she complained of numbness and tingling in the left leg. This had been present since the birth of the child, but she had not called attention to it. On examination she was found to have foot drop, and there was anæsthesia over the dorsum of the foot and the antero-external part of the leg over the peroneal muscles. The knee jerk was free, and there was no ankle clonus or Babinski reflex. The leg could be flexed and extended strongly on the thigh, and the thigh could be flexed and extended in a normal manner. The toes could be flexed, but not extended. The ankle could not be dorsiflexed, i. e., extended; but it could be plantar flexed properly and strongly. In other words, the paralysis was limited to the muscles supplied by the peroneal nerve and to the skin supplied by the same nerve. There was also some pain about the hip, and a subjective sense of numbness which the patient said involved the whole limb. But this was largely subjective, for the only objective anæsthesia was in the region supplied by the peroneal nerve. For some days later the patient continued to complain grievously of pain; so much so that she could not sleep; this pain was especially severe in the lower leg and in the toes, ant it was worse at night.

I first saw this patient in consultation about two weeks after the birth of her child. She was then as described in the foregoing notes. She had a typical paralysis of the muscles supplied by the left peroneal or external popliteal nerve. These muscles are the tibialis anticus, extensor longus digitorum, three peronei muscles, extensor proprius hallucis, extensor brevis digitorum, and some of the interosseous muscles. Their function, therefore, is to extend the foot and toes, and their paralysis causes a very characteristic foot drop. There was also anæsthesia over the dorsum of the foot and side of the leg. There was no involvement of the nervous system elsewhere whatever, except a sense of pain or weakness about the hip or buttock.

The musculature of both thighs was about equal. The right calf measured thirteen inches; the left, twelve and a half inches. The knee jerks were present and about equal on both sides. Achilles jerks were present on both sides. No ankle clonus on either side. Stroking the sole of either foot caused plantar flexion on that side. The patient could freely flex and extend the thighs on the abdomen and the legs on the thighs. But she could not dorsally flex (i. e., extend) the left foot on the leg. No fibrillary tremors in the affected muscles. Station was good with the eyes closed. The patient had a characteristic foot and toe drop on the left side. In walking she lifted the left foot high above the ground in order to avoid dragging the toes—the so called turkey gobbler walk, on one side. There was loss of tactile and pain sense beginning at a point about three inches below the patella, especially marked on the

outer side of the leg, and extending over the dorsum of the foot and involving the dorsal aspect of the toes. Muscular sense and the sense of position were preserved in the toes. She had had no loss of control over the sphincter of the bladder or bowel. Her mentality was good. The electrical examination gave the following results: With galvanism to the tibialis anticus, peroneal, and extensor of the toes, there was a reversed formula—An C C > K C C; also a modal change and diminished excitability. There was complete loss of faradic contractility. In other words, there was a complete reaction of degeneration.

The progress of the case was satisfactory, although somewhat slow. The patient was discharged from the hospital about seven weeks after the birth of her baby, still not entirely well; and since that time I have lost sight of her.

This type of post partum paralysis was first described accurately, so far as I know, by Hünermann; and his explanation of it is thoroughly scientific, and founded upon the anatomy of the parts (10).

At first sight it would seem strange that pressure exerted within the pelvis should act exclusively upon a nerve branch, which is distributed to a distal part of the limb, and which arises, as the peroneal nerve arises from the sciatic, at a point far removed from the point of pressure in the pelvis. The peroneal, or external popliteal, nerve is one of the two branches into which the great sciatic divides at about the lower third of the thigh. The explanation for its involvement, while the other fibres of the great sciatic escape, is made clear by reference to the anatomy of the lumbar and sacral plexuses. The sacral plexus, deep within the true pelvis, is formed from the three upper sacral nerves and part of the fourth soon after they emerge from the spinal canal in the sacrum; and in addition it receives from the lumbar plexus above a large nerve trunk, called the lumbosacral cord, which goes to help form the sacral plexus; from this latter plexus arises the great sciatic nerve. This large trunk, the lumbosacral cord, in passing from above down into the true pelvis passes over the brim of the pelvis, at a point where it may readily be compressed under some circumstances.

Now, it occurs in rare instances that the great sciatic nerve, instead of one large trunk, consists of two trunks as it passes down the back of the thigh. In other words, instead of dividing into its two main terminal branches just above the back of the knee joint, this division, as Gray says, "may take place at any point between the sacral plexus and the lower third of the thigh." Hünermann and others point out that this high division of the great sciatic nerve shows that the portion of the main nerve which goes to form the peroneal is really the lumbosacral cord; in other words, the peroneal nerve is merely a continuation of the lumbosacral cord. This assertion seems supported by the fact that some of the extensors of the foot and toes are represented in the fourth and fifth lumbar segments, from which evidently the lumbosacral cord arises. I think there can be no doubt that at least a large portion of the fibres (even if not all of them) of the peroneal nerve are derived from the lumbosacral cord. It may well be, however, that some other fibres also run through this great cord from the lumbar plexus above, and this may account for the fact that in our patient the distribution of anæsthesia seemed different and rather more extensive than in ordinary paralysis of the peroneal nerve from injury in the leg.

Another anatomical point of some significance is the fact that the superior gluteal nerve arises from the lumbosacral cord, and may be caught in one of these pressure palsies. It goes to the glutæus medius muscle, and its paralysis causes inability to rotate the thigh inwards and draw it forwards. In the present case the patient complained of a sense of weakness in the region of the hip and buttock.

I think any one who will take the trouble to take a pelvis and insert the obstetrical forceps in the proper position will readily see how possible it is for the blade of the instrument to do injury to the lumborsacral cord. I have here a pelvis in which I have marked the position of the lumbosacral cord. It passes over the brim of the true or deep pelvis, in a position most exposed to pressure, either by the head or by the forceps, and the wonder is, not that it is ever injured, but that it is not injured oftener. Doubtless the risk is greater in a small pelvis, and especially in a posterior position of the vertex.

3918 Walnut Street.

References.

1. *Paralysies puerpérales*, Paris, 1872.
2. *Dublin Quarterly Journal of Medical Science*, xvii.
3. *Diseases of the Nervous System*, ii.
4. For some of the statements and references in this paper the author is indebted to his larger contribution on this subject in the *Twentieth Century Practice*, xi, pp. 307 *et seq.*
5. *Textbook on Obstetrics*, translated by Edgar, 1890.
6. *Traité des maladies puerperales*, Paris, 1870.
7. *Transactions of the College of Physicians of Philadelphia*, 1893.
8. *American Textbook of Obstetrics*, pp. 791-792.
9. *Des paralysies traumatiques des membres inférieurs chez les nouvelles accouchées*, Paris, 1867.
10. *Archiv für Gynäkologie*, xlii, part 3, 1892.

OTOLOGY IN ITS RELATION TO THE GENERAL PRACTITIONER.*

By Gorham Bacon, M. D.,
New York,
Professor of Otology, College of Physicians and Surgeons.

Since I have been engaged in the practice of otology, great advances have been made in this specialty, and according to my observation, the general practitioner from year to year has shown a much greater interest in the symptoms and treatment of aural cases.

It is not so many years ago that the only treatment of ear diseases consisted, as a general rule, in syringing the ear with hot water, the installation of sweet oil and laudanum, and the application of the leech. The Wilde's incision was made in cases of mastoid inflammation, and the paracentesis needle was used to make a small and insufficient opening in the drumhead. The question of opening the mastoid cells was not considered unless advised by several surgeons in consultation, and even then so small an opening was made in the bone with a drill that the

* Read before the Hartford Medical Society, Hartford, Conn., October 15, 1906.

subsequent treatment was very tedious and long continued, and the patient was in great luck if the wound healed in six months' time.

No branch of surgery has shown greater progress than has otology during the past twenty-five years. During this time the complete or radical mastoid operation has taken the place of that one imperfectly performed with a small drill. The Schwartze-Stacke operation for the cure of chronic otorrhœa must not be overlooked as it is one of the greatest advances made in surgery in recent years. We must not forget the operations for brain abscess, sinus thrombosis, ligation and excision of the internal jugular vein, operations for the cure of phlebitis of the jugular bulb, and for suppuration and necrosis of the labyrinth.

With such great progress made in otology during this period, what, on the other hand, has been done to further its teaching in the medical colleges? The only instruction given in this branch, while I was a student, was one lecture which the students could or could not attend, as they saw fit, and no examination in this branch was considered necessary for a degree. What changes have taken place since then? In my department at the College of Physicians and Surgeons at the present time, the third year students are compelled to attend a weekly lecture during the first half of the year, and to pass an examination on the subjects referred to during this period. Each student during his fourth year must attend the Vanderbilt Clinic three times a week for a month's time, and at the end of this period he is (as a rule) capable of distinguishing the normal drumhead, and of making a diagnosis of the more frequent conditions found in otology. The student also has the opportunity of witnessing operations once a week at the New York Eye and Ear Infirmary during the entire year. Under such opportunities offered by the college, the graduate of to-day is well equipped for general work and should give a good account of himself in this special branch, for with the abundant material at the infirmary he has an opportunity to become familiar with every operation performed in otology, especially as each section consists of but few students. I feel that each student, if he has worked faithfully during his college course, is perfectly capable of incising the drum membrane in cases of acute purulent otitis media, and he should not hesitate for a moment to perform this slight operation whenever occasion requires, and particularly so if he happens to be in a position where a specialist cannot be called in, and the patient is suffering pain, and has a high temperature. I would not for a moment wish to convey the idea that any one can make an incision in the drumhead, for I believe that it should never be done unless the operator understands perfectly the use of the speculum and otoscope, and can reflect good light on the membrane so that he can see perfectly well what he is doing; for we all know that serious consequences may follow unskillful attempts to incise the membrane, such as meningitis from penetrating either the foramen rotundum or ovale in the posterior portion of the tympanum, or serious injury may be done to the ossicles.

The general practitioner should do well to incise the membrane in its anterior portion, for here he cannot do any harm. The usual place selected as the site of a free incision is the posterior portion close to the bony wall, and carried well up into the attic in order to drain that cavity, but as the general practitioner has not, as a rule, had much experience in such work, it is much wiser for him to make a free opening along the arterior border of the drumhead.

Let us consider for a moment the class of patient that comes to the general practitioner for advice and treatment. By far the greatest number consist of young children, generally the victims of the grippe during the winter and spring months. In the older textbooks on otology, it was usually taught that a patient could not have any serious trouble unless he had severe pain, and it is difficult at the present time for some of the older practitioners of medicine to believe that a child has any serious ear trouble unless he or she has screamed with pain for some time, as many of us have done in years past, and waited patiently, with the application of a hot onion, for the ear "to break."

The most serious cases to-day among children are those who have little, if any, pain, but who have a high temperature and who lie in a state of semi-stupor. The child will complain of a slight sore throat or tonsilitis, due to the presence of the pneumococcus or streptococcus, and in the course of a day or so may complain of a slight earache. If, however, the child is very young, there may be no suggestion, except for the temperature, that the ear is involved. Such a child may recover in a week's time with the evidences following a mild grippe attack or, as more frequently happens, the child will have a temperature ranging from 100° to 105°, or even 106° F. in exceptional cases. In these cases, the mastoid cells are often involved, and it is here that an early diagnosis is of the greatest importance, for by a timely incision of the drumhead we can often ward off an attack of acute mastoiditis. The grippe infection is the cause most frequently of these so called painless cases of earache—other causes are scarlet fever, diphtheria, measles, and tuberculosis.

The following case will demonstrate how serious an ear affection can be with but little pain:

CASE I.—S. C., a boy, six and one half years of age, has been in poor health all winter, and has suffered more or less from attacks of bronchitis, and he was sent from Washington to a New Jersey health resort for a change of air. Unfortunately he took cold, and on March 21, 1905, he complained of a slight earache in the right ear, but it did not seem to amount to anything except for the fact that he had a continuous fever from that time till March 31st, a period of ten days, when I saw him in consultation. Two days before he was brought to the city (March 29th), he had some slight pain in the left ear and at that time he was deaf on both sides. The physician in New Jersey did not seem to think that the condition of the ears had anything to do with his fever, but was inclined to think that the case might be one of possible typhoid, and as the temperature rose as high at 102° F. he gave him antipyretics.

His family physician was sent for and he immediately decided that the ears were the cause of the rise of temperature. The boy was brought to New York at once, and I saw him on March 31st. An examination with the otoscope and speculum showed that both drumheads were bulging in the posterior and upper quadrants, besides being deeply congested. Nitrous oxide gas was given and a free incision was made in each drum membrane, and a bloody serum escaped. Both mastoid processes were quite tender to pressure, the left one more so than the right. The discharge was

more profuse on the following day, although the temperature remained about the same. On April 2nd the discharge became purulent, and an examination showed that the staphylococci predominated on the right side, while the streptococci were found on the left. On April 4th the boy seemed better and the temperature was lower; a blood count, however, showed a leucocytosis of 16,000. On April 5th the boy was not so well, and as both mastoid processes were still very tender and the rise of temperature was more marked, I performed a mastoid operation on both sides and found the cells full of pus, granulations, and softened bone.

The physician in this case was entirely misled because the earache was very slight and did not seem to indicate any serious aural trouble, and from a study of the temperature chart he was inclined to believe that the boy was suffering from incipient typhoid. Unfortunately for the patient, much valuable time was lost, for had an early and free incision been made in the drumheads, the chances are that the boy would have made a prompt recovery, and he would have escaped a double mastoid operation.

Having been connected with the Hospital for Scarlet Fever and Diphtheria Patients in New York, as a consultant on aural diseases ever since its organization, I have had an excellent opportunity of seeing many cases of aural disease occurring as a complication of scarlet fever and diphtheria. Most of the cases were due to scarlet fever, and there were many of them. For two winters I followed the cases very closely with the resident physician, Dr. Edmund L. Dow, and it was due largely to his care and watchfulness that all the patients suffering from aural disease during this time recovered with good hearing. Pain played a very insignificant part, and if we had waited for this symptom to be well marked, we should have seen many a drumhead destroyed with caries of the ossicles in a very short time. There were several cases of mastoid disease, and the prevalent microorganism found in the pus in such instances was the streptococcus.

We all know how anxious we are about the condition of the kidneys in scarlet fever, and yet many a physician will never examine a patient's ear until his attention has been called to a bloody discharge on the pillow, or the temperature is high and cannot be accounted for, until a head mirror and speculum reveal a very red and bulging membrane.

How many cases of chronic otorrhœa we see in the dispensaries to-day, the result of scarlet fever, measles, and diphtheria! In the light of our present knowledge we know that such a condition of affairs was due to ignorance and inexperience. When a scarlet fever patient is apparently doing well and suddenly has a rise of temperature, which cannot otherwise be explained, it will generally be found to be due to an acute suppurative otitis media. The same applies to measles and diphtheria. The general practitioner should constantly examine the ears of patients affected with the acute infectious diseases, and whenever the drumhead is inflamed he should apply the artificial leech, and if the temperature does not fall he should make a free incision in the drumhead even if there is no bulging. Early and vigorous treatment is of the first importance in this class of cases, and if properly applied will often abort mastoid disease and intracranial complications.

The following case of scarlet fever complicated by acute purulent otitis media will be of interest in this connection:

Case II.—The patient, a boy, five and one half years of age, had whooping cough a year ago. He has always been of a nervous temperament and delicate. He is a mouth breather, and an examination shows the presence of adenoids in the nasopharynx.

On March 17, 1904, he complained of headache and was feverish, and during the evening he had nausea and vomiting, which continued for several hours, and later he was troubled with a sore throat. At the end of twenty-four hours a moderate rash appeared on the chest and neck, and later spread to the abdomen, axillæ, groins, and thighs. On admission to the hospital on the fourth day of the patient's illness, the rash had begun to fade on the neck and chest, and on the ninth day none was visible.

The patient's head was abnormally large but the body was very thin. The tongue was coated and whitish with the papillæ enlarged. He had the so called Hutchinson teeth, the pharynx was moderately congested and the tonsils were hypertrophied. The ears were examined and the drumheads were normal in appearance. The anterior and posterior cervical and the submaxillary glands were moderately enlarged, with slight pain on pressure.. The heart and lungs were normal. The desquamation commenced on the eighth day and continued until the forty-fifth day. The patient went through an average light attack of scarlet fever until the nineteenth day of the illness, when he complained of a dull pain in the left ear.

The temperature, which had been under 100° F. for several days, rose to 100.6° F. The house surgeon used the hot douche in addition to the application of the hot water bag and the cold Leiter coil. The drum membrane showed only a slight congestion at first, but on the twenty-second day the entire membrane was congested and bulging. The earache had not been continuous and was not severe until the morning of the twenty-second day. The temperature then rose to 101.2° F., pulse 103.

Nitrous oxide gas was administered and a free incision was made in the drumhead. No pus was found, but on the following day a seropurulent discharge began and continued for nine days after the puncture. An examination of the pus showed the pressure of the streptococcus. The membrane rapidly regained its normal appearance and the hearing was almost normal at the time of the patient's discharge from the hospital on the forty-fifth day of his illness. It is interesting to note that after the incision of the drumhead the temperature rapidly fell to 98.6° F.

According to my experience, mastoiditis is not as serious a complication of scarlet fever as of measles, and it has been my misfortune to have seen several fatal cases of measles due to meningitis as a result of a virulent infection of the mastoid cells. In such instances we are likely to have what is termed an osteomyelitis affecting the temporal bone. According to Dr. E. H. Nichols of the Harvard Medical School "infective osteomyelitis is an acute suppurative inflammation of the bone and may be produced by any one of a variety of pathogenic microorganisms or by a mixed infection." It should be considered as a severe type of bone inflammation and is due generally to the presence of the staphylococcus or streptococcus, particularly the latter. The disease is more common among young subjects, and possibly the changes in the bone of young children may have something to do with the development of the disease.

It is a fact that, in infants and young children, myelin cells are present in the soft parts of the bone in considerable quantities, only to become very much less numerous as the child grows until finally in the

adult there are but few myelin cells except in the long bones, the sternum and the vertebræ. In osteomyelitis, the patient suffers from profound intoxication with marked general depression, and usually has a high temperature. The area of tenderness over the mastoid bone is extensive and œdema is apt to devedop at an early stage.

When operating on such a case it will be found that the suppurative inflammation extends over a greater area than is usual, involving in some instances the occipital and parietal bones. Even after the surgeon has removed all the diseased bone, he may find, at a subsequent operation, that the disease of the bone has extended again in various directions. When osteomyelitis occurs as a complication of measles, it is likely to be followed by meningitis.

I saw a case of measles in a boy ten years of age two winters ago, where the disease had affected both temporal bones as a result of acute suppurative otitis media. An operation was performed early and although the osteomyelitis was very extensive and involved both mastoid processes, the boy for a brief period seemed to be doing well, when, without any warning, he developed meningitis very suddenly and died inside of twenty-four hours.

Of late years, the attention of physicians has been directed to a primary phlebitis of the jugular bulb, which occurs more particularly in children. As we all know, the jugular bulb lies just beneath the floor of the tympanum, and if the plate of bone is very thin, we can easily understand how readily the infection may pass through the floor to the bulb, and cause a phlebitis and thrombosis. The infection is carried by direct absorption or by means of the small veins and lymphatics. The diagnosis is made usually on account of the following symptoms: The little patient first has an acute suppurative otitis media due to streptococcus infection. After a free incision of the drumhead, the temperature, instead of declining as it is apt to do under such conditions, rises suddenly to 104° or 105° F., only to fall to normal or below normal. The temperature soon rises again as before, after the child has complained of chilly sensations, or he may have only cold hands or feet. The pulse generally is rapid. When the temperature is low, the child, as a rule, feels bright and happy, but he is dull and listless when the fever is high. Jansen says that papillitis is of frequent occurrence in cases of primary phlebitis of the jugular bulb.

McKernon at the Meeting of the American Otological Society in 1905, reported six cases of this disease in children with four recoveries. The ages varied from six months to two years, and in each instance the mastoid bone was found to be normal. The thrombus in each case was removed from above by opening the sigmoid sinus. This is the usual procedure with or without ligation or excision of the internal jugular vein according to conditions found.

In my experience, I consider it not only unwise but dangerous to excise the vein in cases of phlebitis and thrombosis unless absolutely necessary, and more particularly in the case of young children. The longer the time the little patient is under an anæsthetic, the more grave becomes the prognosis. If the operation is performed early in the course of the disease and the clot has not begun to disintegrate, it is my practice not to ligate and excise the internal jugular vein, even if we do not have a flow of blood from the bulbar end. In such cases it is wiser to postpone further operative interference for at least twenty-four hours.

In four days' time following an attack of acute suppurative otitis media in a child, I have seen complete involvement of the mastoid cells with a perforation in the tip cell. In this case the infection was due to the presence of the streptococcus. Cases due to this microorganism as well as to the pneumococcus are likely to be serious ones, especially when found in great numbers. On this account it is most important for the physician to know at once the nature of the infection. In cases of mixed infection where the streptococci and pneumococci do not predominate, we can afford to take greater chances, but should the streptococcus of pneumococcus be the cause of the disease, the most vigorous kind of treatment should be carried out, and an early incision of the drumhead is of the greatest importance even before bulging of the membrane appears, particularly if the patient has high temperature.

Besides having a knowledge of the infection, the physician should make a blood examination from day to day, especially in the severe cases, to ascertain the relative proportion of the leucocytes and of the polynuclear neutrophiles, for most of the serious cases of acute suppurative otitis media are complicated by an inflammation of the mastoid cells. I believe that in many of the acute cases there is a simultaneous involvement of the middle ear and mastoid cells, and in such instances the aural surgeon should always make an early and free incision in the posterior portion of the drumhead and carry it well up into the attic in order to drain the latter cavity as well as the antrum. There should be made daily examinations of the blood in order to determine whether the leucocytosis is increasing or decreasing, and what relative changes are taking place in the cell percentage. If the leucocytosis is below normal and the polynuclear percentage is higher than it ought to be and still rising, the prognosis is not so favorable as when both are falling or when the leucocytosis is rising and the polynuclear percentage is decreasing. To have some rational basis from which to draw conclusions, we ought to know the normal average leucocytosis and cell percentage in each case. Taken in connection with other clinical symptoms, the blood count will aid one quite a little in deciding as to the time of a mastoid or other operation.

Observations made by Dr. George A. Dixon at the New York Eye and Ear Infirmary go to show that in cases of suppurative inflammation of the mastoid cells, the leucocytosis ranged from 5,000 to 17,800, and the average polynuclear percentage was within normal limits. It was only when the more serious complications developed, such as epidural abscess, sinus thrombosis and intracranial invasion, that the blood count showed any very marked change. As the leucocytosis is apt to be high in pneumonia, we must be on the lookout for this complication when occurring in connection with acute suppurative otitis media, especially if the temperature is high and the patient is suffering from the grippe.

The following case I beg to report, as showing the value of a blood count in a case of acute otitis media:

CASE IV.—Marion L., six years old, had an attack of grippe, followed by a severe earache on each side.

I saw the case in consultation and opened both drumheads freely. A profuse discharge followed. The patient seemed to be on the road to recovery, but mastoid tenderness developed on both sides, and the child became fretful and restless, and developed a more or less rise of temperature. The drumheads were freely opened again, as there was a tendency for the openings to close.

On March 21st an examination of the blood showed the following conditions present: Leucocytes 11,950, polynuclear neutrophiles forty-five per cent. Four days later, on March 25th, the leucocytes had increased to 14,320 and the polynuclear neutrophiles to seventy per cent. Dr. Harlow Brooks, who made the blood count, reported on this last examination of the blood as follows: "Neither malarial plasmodia nor pigmented leucocytosis could be found. The changes which have taken place since the last examination are, briefly stated, an increase in the percentage of the polynuclear cells, associated with a quite pronounced increase in the anæmia. While the leucocytosis is by no means a heavy one, I think that the fact that an increase has taken place should be noted, and particularly that the increase has been chiefly in the polynuclear elements." Taken in connection with the clinical symptoms which did not show any improvement, the blood examination was of much value. Both mastoid processes were opened and found filled with pus and softened bone.

We must not, however, attach too great importance to the blood count, for cases of mastoid disease occur where the leucocytosis is not marked and the polynuclear elements are increased but little above normal. In connection with the clinical symptoms it is of considerable importance but further investigations on this subject are imperative before we can rely with too much confidence on the result of blood examinations alone.

Of late years one has heard a great deal about chronic suppurative otitis media and the danger of a serious brain complication resulting from it. Many patients suffering from chronic otorrhœa have come to me in recent years in a state of great alarm, because they had been told by reputable practitioners that they were "living over a volcano," and were likely "to have some brain complication at any moment." One patient came, a few years ago, in a state of great nervous excitement because she had been told by an otologist that the chronic suppuration in her ear might lead to sudden death at any moment, unless an immediate Schwartze-Stacke operation were performed. After removing some granulations and by a systematic use of the middle ear syringe, the chronic otorrhœa was cured, and the patient has regained her health again, although for a time her nervous system was considerably affected owing to the unfortunate advice which had been given her.

I would not be misunderstood as disapproving in any way of the so called Schwartze-Stacke operation for the cure of chronic otorrhœa, because I know from experience how valuable this operation is in certain cases, but to advocate it in all instances where the patient has a chronic purulent otitis media is most uncalled for. If we cannot cure the discharge by conservative methods, we certainly ought to do so by operative interference, for after checking a foul smelling discharge which has existed for years, the patient's health generally becomes very much improved and he is apt to put on weight.

In a paper read recently before the British Medical Association at Toronto, I gave my views on this subject as follows:

"In considering the advisability of an operation in a patient suffering from a chronic otorrhœa, we should determine whether the perforation is sufficiently free for good drainage. If the opening is large and we can readily pass a probe into the attic and find but little carious bone, and further, if the patient does not complain of pain, headache, or dizziness, I feel that it is our duty first of all to try to cure the disease by means of injections through a middle ear syringe. Exuberant granulations should be removed and everything done to establish good drainage. If, on the other hand, a patient comes to us, complaining of frequent attacks of earache, headache, nausea, vomiting or vertigo, and on examination we find that good drainage is impossible, owing to a small perforation (generally in Shrapnell's membrane) and that the ossicles are carious, that the discharge is fœtid and contains cholesteatomatous masses, and, moreover, if we detect a carious condition of the attic, we should advise an immediate operation, either excision of the drumhead and ossicles, or a Schwartze-Stacke operation. In such cases, the patient is also apt to have occasional attacks of mastoid pain, —another indication for an early operation."

The percentage of fatal cases of chronic otorrhœa among private patients is very small, and I have had but one case, viz., a brain abscess, during my entire practice. It is from the hospital cases that the statistics are compiled, and we all know how the poor neglect treatment unless compelled to come on account of pain, foul smelling discharge and dizziness. The complications that are likely to occur from chronic otorrhœa are mastoiditis, an abscess in the temporosphenoidal lobe or cerebellum, leptomeningitis, or septic thrombosis. Where there is extensive necrosis of the temporal bone there may follow hæmorrhage from the carotid artery or the internal jugular vein.

I present the following conclusions:

1. The graduate in medicine of to-day should be competent not only to recognize the drumhead in health and disease by means of the head minor and speculum, but also to incise it in cases of emergency.

2. He should make frequent and regular examinations of the ear during the acute exanthematous diseases and also of the grippe, especially in the case of children, from the fact that the pain may be very slight and in some cases altogether absent. High temperature in children should always cause suspicion of an aural affection.

3. In chronic otorrhœa the surgeon should distinguish between the operative and nonoperative cases, and he should never unnecessarily alarm the patient by advising an immediate operation, until he has made a thorough examination and satisfied himself that the case is an urgent one, and cannot be cured by conservative methods.

The late Edward H. Clark, of Boston, many years ago gave excellent advice, which was approvingly quoted by von Tröltsch, and which we should constantly bear in mind, to the effect that: "The physician who fails to examine the ears of a child in the course of one of the acute exanthemata may justly be denominated an unscrupulous practitioner."

47 West Fifty-fourth Street.

The appearance of pus in the breast of a woman who is not, or has not recently been nursing, is suspicious of some unusual form of infection, *e. g.*, tuberculosis. —*American Journal of Surgery.*

RHINITIS IN CHILDREN, INCLUDING RECURRENT CORYZA, DUE TO INTESTINAL AUTOINTOXICATION.*

By Louis Fischer, M. D.,
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The consideration of rhinitis is important when we study the causes leading to the same. These causes are: First, invasion of pathogenic bacteria setting up local inflammatory action with consequent swelling and discharge due to the toxic elements given off by the pathogenic microorganisms. Second, local irritants such as the toxines circulating in the blood which have a predilection for this particular region and set up local inflammatory action causing a train of symptoms, embodied in the word rhinitis. Febrile rhinitis is therefore found in diphtheria, influenza, morbilli, meningitis; while nonfebrile rhinitis, usually chronic rhinitis in syphilis, intestinal autointoxication, adenoids, chronic local disturbance.

Pathogenic Bacterial Invasion.—One of the most frequent types of rhinitis is that form caused by the invasion of the Klebs-Lœffler bacillus giving rise to diphtheritic rhinitis. In the beginning there may be nothing but a simple coryza, resembling a cold in the head, but as the disease progresses we will find the nostrils filled with a yellowish or greenish-yellow pseudo-membrane. Such cases may be designated as walking cases of diphtheria. They commence with a mild nasal discharge without any systemic disturbance, and thus frequently mislead. Such cases resemble the benign type of rhinitis, and are looked upon as an ordinary "cold in the head." If sneezing is associated with this catarrhal discharge then we can easily imagine how the infection is spread by means of the bacteria therein. It is difficult to trace some cases of diphtheria, and at times the ætiological factor remains obscure. Every now and then one or two members in a family will suffer with what appears to be influenza or grip with associated rhinitis. Often these cases of supposed grippe convalescence give rise to a case of diphtheria in the same family. It is thus plain that there must be some relationship as to cause and effect between the rhinitis cases associated with supposed grippe and the subsequent development of diphtheria in one and the same family.

Clinical Diagnosis.—In its early stage the so called premembranous stage, diphtheritic rhinitis cannot be distinguished, be it in a malignant or a mild form, without bacteriological aid. The most marked symptoms are seen when inspecting the nostril with the aid of a nasal speculum through which a strong yellow light is reflected. The evidences of inflammation such as redness and swelling are evident in the nasal chambers. There is frequently a discharge, quite profuse, of glairy mucus, whitish or yellowish-white, which frequently excoriates the entrances to the nostrils, resembling artificial eczema. The temperature taken in the rectum is rarely higher than 100° F., it may even be normal. The pulse will show little or no acceleration, although in some cases it will show irregularity. Respiration is not abnormally increased. The glands of the neck, especially the postcervical chain, can be felt and are usually enlarged. A child having a running nose, although a true case of diphtheria, may not have a general systemic disturbance until several days have passed, so that we cannot be guided by the systemic disturbance caused in the beginning of a diphtheritic rhinitis, until a large amount of the toxine is absorbed, giving rise to the usual train of symptoms, such as fever, malaise, associated with loss of appetite and rarely vomiting. It is a well known fact that the gastric secretion is arrested during the course of a diphtheritic infection. The toxine of diphtheria inhibits the secretion of the peptic glands, and where there is a lack of the internal secretions not only is digestion impaired, but there is food stagnation evidently dependent on motor insufficiency of the stomach. What has been said concerning the stomach applies equally well to the intestinal secretions. By their absence there is stagnation of the intestinal contents. From a theoretical standpoint therefore a laxative or hydragogue cathartic is demanded; not only to stimulate secretion, but to assist in the elimination of stagnant stool.

Bacteriological Diagnosis.—With the aid of a sterilized swab a smear can be taken from the nose and the surface of a blood serum culture tube inoculated. This is the same method as has been in vogue in taking a culture from the pharynx and tonsils. The presence or absence of the Klebs-Lœffler bacillus will confirm the presence or absence of diphtheria. This is a very vital point, considering the fact that nasal diphtheria frequently simulates in its clinical aspect ordinary rhinitis, and is frequently mistaken for syphilitic coryza. Rhinitis caused by influenza bacilli frequently invades the digestive tract. The infection there spreads from a rhinitis or a rhinopharyngitis through the œsophagus into the stomach. Thus we have an invasion into the stomach and bowels giving rise to that form of influenza known as the gastric type of the disease.

Intestinal Rhinitis.—There is a form of rhinitis dependent on a general autointoxication of the intestine caused by improper digestion. When the intestine contains stagnant fæcal matter a general autointoxication results frequently ending in rhinitis. This accounts for that type of "recurrent coryza" so frequently seen in dyspeptic children with residual gastric and intestinal stagnation. The vasomotor nerves supplying the mucous membrane of the nose, when affected by intestinal toxines produce vasomotor disturbances, one of which is recurring coryza.

Laryngologists have styled this recurring coryza as periodic hyperæsthetic rhinitis. These attacks last but two or three days. They recur, unless a general cleansing of the gastrointestinal tract, as often as once a month in some cases, is given. Climatic conditions do not influence this form of rhinitis in as much as these attacks occur in both winter and summer. Toxines are absorbed from the bowel, and improve

* Read by invitation before the Section in Laryngology, Eastern Medical Society of New York.

when the intestine or the stomach is treated, and the elimination of said toxine takes place. When recurrent rhinitis is seen in dyspeptic children then the urine invariably contains indican.

Rhinitis dependent upon local causes is another form which requires careful consideration. It is due to the presence of hypertrophic masses of redundant tissue located in that portion of the nasopharynx known as Waldeyer's ring. This is the common type of adenoid vegetation in which we have along with the rhinitis as a rule the "adenoid habitus," such as the pinched nose, mouth breathing, and snoring at night. The management of a case of rhinitis dependent on adenoid vegetations consists in the removal of such growths by the usual curettage.

Sneezing.—A patient convalescent from diphtheria can transmit the disease until the last evidence of the Klebs-Lœffler bacillus has disappeared. Sneezing is frequently the means of transmitting the disease.

Meningitis.—The proximity of the cerebrum to the frontal sinuses renders the invasion of pathogenic bacteria through the nose a very simple matter. When such pathogenic bacteria invades the deeper structures they can enter the lymph channels or the blood current and be carried into remote portions of the body. In this manner a streptococcus infection is quite possible. This is also the case if the meningococcus intracellularis abounds in the nasal chambers. Simple rhinitis is a very early symptom of many cases of epidemic meningitis. This being the case it is well to bear in mind that an apparently trivial nasal discharge may be the forerunner of an epidemic form of meningitis. Healthy individuals, according to Weichselbaum, can harbor the meningococcus weeks and months in the nose, and in some instances there is no subsequent development of meningitis. Such cases while harboring the bacterium of meningitis may frequently show symptoms of rhinitis. These cases are the ones which give rise to epidemics in as much as the bacterium can be carried for a long time in the nose.

Influenza.—Midwinter catarrh so frequently seen is in many instances due to the invasion of Pfeiffer's influenza bacillus. Such infection if recognized early can be given the benefit of careful therapeutical measures and prevent disagreeable complications. Influenza when beginning with coryza and nasal irritation with sneezing and discharge, if properly treated, will arrest further progress of this inflammatory condition. Proper treatment given in time will abort catarrh and so limit many infections. On the other hand, if rhinitis as a symptom of influenza is neglected the same can extend from the upper to the lower air passages, giving rise to bronchitis, pleurisy, or pneumonia, with its usual train of complications.

Syphilitic Rhinitis.—A persistent nasal discharge is sometimes seen in early infancy as "sniffles." This catarrh will persist in spite of local treatment until small doses of calomel or protoiodide of mercury have been given. The absence of an eruption over the body or around the anus does not necessarily militate against the diagnosis. In some cases we may be compelled to make the diagnosis by exclusion, as the only symptom present will be rhinitis.

Rhinitis a Preeruptive Symptom in Measles.—A nasal discharge accompanied by sneezing is usually a forerunner of measles. With this symptom there are the usual pigmentations of the conjunctival mucous membrane and the enanthem so valuable as a diagnostic point. However, rhinitis *per se*, should be looked upon as a valuable symptom in the complex phenomena associated with the period of incubation of measles. The association of fever is a constant factor during the incubation of measles. From what has been said it is well worth remembering that while rhinitis may appear as a simple local hyperæmia associated with a nasal discharge of a catarrhal nature, it is well worth remembering that such catarrhal process may also be associated with the various conditions which have been described.

Indicanuria.—The examination of the urine is a valuable diagnostic aid in determining a causative factor in recurring coryza dependent on the absorptions of toxic elements formed in the intestine. Not only is the presence of indican an important aid in eliciting the ætiological factor in this type of recurring rhinitis, but the presence of indican assumes a very important rôle in determining the proper therapeutical measures to be pursued. From what has just been said we can easily see that if indican exists, associated with stagnant fæces (chronic constipation) then the treatment is one of distinct elimination. The importance of careful dieting must also be considered and indigestible food prohibited.

Treatment.—The treatment of rhinitis depends on its cause. The uselessness of local treatment such as an oil spray or an insufflating powder must be apparent to the thoughtful physician who will seek the cause, modify it, and thus relieve the remote effect, in many cases, a troublesome rhinitis.

Gastrointestinal Rhinitis.—As this type of irritation is largely a question of overstimulation by feeding of too much meat and similar stimulating food, so it is important to prohibit meat in every form. Older children having this rhinitis require a saline cathartic such as 10 to 20 grains of sodium phosphate morning and evening to produce liquid stools. Catharsis should be continued until the urine shows but a trace of indican. Water should be permitted in large quantities, and fruit given liberally. Milk, buttermilk, cereals, and butter should be prescribed.

If rhinitis is dependent on adenoids then the sooner surgical treatment is instituted the better for the child.

Specific Rhinitis.—If rhinitis continues in spite of stimulation of the emunctories and after careful dieting and active catharsis then the sooner sodium iodide and small doses of protoiodide of mercury are given, the better for the case. When specific rhinitis otherwise known as syphilitic coryza continues for some time then small doses of calomel will prove beneficial.

65 East Ninetieth Street.

SOME OBSERVATIONS ON DISEASE IN MANILA.

By PAUL G. WOOLLEY, M. D.,
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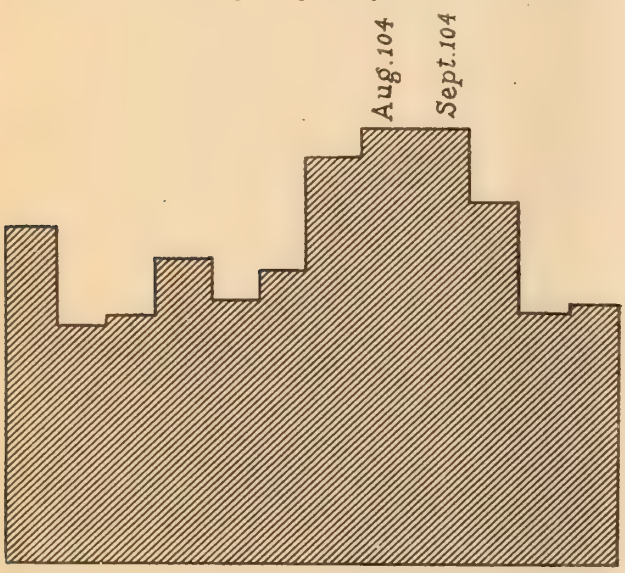
It has been urged that the climate of Manila is a bad one, that it enervates the white man, and predisposes him to many ills. In a sense this is true, for while the heat is rarely excessive, it is continuous, and the resulting mean temperature is relatively high compared to that of temperate climates. The continuous heat is enervating, and tends to induce bodily and mental inactivity. But it is also true that the climate is often accused of being the direct cause of much disease, an accusation which, I think, cannot be readily sustained. It is rather the lassitude and inactivity that lead to habits which are far more harmful than any climate. It is probably true that if a white man observes the uusual rules of educated people in cleanliness of living and abstaines from excesses in all things, especially in the use of alcohol, he may with an occasional visit to a climate like that of Benguet, during the hot months, live as comfortable a physical life in Manila as elsewhere. Judicious exercise, at appropriate times of the day, is a *sine qua non* of a healthy life, in the tropics as in the temperate zones.



I. To show the monthly admission of dysentery in American troops in the Philippine Islands, 1904.

In order to give an idea of the general climatic conditions in Manila Chart VIII. has been prepared. This covers the four years from 1902 to 1905. In addition to these charted data it may be added that for the years from 1883 to 1902 the average mean temperature was 26.2°C., the average maximum 36.3°C., and the average minimum 17.1°C. The mean temperature at Baguio, Benguet, the summer capital, is 18.6°C., maximum 24.9°C., and the minimum 11.8°C.

During a residence of somewhat more than three years in Manila I have had excellent opportunities to observe many of the various forms of disease that occur. In this, as in other cities of the orient, there occur many ailments which are as cosmopolitan as the populations. Typhoid, tuberculosis, measles, small pox, chicken pox, whooping cough, syphilis, gonorrhœa, cerebrospinal fever, and others. Some of these are a serious item in the mortality records, as for instance tuberculosis. Others are rare, or at least not frequently met with, as diphtheria. While lobar pneumonia is not a very common affection among the general population, it has occurred in epidemic form in the great government prison.

In the era just preceding the American occupation and in the year or so succeeding, when affairs were topsy-turvy, and before sanitary conditions could be bettered, there was much reason for the belief that Manila was not a proper abiding place for white men. Cholera was not merely endemic, but was epidemic. Plague victims were numerous, and typhoid, epidemic (bacillary) dysentery, and other gastrointestinal disorders were a great menace to health. The latter are still the most serious ills with which the white man must contend.

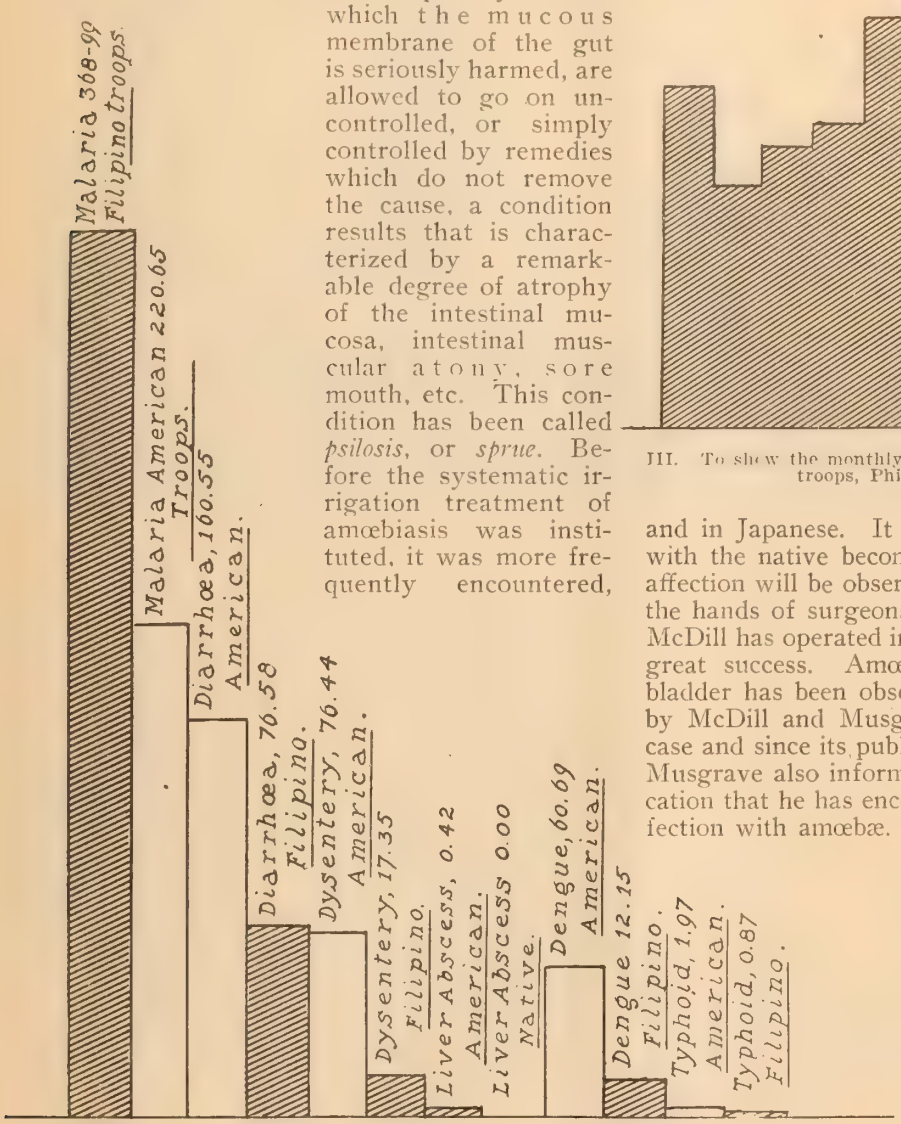
Chief of the gastrointestinal disorders is intestinal amœbiasis (amœbic dysentery). A justifiable clinical classification divides this disease into three general forms: acute, which is in reality in most cases a terminal stage of the chronic disease; subacute, which is the common type, characterised by mucous passages of greater or less frequency; and chronic, the often unsuspected type, of which the only symptoms may be a simple looseness of the bowels with perhaps indefinite abdominal uneasiness. When upon this latter form an acute inflammation is engrafted, the passages are those of the typical "bloody flux." In either the subacute or chronic forms acute symptoms may supervene. It is only after studying the intestines of such cases that one is convinced of the chronicity and terrible insidiousness of the disease. The characteristic sign is of course the amœba, and this is most readily found in stools following a brisk saline cathartic.

To illustrate the incidence and mortality of dysenteric and diarrhœic disease Charts I., III., and IV. have been made. The statistics were taken from the monthly reports of the bureau of health, and from the annual report of the surgeon general of the United States army for 1904. Chart I. shows the monthly admissions of American soldiers with dysentery. Chart III. shows the monthly admissions of the same class of men with diarrhœa. Chart IV. shows the deaths in Manila, by months, during the time included between January 1, 1902, and December 1, 1905. By comparing these charts with chart VIII., it can be seen that the greatest number of cases occur in July, August, and September—a season of the year corresponding with the greatest number of rainy days, and the greatest rain fall.

Other forms of intestinal disease, very common, and more or less grave as the case may be, are the results of infections with various parasites, such as uncinaria, strongyloides, tricocephalus, ascaris, *Balantidium coli, Schistosoma japonica, Opisthorcus sinensis,* and various species of tæniæ. Multiple infections are common. The less frequent of these parasites are *Balantidium coli,* only a few cases of which have been observed by Strong and Musgrave, and *Opisthorcus sinensis,* which up to the present time has been encountered but once (Mallory). At the time when I wrote my report on a case of infection with *Schistosoma japonicum,* this was the only case on record from the Philippine Islands. By the time I left Manila Herzog had discovered one or

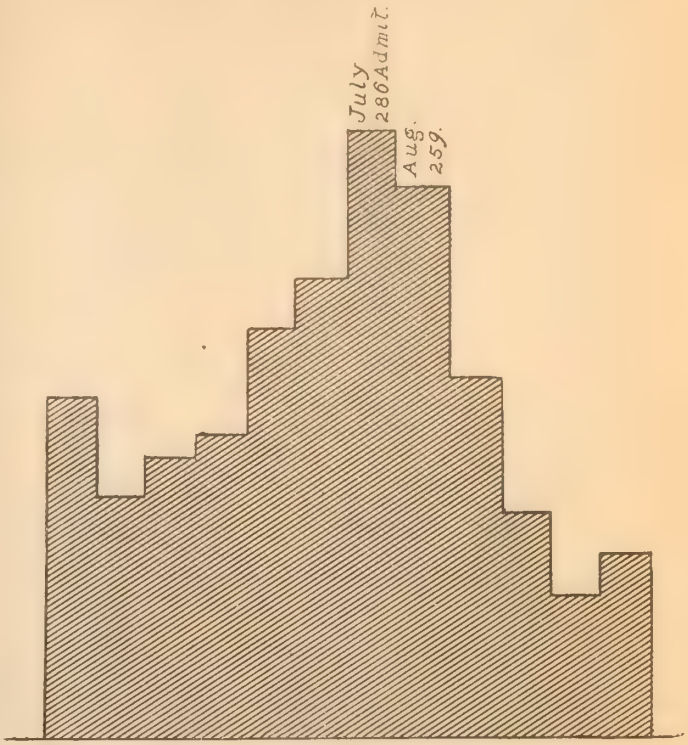
two others, after a systematic investigation of the cases of liver cirrhosis in his collection. But the adult parasite had even then not been found. Since that time, however, in the course of careful autopsies, Musgrave, working in St. Paul's Hospital in Manila, has not only encountered six or seven additional cases of infection, but has, he writes me, succeeded in finding the adult parasite. From these results of careful observation we may reasonably expect that schistosomiasis will henceforth be more frequently recorded, and that we shall have to class these cases among the more common instead of among the rarer parasitic intestinal infections. It is also probable from our observations, which agree with those of Castellani in Ceylon, that certain sporadic cases of diarrhœa are caused by the flagellata.

When these intestinal diseases, especially those in which the mucous membrane of the gut is seriously harmed, are allowed to go on uncontrolled, or simply controlled by remedies which do not remove the cause, a condition results that is characterized by a remarkable degree of atrophy of the intestinal mucosa, intestinal muscular atony, sore mouth, etc. This condition has been called *psilosis*, or *sprue*. Before the systematic irrigation treatment of amœbiasis was instituted, it was more frequently encountered, and is still observed in persons, who, with an unchecked diarrhœa from whatever cause, have not sought advice or received proper care. It is our opinion that sprue is not a disease, although it may have the appearance of one at first sight, but a chronic condition brought about by one or another intestinal disease.



II. Comparative admissions per 1,000 among American and Filipino troops in the Philippine Islands, 1904.

Abscess of the liver, though not so frequent as in earlier days, is, nevertheless, not infrequent, and is usually an accompaniment or sequel of intestinal amebiasis. While more common in white men, so far as our experience goes, it also occurs in Filipinos and in Japanese. It is possible that as association with the native becomes closer, more cases of this affection will be observed. Operative procedures in the hands of surgeons have been very satisfactory. McDill has operated in a great number of cases with great success. Amœbic infection of the urinary bladder has been observed several times in Manila by McDill and Musgrave, who have reported one case and since its publication have studied six more. Musgrave also informs me in a personal communication that he has encountered a case of cerebral infection with amœbæ.

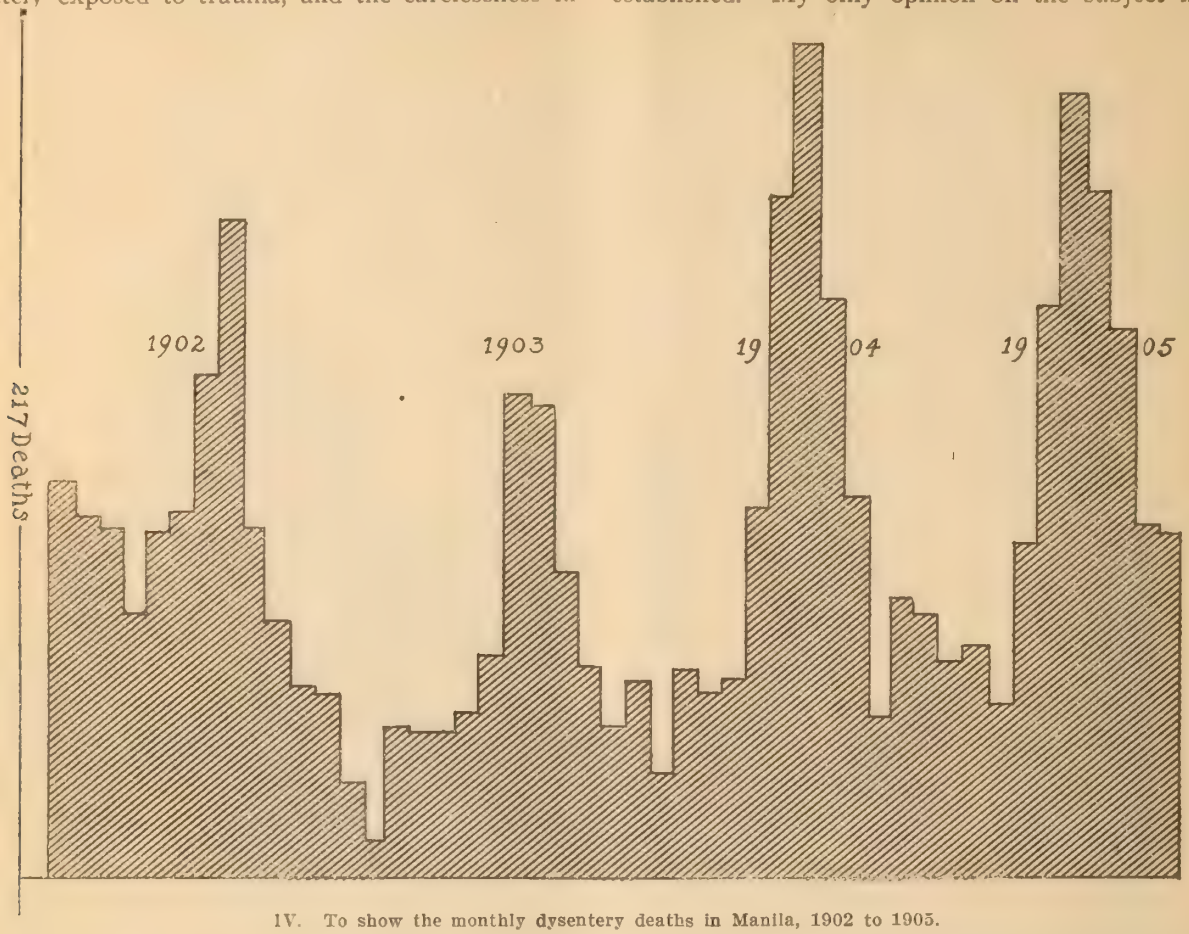


III. To show the monthly admissions of diarrhœa in American troops, Philippine Islands, 1904.

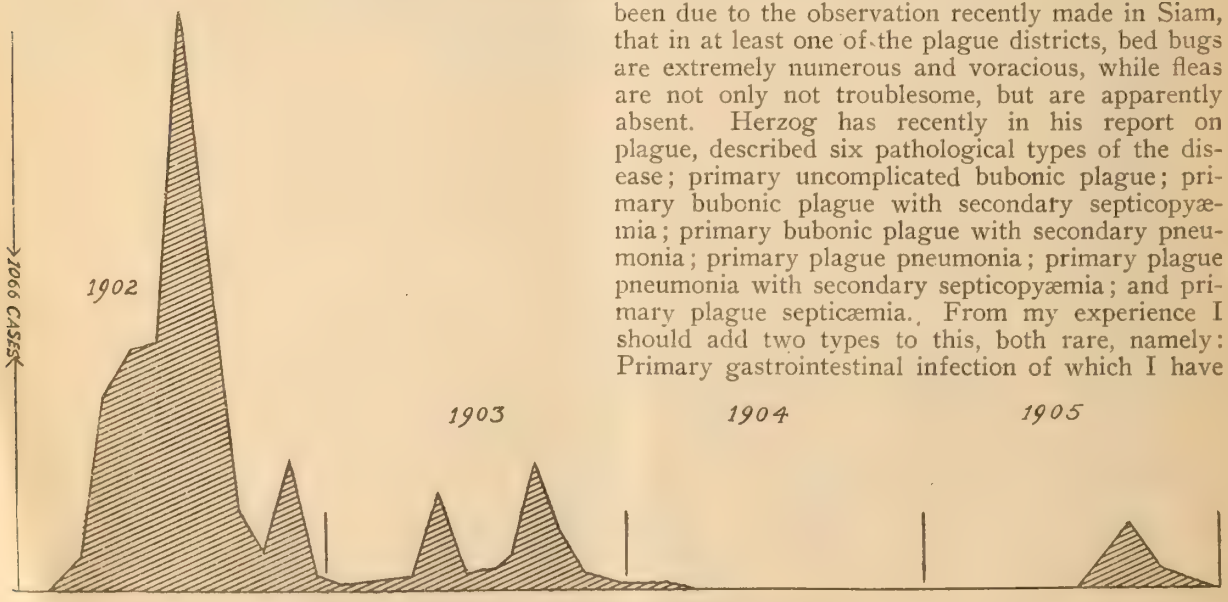
But by far the most interesting observation on the subject of infection with amœbas has been made recently by Musgrave, who tells me that he has not only found amœbæ in the circulating blood, but has collected them therefrom. This broadens our conception of the disease and, as Musgrave says, changes completely the significance of the term amœbiasis.

Plague is an ever present source of irritation to the health authorities. The disease is endemic in Manila, and scarcely a month passes but one or more cases are found (see Chart V.). The factors concerned in the continuance and spread of this disease

are the hygienic conditions of the houses of the laboring classes of natives and Chinese, the habit of these people, of working with the feet and legs completely exposed to trauma, and the carelessness in attending to lesions upon these members. An important factor in the spread of plague is very possibly the prevalence of ectozoic parasites, fleas, bedbugs, etc. Just what part either or both of these play cannot be stated with any great confidence. Whether the fleas are the bearers of the infection from rats to man, or whether other insects are concerned wholly or in part, has not been satisfactorily established. My only opinion on the subject has been due to the observation recently made in Siam, that in at least one of the plague districts, bed bugs are extremely numerous and voracious, while fleas are not only not troublesome, but are apparently absent. Herzog has recently in his report on plague, described six pathological types of the disease; primary uncomplicated bubonic plague; primary bubonic plague with secondary septicopyæmia; primary bubonic plague with secondary pneumonia; primary plague pneumonia; primary plague pneumonia with secondary septicopyæmia; and primary plague septicæmia. From my experience I should add two types to this, both rare, namely: Primary gastrointestinal infection of which I have seen two cases, and primary cutaneous infection (carbuncle), of which I have seen but one undoubted case. Further I consider that plague septicæmia is more common than does Herzog, for the reason, perhaps, that most of my cases occurred during a



IV. To show the monthly dysentery deaths in Manila, 1902 to 1905.

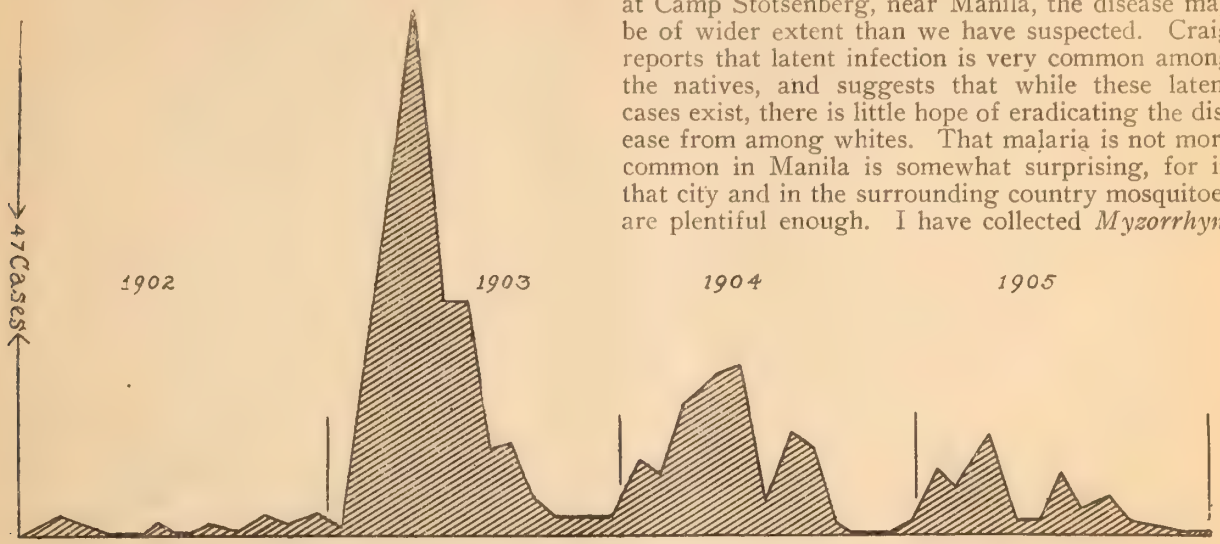


V. To show the plague deaths in Manila, 1902 to 1905.

virulent epidemic, while Herzog's were, for the most part at least, sporadic.

With pestis minor I have had no experience.

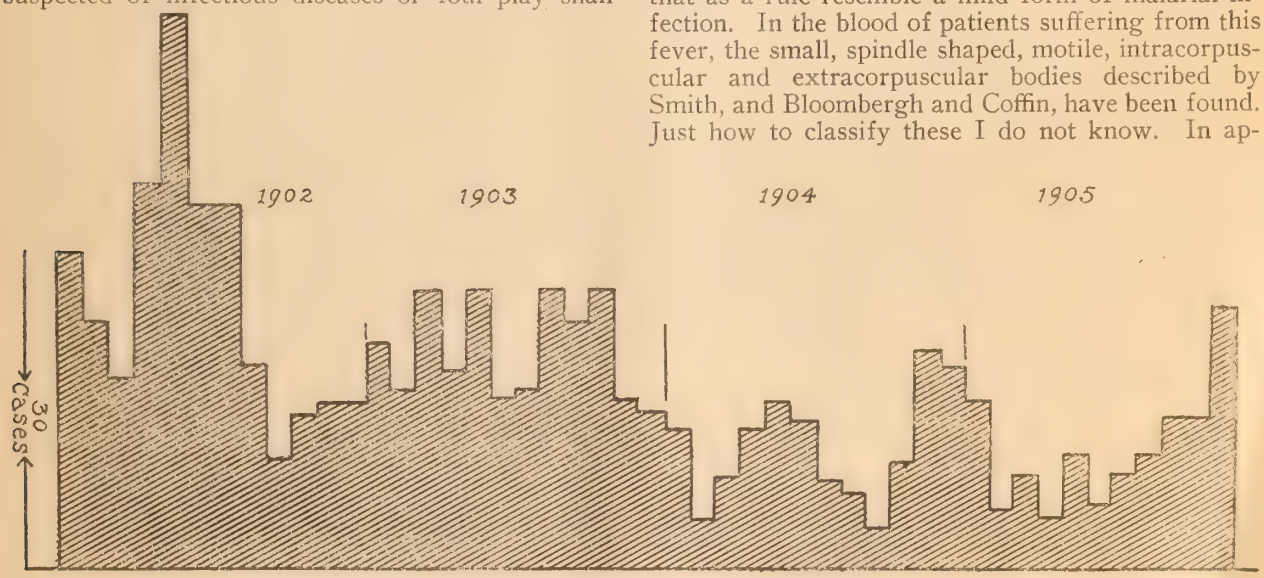
Cholera is another disease which, while endemic in the Philippines, occasionally assumes epidemic proportions. (See Chart VI.) While it is true that from time to time cases are recognized at the autopsy table, it is also true that in all probability, many cases escape detection, because of the fact that the bodies of persons dying in the cascoes and lorchas on the river are thrown overboard and are discovered too late to establish a diagnosis. Were it not for the sanitary rule that all bodies of persons suspected of infectious diseases or foul play shall be subjected to a post mortem examination, many cases of cholera and plague would escape notice. As is the case with plague, so also it is true of cholera, that few white persons suffer from it.



VI. To show the cholera deaths in Manila, 1902 to 1905.

Beriberi is ever present and from month to month causes a death rate which varies within but narrow limits. This disease is seen in all its forms, but rarely causes apprehension among either natives or whites. I have never seen an American affected with beriberi, although one such case is recorded in the *Army Records* for 1904.

Malaria is not, from our clinical experience, as frequent as we should expect, but judging from the statistics of its occurance in native troops, as depicted in Chart VII, and from the observations of Craig at Camp Stotsenberg, near Manila, the disease may be of wider extent than we have suspected. Craig reports that latent infection is very common among the natives, and suggests that while these latent cases exist, there is little hope of eradicating the disease from among whites. That malaria is not more common in Manila is somewhat surprising, for in that city and in the surrounding country mosquitoes are plentiful enough. I have collected *Myzorrhynchus varius, Muzomyia Eudlowii,* and *Myzomyia Rossii,* with some other species in my own house where they lived and throve. Beside the usually recognized types of malaria, tertian, aestivoautumnal, and quartan, there are many cases in Manila, (I have observed many in St. Paul's Hospital,) that as a rule resemble a mild form of malarial infection. In the blood of patients suffering from this fever, the small, spindle shaped, motile, intracorpuscular and extracorpuscular bodies described by Smith, and Bloombergh and Coffin, have been found. Just how to classify these I do not know. In appearance the bodies are remarkably like the ring bodies of the aestivoautumnal parasite. They occur, however, in the blood in the absence of crescents or other forms of the malarial plasmodium. This infection is, as a rule, readily controlled by quinine, though occasionally it is extremely severe and less amenable to treatment.



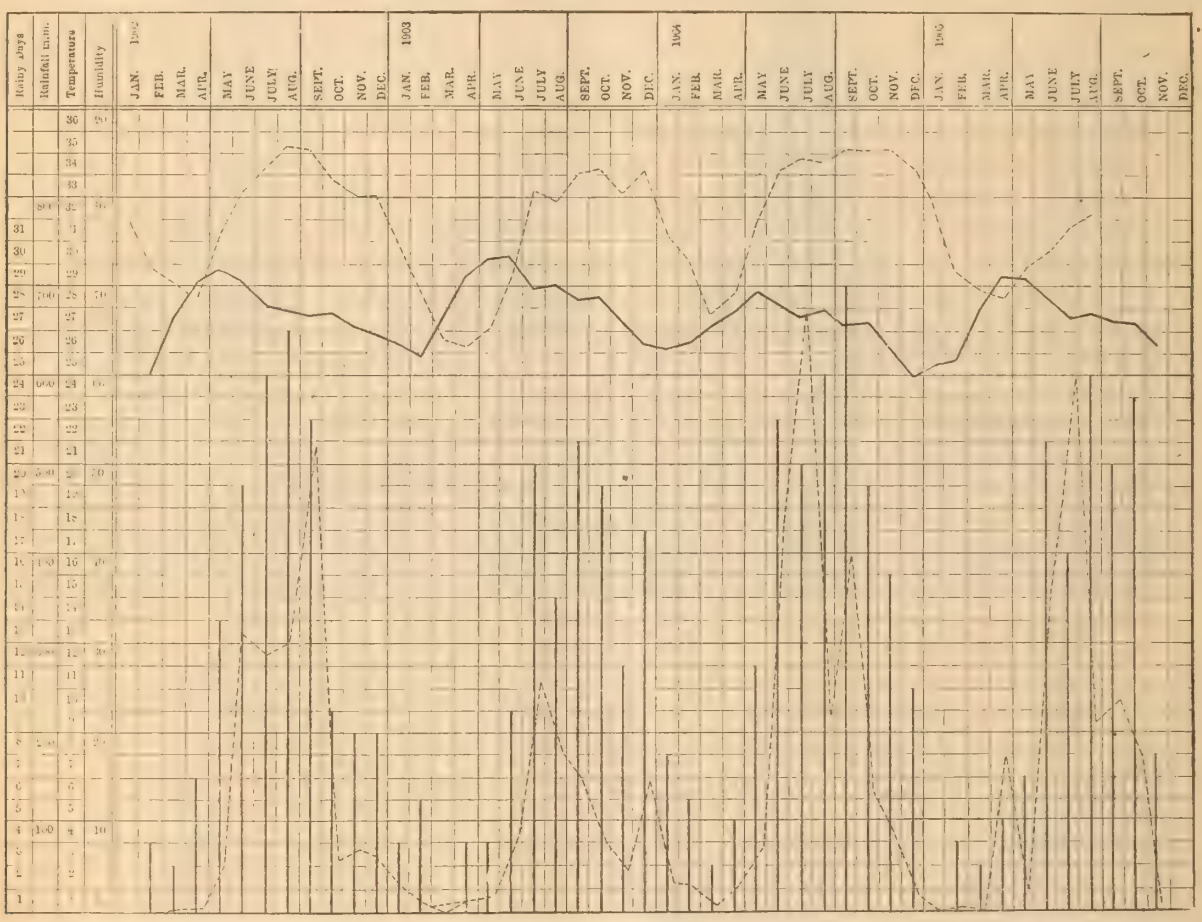
VII. To show the deaths (by months) caused by malaria, Manila, 1902 to 1905.

Cases of filariasis are few. Strong, Calvert,

Wherry and McDill, and Hare have observed cases. Calvert's were natives. That of Wherry and McDill was a Japanese. The disease is said to be more common in Iloilo.

Dengue is frequent and often epidemic. In connection with this disease, Stitt in Cavite has made some interesting observations, and reports that a differential leucocyte count may be a valuable diagnostic aid. He says "at first a large increase in the small lymphocytes is observed, then the appearance of a greater proportion of large lymphocytes, and in the final stages (at the time of the terminal rash and during convalescence) a most striking increase in the mononuclears." These blood changes with absence of a demonstrable protozoon, together with the leucopenia, and a diminution of the polymorphonuclears, Stitt considers the characteristics blood findings of dengue. He emphasizes the absence of the bodies of Graham and Eberle. He also believes that mosquitoes play an important rôle in the transmission of the disease.

Cases of splenomegaly are frequent. They are of two general types as regards temperature, one febrile, the other afebrile. In the latter group are cases of primary splenomegaly and other sorts seen in temperate climates. In the class of febrile cases are those indistinguishable from Kala Azar save that the Leishman bodies are not found. There are other cases of the febrile type in which the symptom complexes are combinations of those of the ordinary well known types of splenomegaly with those of Kala Azar. Cases of the febrile type Musgrave, Wherry, and I have reported, and one, a combination of Banti's disease and Kala Azar, I published. From this last case a polar staining, nonmotile, nonspore forming, nonliquefying, Gram staining, organism was cultivated from the spleen both ante and post mortem. This bacillus after injection into monkeys gave rise to a temperature the curve of which was similar to that of the human case. The study of this case led me to suggest that the presence or absence of a febrile course in cases of splenomegaly might be dependent upon the condition of the intestinal wall, which, because of its increased permeability in intestinal infections, allowed the transmission of toxines, bacteria or both, and that it seemed quite possible that in cases presenting like symptoms, different organisms might be active. All of the cases thus far reported from the Philippines have been native Filipinos.



VIII. To show the temperature, relative humidity, rainfall, and rainy days in Manila, 1902 to 1905. The upper part of the chart shows temperature in solid line, relative humidity in broken line. The lower part shows rainy days in solid upright lines, and rainfall in broken lines.

Skin diseases are frequent in Manila. Dhobie itch is extremely common. *Tinea imbricata* and *pinta* are frequent, and leprosy is widespread. Yaws, lichen ruber, lupus, phagedena, and various sorts of tropical sores have been observed. One case of phagedæna was studied in St. Paul's Hospital. It occurred upon the lesions of Raynauld's disease, and from it only the golden staphylococcus was isolated. Only a few cases of yaws have been observed. Strong and Bartels have studied some in

Manila, and I four in Benguet Province. Wherry has reported cases of cutaneous glanders that had been diagnosticated as variola. Tropical ulcers are frequent. Some of these resemble the so called Veld sores. In a case characterized by irregular and somewhat superficial lesions, Strong has described bodies resembling blastomyces, which he designates as turulæ. McDill and Wherry have reported cases of severe hand infection from which organisms resembling the Koch-Weeks bacillus were isolated.

Tumors in natives are not infrequent. Uterine fibromata and carcinomata, and ovarian cysts occur not infrequently in the hospitals. Simple goitres are frequently seen, and exophthalmic cases are not infrequent. I have seen one case of an ear tumor that resembled that known as the "Nepal ear tumor." The patient, a Chinaman, I could not keep track of, and he disappeared from observation.

Cretins are occasionally seen.

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A CASE OF TUBOABDOMINAL PREGNANCY SECONDARY TO AN INCOMPLETE TUBAL ABORTION.

By B. S. Talmey, M. D.,
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For the practising physician the report of one case of our daily practice showing unusual and interesting features is of greater value than a dozen pages of theory about such a case. For this reason it seemed to me that the following case with its unusual difficulties of diagnosis deserves to be known to the profession. We may then be better able, when called to a patient suffering from great abdominal pains, to take into consideration the possibility of an extrauterine pregnancy with atypical symp-

toms even in a single girl, and not always to think of the appendix.

CASE.—On the 28th of February at 10 o'clock in the evening I was called by two physicians to see in consultation a patient with the following history:

A month previous to the present attack the patient was suddenly taken ill with terrible pains in the lower abdomen compelling her to stay in bed. She had been always well and had never missed her menstruation, although the latter was lately irregular. Four physicians were called in, one after the other, and all seemed to have thought of some disturbance of the alimentary canal from acute gastritis down to the favored appendicitis, and treated the case accordingly. Under the influence of opiates and ice applications the pains subsided after a week and the patient was able to leave her bed,—though not her room. She continued to improve until in the morning of the 26th of February she felt so well that she began to prepare her clothes to go to a ball the same evening. While trying to take out a skirt from the closet and thus lifting her arms above her head, she was again suddenly seized with terrible pains in the lower abdomen and almost fainted. Her mother had to lift her up and bring her to bed. Two days later I was called in consultation by her two physicians.

Status Præsens.—The patient, a young girl of twenty-two years of age, single, is so pale and anæmic as to give the impression of having lost the last drop of blood. The pulse is extremely weak and rapid, about one hundred and thirty beats in a minute, the temperature is 102° F. The patient complains of great pains in the back and in the abdomen. The latter is quite distended, tympanitic and very sensitive to touch. Her menstruation having been lately irregular I decided to make a gynæcological examination. The sensitiveness of the abdominal wall and the rigidity of the muscles offered great difficulties to the combined examination. Still I could make out the uterus to be somewhat enlarged. The cervix was found to be soft to touch and flabby. The external os was patulous and open for the tip of the finger. In the left fornix a mass of the size of a goose egg and of soft consistency could be plainly felt, extending to the level of the line between the two spinæ anteriores superiores of the ilia. The touch of the tumor caused the patient great pain.

This condition of the genitals caused me to make the diagnosis extra-uterine pregnancy in spite of the history of the irregular two attacks with an interval of over a month. The patient was taken to the hospital the next morning and operated upon.

Operation.—At the opening of the abdomen in the linea alba I found the entire pelvis filled with clots and liquid blood, which I removed with both hands. Among the removed clots and blood I found an embryo nine centimetres long, poorly developed, and apparently dead for some time. The placenta of the size of the palm of the hand was found partly attached within the ampullar end of the tube, which was greatly enlarged and extended. The greater part of the extended placenta was found implanted on the intestines and on the parietal peritonæum. After having separated without difficulty the attachments between the placenta and the bowels I removed the tube and the ovary on the left side, packed the Douglas sac with iodoform gauze, and drained through the posterior fornix of the vagina. The patient made an uneventful recovery and was able to leave the hospital after three weeks.

Epicrisis.—The interesting feature in this case is the change of an original tubal gestation into the tuboabdominal pregnancy through an incomplete tubal abortion. The original tubal gestation of two months' duration was interrupted by the incomplete abortion which was the cause of the first attack. The part of the ovum remaining within the tube continued to grow for about four weeks after the abortion, the extruding part becoming implanted on the bowels. The evading villi crept out and gained visceral attachments without ever losing their hold on the tube. Hence at no time was the ovum cut off from its nutritive supply. The original tubal gestation thus turned into a tuboabdominal pregnancy. The second crisis occurred through the rupture of the amniotic sac four weeks later, the fœtus probably escaping through the rent in the amnion.

62 WEST ONE HUNDRED AND TWENTY-SIXTH STREET.

IS THE SUPPOSED EFFICACY OF QUININE IN MALARIAL FEVER MORE APPARENT THAN REAL?

BY ARTHUR C. JACOBSON, M. D.,
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"It is not only what we have inherited from our fathers and mothers that 'walks' in us. It is all sorts of dead ideas, and lifeless old beliefs, and so forth. They have no vitality, but they cling to us all the same, and we can't get rid of them." Ibsen, "Ghosts," Act II.

Sir Patrick Manson (*Tropical Diseases*, 1905) has said that "for the cure of the *clinical* manifestations of malaria quinine may be relied upon absolutely; but, unfortunately, it cannot be equally depended on for the eradication of the germ of malaria, and therefore for the prevention of relapse."

This distinguished observer and writer has further stated that malaria belongs in the class of self-limited diseases, the germ usually dying out in from one to two years. It would perhaps be more nearly correct were it to be said that the plasmodia ultimately succumb to the phagocytes. Laveran himself says: "With nothing more than good diet and rest one frequently sees the condition of patients with malarial fever change for the better; the anæmia diminishes, the relapses are fewer and occur at longer intervals, and a cure can even be obtained without the help of active medication."

The writer cheerfully concedes, without any invalidation of the thesis implied in the title of this paper, that quinine will check or postpone malarial paroxysms, and, if it be long continued in moderate but very frequently repeated doses, the blood being kept more or less saturated with it, paroxysms will not as a rule occur. That is to say, the plasmodia will be driven out of the blood stream and kept out so long as sufficient quinine is administered and absorbed. Their disappearance of course does not mean that the plasmodia have been destroyed, but merely indicates a sort of Fabian policy on their part. Upon the withdrawal of the quinine they reenter the blood, here again displaying the same policy by playing at hide and seek with the phagocytes, seeking refuge, and sustenance, when hard pressed, within the erythrocytes. Hence quinine is at best only a palliative; it is not curative, and it is certainly not a specific in any sense of the word.

Now we know very well from the studies of Binz, Cohnheim, Baxter, Cutter, Martin, Jerusalimsky, Kerner, Hare, Disselhorst, and Scharrenbroich that diapedesis and emigration on the part of the leucocytes are checked by quinine; that is to say, *there is a paralysis of the leucocytes.* The more quinine the more paralysis. It is essentially a

poison to protoplasm. The amœboid movements are arrested by quinine in even so small a proportion as 1 to 20,000 (Hare). When the plasmodia reenter the blood, they having escaped cinchonism, or been but slightly damaged, they find their natural enemies enervated, paralyzed, and in some measure destroyed, the observers quoted before having proved that animals poisoned with quinine show a marked reduction in the number of leucocytes. It is perfectly obvious what the almost inevitable result will be: angry reprisals on the part of the plasmodia, evidenced as unchecked segmenation.

This, then, is the explanation of the frequently observed occurrence of malarial paroxysms after the administration and withdrawal of quinine in patients having plasmodia in their blood. Among the foreign observers who have observed this phenomenon are Koch, Otto, Brettas, Robertis, Karamitsas, Canellis, Tommasselli, Muscato, Carreau, Pampoukis, Chomatianos, Plehn, Rizopouloo, Guyochin, Monneret, Rivet, Dasset, and Cachère. A striking instance is reported in the *Lancet* of September 22, 1906, by A. D. Ketchen, in which the administration of quinine, ranging in dose from three quarters of one grain to 20 grains, was followed on four different occasions, between April 23 and May 8, by severe paroxysms, the temperature reaching 104°F. In America a number of southern physicians have reported similar instances (R. S. Williams, D. R. Wallace, W. P. Barton, W. H. McLean, E. D. Daniel, W. P. Hart, B. Lewis). Under the article Quinine, in Gould and Pyle's *Cyclopedia of Medicine and Surgery,* will be found a very suggestive comment on this subject. S. O. L. Potter, in his *Materia Medica,* remarks that large doses of either the powdered bark or of quinine itself have in many well authenticated instances induced well marked febrile paroxysms, beginning with chill, then fever and headache, and gradually subsiding in slight perspiration. This, he says, will never happen in a healthy person. The patient must be a malarial subject.

Stephens and Christopher have noted the sequence. Culbreth speaks of chill and fever paroxysms induced by large doses. Potter alludes to the daily exacerbations of temperature caused by long-continued use. Profesor Robert Koch considers the use of quinine as a prophylactic dangerous practice in certain parts of the world and responsible for an increased death rate, yet apparently he has every faith in its therapeutical efficacy. Ringer clearly describes how quinine masks paroxysms when he writes: " . . . quinine may check all the symptoms, even the periodical elevation of the temperature, and yet about the same time of day that the series of symptoms were wont to take place, an increase in the urea and urinary water may occur, just as during a severe paroxysm."

Most observers had their attention arrested by the fact that hæmaturia or hæmoglobinuria occurred in many of the cases, and this phase of the subject enlisted all their attention, the main issue being overlooked. Many ascribe the hæmaturia to hæmolysis and to the irritating effects of quinine upon the passive congestion or mild diffuse nephritis which has been described by Atkinson, Thayer, and Hewetson as occurring in many cases of malarial infection. All of the patients reported took quinine before the paroxysms and hæmaturia occurred, and this sequence is always noted, yet the reporters seem to regard the paroxysms as incidental to rather than directly consequent upon the administration of the quinine, inevitable seizures, as it were, during which the quinine which has been taken, and which perhaps is still kept up, exerts its deleterious effects upon the congestion or nephritis which is secondary to the malarial infection, the hæmaturia resulting therefrom.

E. D. Daniel, ex-president of the Alabama State Medical Association (*Medical News*, XLIII, p. 561, 1883) has reported 178 collected cases of malarial hæmaturia of which number eighty-five patients were treated with quinine with a mortality of forty-one per cent.; ninety-three were treated without quinine with a mortality of eighteen per cent.

It is the writer's belief that the kidney damage which may follow artificially induced paroxysms of malaria is apt to be of a higher grade than that following the usual kind, because of the crippled condition of the leucocytes. Cinically, the paroxysms under such circumstances would not necessarily be attended with very marked manifestations, such as high fever, etc., since phagocytosis would be feeble and cytophagous reaction against the plasmodial toxine consequently less marked. This throws light on the fact that if quinine used as a prophylactic fails to prevent the disease, those attacked will suffer less severely than the "unprotected." So they will, but the actual damage will be just as great.

Hæmolysis must be favored by quinine because of the full sway of the plasmodia in the presence of leucocytic paralysis. This increased hæmolysis, when coincident with the renal irritation, constitutes with the latter the determining factor of hæmoglobinuria.

The reason why the artificial induction of malarial paroxysms, after the taking of quinine by malarial subjects mayhap for "colds," grip, etc., is not more frequently noted, is because the real significance of the sequence is overlooked. Even in the hæmaturia cases the professional mind has engrossed itself in only a partial contemplation of a phenomenon which should be viewed as a whole. Moreover, as has been pointed out, the paroxysms are apt to be apparently mild and hence not specially noted.

The uselessness of quinine in the chronic malarial cachexia is generally recognized. Its liability to cause blindness and deafness when given in large or long continued doses is well known.

It will be the simplest matter in the world for trained pathologists and clinicians to prove or disprove my hypothesis. As a matter of fact there are already enough data in the literature to substantiate it. The acceptance of Metchnikoff's theory of negative chemotaxis does not materially affect the validity of the hypothesis, if in fact it cannot be invoked in its favor.

Personally, I have observed two cases in point, both occurring in the persons of physicians well known to me. In one the observation was made several times. "Prophylactic" doses in the spring

and fall invariably induce paroxysms. In the other case the observation was made only once, about three months ago. Some one, of course, may be safely depended upon to ascribe these and all similar cases to that palladium of our ignorance, idiosyncrasy.

If these things be true, what are the practical conclusions?

First, we would still have in quinine a valuable diagnostic aid; second, we should place our main reliance upon those remedies which, during the intervals which ensue between recurrences, have been shown to possess slow but sure curative properties, e. g., arsenic and splenic extract.[1] The reenforcement, not the paralysis of the leucocytes should be sought, as by sea voyages, sunlight, open air life, exercise, nourishing food, sanitary homes, and, most important of all, sane prophylaxis (as regards the *anopheles*); during acute paroxysms symptomatic treatment of the chill, fever, and headache.

The absolute withholding of quinine during acute malarial attacks will expedite *ultimate* cure. Instead of the disease process being merely held in check, the plasmodia at bay—a result attained at the cost of leucocytic paralysis—Nature is given a chance to fight her enemies in the open, unsubjected to a galling cross-fire from her own alleged allies. It is about time that we found some means of delivering ammunition to the phagocytic soldiery other than by enfilading them in the vascular trenches.

Malaria was reduced by the Italian Red Cross Society from thirty-one per cent in 1900 to 5.1 per cent. in 1905. These results were accomplished by quinine (so say the reports) *plus the use of wire nets.*

The imperial commission of Austria has brought about a malarial decline of 62 per cent. during the past two years, mainly by the use of measures directed against mosquitoes.

It is interesting to note that Hahnemann, the founder of homœopathy, was led into the fallacy of concluding that quinine occasioned symptoms *like* those of malaria because of a personal experience. In his case large doses of cinchona produced in a few days well marked symptoms of ague (of course it was actual ague). Therefore, he reasoned, cinchona cures ague because it induces symptoms in a "healthy" person similar to those of ague. "The paroxysm," writes Hahnemann, "always lasted two or three hours, and reappeared when I repeated the dose, but at no other time. I omitted it and was well."

Upon this experiment Hahnemann based his entire platform of *similia similibus curantur.* "This," says C. Wesselhoeft, himself a homœopathist, "was the only experiment Hahnemann ever made in order to establish his dogma." (*Hahnemannian Monthly,* August, 1896, p. 499.)

It is no wonder that a drug should have come to hold the transcendent place of this one which so masks, temporarily, the acute symptoms of a disease, which has such an enormous amount of capital concerned in its continued exploitation, which has such a romantic history, and which has so completely enthralled both the lay and the professional mind with its alleged magic. No single theological dogma has commanded more consistent homage, on the part of believers, than the medical profession, rank and file, has accorded to quinine. Whether they who deny its virtues and affirm its dangers, or they who continue to pay their devotions at its shrine, are the real heretics, time will surely determine.

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[1] Careful observations covering a number of years have satisfied Carpenter that the effects of splenic extract in acute malaria were fully equal to those of quinine. (*Medical Record,* August 4, 1906.) Its use is thoroughly rational and its action really curative. Carpenter deserves great credit for his original work in this field. A sincere believer in quinine, his contribution cannot be challenged on the score of prejudice.

A CONSIDERATION OF THE SENILE STATE AND ITS TREATMENT.*

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A consideration of the senile state is certainly worthy of our attention. While medical literature teems with articles and treatises devoted to a variety of subjects, it would seem that there is a paucity relating to the matter to which I invite notice, and it almost appears that this subject is one of the very few barren fields which have escaped the invasion of the ever eager searching specialist. Why it should be deemed less paramount than a study of the diseases of infancy, or the adult state I am at a loss to understand, except for the reason, that, strange as it may be, our knowledge concerning the manifestations of human life, between that stage or period designated as turning time and old age is rather restricted. That the standards of longevity concede a high value to existence at the time to which I refer, all will doubtless concede. Withal it has not thus far lured the original investigator and clinician to that close and astute observation which its richness of material, and facts hold forth, as likely to yield an amplitude of developments that are as vital as any subject in the domain of our profession.

In the brief time alloted to me, my utterance is necessarily restricted and I can only treat the question in a very cursory manner. Hoping under more favorable auspices, to be able to present a few facts which I have been able to collect, and which have a bearing on that time of human existence, which represents a physical culmination of the highest attainment of the human being in its decline to the inevitable.

What are we to understand by the senile state? Excluding those youthful subjects who by reason of sickness, and a variety of causes have reached a stage of involution prematurely assimilating it, I should say: It is a decline of the system, possibly due to tissue waste and a failure in the compensatory vital powers with faulty inherent tendencies. It might be proper in this connection also to refer to those wonderful cells which the physiologists designate as macrophagi which devour the contractile tissue of the muscles, whiten the hair, invade the osseous matter, kidneys, liver, etc., and aid with other cells in the general metamorphosis. Or after all in lieu of a

* Read at a meeting of the East Side Physicians' Association of the City of New York, April 20, 1906.

more positive certainty of being able to demonstrate an unexplainable toxine due to a chemical fermentative process. May we not with good grace, take as a starting point in the process of decay that undoubted manifestation, termed arteriosclerosis, which clogs the circulatory apparatus, prevents a proper oxygenation of the blood, and brings us face to face with the inexorable law of progressive decay. In other words, it is Nature's descent, aided by the forces generated in the body itself, producing chemical reaction, giving rise to destructive elements, which invite structural changes, and by so doing arrest development, promote a pathological trend and so impair the vital functions and reduce in this way the human mammal to its original organic and inorganic elements.

I do not propose to avail myself at this juncture of some of the very interesting statements that have been so ingeniously interjected, relative to electrical force and correlative influence, which a learned servant claims has much to do with a state of being, and which might serve in a way to guide us to a more tangible point if such were necessary. Rather would I ask you to view some consecutive facts, and hold up to your gaze some incontrovertible anatomical truths. For example, permit me to present the subject, male or female, in the state to which I refer.

The most striking feature is that of atrophy. Of this, there may be various grades and forms, for in contradistinction to the general belief not a few have an increase of adipose tissue, though as a rule there is a loss in weight. We have all become familiar with the changes wrought in the generative organs, the altered state of the digestive apparatus, with its glandular annexa, the final disappearance in some cases of the lymphatics, teeth loosened and falling out, and an almost complete obliteration of the capillaries, with a shrinkage that plays an important part in our general make up and appearance. Studying this characteristic and wholesale degeneration or atrophy we are brought face to face with certain anomalous features. For example, in the male most prominently stands forth that bane of existence, a thickening of the fibromuscular portion of the prostate. Going still further, we come to the calcareous and fatty formations, with pigmentary influxes. Here, again, the same issues are the basis of a causative influence, viz., deficient nutrition.

In fact, the question of fatty degeneration has afforded the pathologist an unlimited field on which to thresh out innumerable theories, these again to be controverted, and hence I shall simply pick out a few facts as relative to my present disquisition.

Firstly we must bear in mind that the granular fatty matter which interests us now, is an abnormal change, at least, so it appears to me. I know of no better place to demonstrate this invasion than the cornea itself, after that the heart, notably its muscular substance, and the tubules of the kidneys, also evidenced in parts by the central nervous system, while the liver is so affected that at post mortem examinations I have often after removing that organ sliced off a piece, and placing it in water, noticed it would float in consequence of the fat it contained. But study the whole question from any standpoint we are led to the rational deduction, that in the senile state there is an interference with nutrition, and as before noted with the process of oxidation. In short, it is a veritable "nocrobiosis," or death in life. Here, then, is fruitful evidence why there is a diminished functional power, notably in the muscular parts of the heart and in the kidneys.

Digressing somewhat I would now refer to a very evident and interesting change that fairly comes under the head of arteriosclerosis, which is casually traced to metabolic depreciation, in which senility plays an important part. Much as it has been discussed, I am afraid it is rather difficult to explain it in toto. There must, of necessity, be much that is conjectural. From its resultant efforts we have types of angina pectoris, a type of Bright's disease as a final cerebral thrombosis, an assimilation of tabes, or posterior spinal sclerosis, gastric, hepatic, and other troubles, too numerous to mention, all of which are now attracting considerable attention.

Another interesting factor in the senile state is the frequent evidence of anæmia, and this can easily be accounted for if we study the peculiar changes which take place in the blood. For we must bear in mind that, while certain appearances would point to that condition, this alone is not a safe guide. The colorless, blanched cheeks and pale lips and conjunctiva are by no means an infallible indication any more, than the bright hue which is so often in evidence. But an examination of the blood, barring accidents, furnishes all the proof necessary. Thus we may have a deficiency in red corpuscles, in hæmoglobin, or both. And here, again, is the same proposition, that as a rule in anæmia of the senile state this condition invariably is secondary to some local disturbance of the system, and represents another phase of malnutrition. I do not believe that a blood count or hæmoglobin percentage sheds any light on the victim of senility as an operative factor, any more than slight leucocytosis, which might be traceable to some incidental or accompanying ailment. For we must not lose sight of the fact, that with hardly any exception those who have reached the advanced state of life to which I allude, invariably have run the gauntlet of a multiplicity of ailments and accidents, at some time or another, involving one or more of their organs, leaving as an aftermath thickening, induration, adhesions, and what not beside. And it is the rule rather than the exception that it is this faulty member of the human mechanism, which when the crisis comes, is called up for a little extra spurt, so to speak, is invariably found lacking and so unable to respond to its normal fulfillment, or strain, that the disorganized machinery gives out. This we see daily in the heart, despite its wonderful compensatory power, then again in the kidneys, and so I might go on ad libitum.

Now it is a fair proposition to ask what is to be done under the circumstances. We certainly cannot make people younger. But it is within the range of possibility to help them grow older.

From what I have said it must be plain that

any plan of treatment to prove beneficial must aim to regenerate and vitalize waning functions, to goad on tardy organs, promote assimilation, and so nourish the starved and impaired processes, as to give a proper or normal physiological reaction, if that be attainable; and strange as it may seem, that happens more often than would appear.

The victims of senility pass through the throes of the much dreaded acute and infectious ailments. With amazing success, fractured bones unite wonderfully well. Incidentally, despite the patient's burden of uric acid or glycosuria, or of a bladder with reeking ammoniacal phosphatic urine, vaginas filled with old fibroids, which keep on growing, hearts which have a murmur, and whose valves are loaded with atheromatous deposits, gallstones which increase in number, and countless other pathological attributes too numerous to mention, the senile patient is invariably able to report, despite many drawbacks, as being on hand.

It seems that there is much that can and must be done to help Nature. Firstly, by being careful not to put any obstacle in the way of it throwing off effete material, or that which it would eliminate, or halting its purpose in the discharge of detrimental waste product, when there is a disintegrating surplus.

The ancients understood well the importance of looking after the cutaneous surface, and keeping it free and clear. And I shall offer the novel suggestion of exposing the wholly unclad body to sunlight and air, not cold, but at the temperature of the body or some degrees above it, the exposure lasting for at least an hour at the time, in the meanwhile adding an inhalation from time to time of oxygen. Following this with a gentle friction or rubbing, then donning some clothing, allowing the patient to sit in the sun, if the rays are too powerful shielding the exposed parts by some screen. While I hold aloof from an endorsement of that lately vaunted specific for the cure of malignant growths called liquid sunshine, I do urge that the importance of Nature's sunshine and light as a remedial measure has hardly been sufficiently estimated.

In a little hamlet not far from the city of Naples and Sorrento I was interested watching some old men and women, in an excellent state of health and preservation, who were given to this practice, and lauded it above all things, besides which they made generous use of the beautiful oranges which abounded in the locality, and partook freely of the famous olives and oil made from them, the product of the well known and famous olive groves of ancient Sorrento. When they practised in a crude way, might be improved on in method, but the results, I am sure, would be equally satisfactory.

In our climate where there are so many changes it behooves us to bear in mind that a general exposure to a frigid atmosphere or low temperature is injurious to old people, causing a congestion of internal organs and stasis of blood.

Gentle friction or manipulation of the body also has its beneficial effects if not overdone, particularly in those who have a tendency to constipation, and this is most commonly met with in those who are senile. Bathing is of inestimable value, despite the fact it is but too often decried. A warm bath at night before retiring and a sponge off with alcohol and water in the morning are most exhilarating and refreshing. To quote an old adage, "Water within and water without will much aid health and keep out gout."

Some stress has been laid on the necessity of heat and warmth for old people. While they are very susceptible to cold, care must be exercised not to keep them in an apartment with a temperature over 70° F., and a current of fresh air should percolate through dwelling and sleeping apartments day and night, when occupied by them, with a full ratio and standard as a minimum of 400 cubic feet of air per capita.

I cannot too strongly urge the significance of exercise, which should not overtax their strength. Walking if possible should be encouraged, morning, noon, and afternoon, on a level surface. If in the open they should be sheltered from northeasterly winds; if in a park, it is well to go a short distance, rest awhile on a seat or bench, and resume the walk; then rest again, so as to avoid undue strain or effort. Climbing steps is to be avoided.

Calisthenics of a mild character are quite in order and of benefit, particularly those which raise the arms and hands over the head, repeating the exercise. This movement aerates the lungs, lifts the diaphragm, favors inhalation and exhalation, and aids peristalsis.

Clothing should be of a kind to impart warmth, regulated according to the seasons. Appreciating the flaccid, attenuated state of the abdominal muscles, and their duty as a covering and stay to the bulging viscera they support and restrain, a belly band is of advantage and serves the double purpose of holding the parts in place and imparting a certain amount of heat and fixature to the abdomen, besides steadying the thorax and trunk of the body. The simpler these coverings the better they are, except in cases of hernia. When this latter does not exist, they are a wonderful protective in cases of cough or straining at stool in preventing a rupture. They are best made of Shaker flannel of various thicknesses, according to the weather, or else unbleached muslin, and fastened with safety pins in front.

While dementia is occasionally an accompaniment of the senile state, it does not follow that all who are senile have an impaired mentality. Possibly one of the best ways to ward off such a catastrophy is, besides other measures, to keep old people in a happy, cheerful frame of mind by providing agreeable society and surroundings, attractive and diverting amusement.

Lack of mental occupation doubtless invites an anæmic condition of the brain, and I care not how trivial the employment or task may be in which the person is engaged, which should be of a nature commensurate with their strength and ability to discharge, it promotes a free circulation of the blood through the brain. It is vitally essential for this reason and many others besides, that a normal activity of this organ should be favored if we would avert paresis or some of the many

forms of insanity which assail but too often those of advanced age.

It is a common idea that in the condition to which I refer, a great deal of sleep or rest is absolutely necessary. Some urge not less than nine hours. While a certain amount of rest is essential to the well being of many, I am not so sure that everybody is built on the same lines, or that two or three hours less will not amply fill all requirements, if not doing much better. Too much rest, I am convinced from actual observation, is very often harmful.

In this connection, like the policeman addressing the crowd, I would exclaim: "Keep moving on," do not let any one of the organs halt too much lest they invoke the habit, and become sluggish, which circumstance might be apt to beget a thrombosis or embolism, to be followed by an apoplexy or paralysis.

Descending from the upper to the lower extremities, we face that concomitant of age, namely, constipation. Those who treat this class of people know full well the series of ailments which this begets. Physiologically a determination of blood to these parts is readily understood. Our anatomical construction favors it. Add to this weakened or impaired muscular contractility, a sluggish liver, and you have a reason why the veins and bloodvessels dam up. Fæcal matter accumulates, and congestion of every organ in the body ensues, sometimes leading to a very serious state of affairs. Or as it sometimes happens, a condition of enterocolitis is started, or perhaps a poisoning of the whole system from a restrained mass in the bowels. With these pressing indications, or any one of them before us, our duty in the matter is very evident.

Perhaps it is well to state that a diet is first of all to be favored, with some uncooked milk with a little sodium bicarbonate, two or three times a day. Figs, dates, and prunes stewed and taken before going to bed, cold or hot water in the morning, orange juice, apples cooked or raw before breakfast, oatmeal, hominy with molasses, etc. To go into detail as to the various medicines that might be used to favor catharsis or to enter in a discussion, or furnish a treatise, no matter how brief on the general subject of constipation, is no part of my purpose at this time, however pertinent it might be, as it would mean a trespass on both your attention and the half hour allotted to me. A reference to diet and food is certainly paramount, and a subject well deserving of much thought and study in connection with a consideration of the state which I have brought to your notice this evening.

We must all realize, after what I have said, that there is a very evident lack of nutrition underlying every organ and function, an impairment of the vital force resulting, and viewed from any standpoint. It is this factor alone which dominates the situation. To be plain the digestive fluids are deficient, as before stated the muscular power of the alimentary canal is very much below par, and a general atony is evident, added to this are enfeebled efforts at mastication and inability to properly discharge the physiological functions, even in preparing the food after it enters the mouth for its subsequent passage through the œsophagus, stomach, etc. This will perhaps explain why we meet with so many cases of atonic dyspepsia. In the matter of teeth our friends, the odontologists, have done much to better matters. But with all their skill they sometimes score a failure, for the old stereotyped reason that Nature and the buccal orifice do not take kindly to any foreign body, and the discharge of the salivary and other glands, so necessary to the primary process and mechanical division of the food is halted at the very start, the important first stage of the work of digestion.

I believe you will agree with me that in studying the diet item, we must be careful to regulate the food to the requirements of the patients and their state of health. We are told, and not without some degree of reason, that in order to meet the demands for sustenance, there must be certain alimentary principles in the food we take, to properly keep us going, notably nitrogenous principles, fats, carbohydrates, etc., which are nonnitrogenous, the saline matters, and water, which represent the inorganic materials. Whatever may be said to the contrary, it is a very fair inference as well stated by many and observed by Pavy, that nitrogenous principles contribute to the growth and nutrition by the various bodily textures, and furnish the active agents of the secretions. They also undergo resolution in the system into urea, which is excreted and a complementary hydrocarbonaceous portion, which is susceptible of application to force production. They are thus able to fulfill the organic portion of an aliment. The hydrocarbons or fats are applied to the production of heat and other forms of force, they also aid tissue development and its adipose parts. While gum, starch, and sugar which come under the nomenclature of carbohydrates, contribute to the formation of fat, and indirectly force production. The value of milk briefly cited consists in its power as an alimentary article to supply principles in each of the groups which I have before mentioned.

Without going into further detail, I will simply speak of alcohol as a chemical proposition intermediate between the fats and carbohydrates. But I do wish to say in this connection, I hold that a glass of good wine, whiskey, or brandy administered in moderation, and with a due regard for the exigency, or its requirements, is of great value in the senile state, and I know of nothing that can equal it or take its place.

Muscular and nerve force are produced by the assimilation of nitrogenized as well as nonnitrogenous substances. Whether animal food and fats impart those solid constituents which add to muscular strength and vitality better than a subsistence on vegetable substances, is quite debatable.

But I commend, generally speaking, meat thoroughly cooked, its essences, white beans, eggs, etc., as affording good nourishment, and I take occasion in this connection to state we should not overload enfeebled stomachs and a vitiated digestion with an excess of starchy food and substances which more often act as foreign bodies than anything else. Please bear in mind that the

meat of certain nuts, notably the peanut, the cachou nut, hickory, walnut, and other varieties, with a moderate quantity of salt, are invaluable, being rich in oil and fats, and if eaten slowly, when the stomach is in a receptive condition, quite nutritious. Certain fish boiled, broiled, or baked in a plain or simple manner are quite useful adjuncts in the way of providing a change in the food given.

We must ever bear in mind that the salivary, gastric, pancreatic, hepatic, and intestinal glands are more or less impaired, and unable to functionate in a normal manner. The proteids are very often imperfect, not easily absorbed by the blood, the same remark applies to the peptones. The same may be said of the bile and pancreatic juice in acting on the fats. In short, the whole wonderful chemistry of our system, so intricate and perplexing, is often, owing to some trivial cause, side tracked in a manner to upset our poise and balance.

To go into detail of the disarrangements that are the outcome of worn out human machinery, would call for a comparison with normal standards so far reaching as to demand a great deal of time. I have presented a few items in a very prefunctory way, haphazard, simply touching some parts of the outer crust of a vast subject. The senile state is a condition, and yet where can you find any mechanism of human construction that will stand the wear and tear of the human being for the same length of time?

From time immemorial alchemists and philosophers have pondered over the question of extending the allotted period of life. The fountain of perpetual youth is still unfound. But if we bear in mind that the strands of existence grow weaker the longer we live, and organs give out under the wear, tear, and strain, it is well to bear in mind that we have not yet learned the secret of supplying them with nutrition, and so keeping them up to the standard of their task. That problem once solved perhaps we shall be able to ward off senility and enjoy a still greater longevity.

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PEPTIC ULCER OF JEJUNUM, FOLLOWING GASTROENTEROSTOMY, FOR PERFORATING GASTRIC ULCER.

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Historical.—The first case of peptic ulcer of the jejunum was reported in 1899 by H. Braun (*Verhandlungen der deutschen Gesellschaft für Chirurgie*, Berlin, 1899) before the Congress of Surgeons in Berlin. He described a case of fatal perforation of jejunal ulcer, following a gastroenterostomy for pyloric stricture. In France the first case was reported by Quénu, in 1902, (*Bulletins et memoires de la Société chirurgicale*, Paris, 1902, page 250). In England the first case was reported by Mayo Robson in 1904 (*Annals of Surgery*, 1904). According to Tiegel (*Mitteilungen aus der Grenzgebieten der Medizin und Chirurgie*, xiii, page 909, 1904), the ages of the patients varied between four months and fifty-nine years, the majority being over thirty years.

The disease is more apt to affect males in middle and old age. In thirty-one cases previously reported there are twenty-nine males and two females. The time elapsing between the first operation and the formation of the ulcer of the jejunum varied between ten days and eight years. In the majority of cases the interval was from two to six months. In the twenty-eight cases where gastroenterostomy was done and in which the method employed is stated, there were fifteen by the anterior method, four by the anterior method with enteroenterostomy, one by the Y method, seven by the posterior method, and one by the posterior method with enteroenterostomy. Our case adds one more to the number by this last method.

Clinically, these cases can be divided into three groups, the first two recognized by Tiegel, and a third added by Gosset (*Revue de chirurgie*, 1906). In the first there are no premonitory symptoms or very indefinite ones, the patient often feeling perfectly well, and eating and living as formerly, until suddenly seized with violent abdominal pains and the other signs of perforative peritonitis. There were eight cases of this in the thirty-one cases reported, six ending fatally. In the second form, after varying intervals of freedom from pain, the patient begins to have symptoms similar to those of the previous stomach ulceration. Pains of variable intensity which come on at meal time or two to three hours after it, are generally noted in the stomach area, radiating from the left border of the ribs downward toward the navel. In some cases food aggravates these pains, in others relieves them. In the region of the upper half of the left rectus there can often be made out a painful infiltration of the abdominal wall, sometimes a well defined tumor. Twenty of the cases reported belong to this class. The third form, described by Gosset, is characterized by the fact that the ulcer adheres to and opens into some other segment of the digestive tract, generally the transverse colon. Four cases of this have been reported (Czerny, Kaufman, Gosset; Cases XIX, XXVII, XXX, XXXI). The history of these cases is that after a lapse of time the patient again shows ulcer symptoms, and communication is established with the colon. Then appear the typical symptoms of diarrhœa, rapid emaciation, fæcal vomiting.

Diagnosis, Prognosis, and Treatment.—In the first form the diagnosis is practically impossible, and the prognosis bad. Treatment consists in prompt operation. Goepel saved a patient by suspecting this condition. In the second form, the physician who remembers that the patient has had a gastroenterostomy done, and that a return of stomach symptoms has taken place, should think of the possibility of a jejunal ulcer, and watch the stools for blood. Tiegel speaks in favor of medical treatment for this form of the disease, which has given the best results, the liability of the ulcer to recur, and its tendency to poor scar formation being a disadvantage in the surgical treatment. In the third form recurrence of the pain, diarrhœa, fæcal vomiting, and a rapid emaciation give the clue. The only treatment for this class is operative.

No.	Authority.	Age and Sex.	Clinical Conditions.	Gastric Acidity.	Procedure Employed.	Time Elapsing after Gastro-enterostomy.	Lesions Existing.	Treatment.	Results.
I.	Braun, 1899, *Kongressbericht*, 1899, II, p. 94.	Male 25 years.	Very marked stenosis with great dilatation.	Normal.	Posterior gastroenterostomy November 17, 1897.	11 months.	Ulcer loop, 1 cm. below gastro-enterostomy; peritonitis.	No operation.	Death.
II.	Hahn, 1899, *Kongressbericht*, 1899, p. 74.	Male ?	Stenosis of pylorus.	?	Anterior.	12 months.	Ulcer loop, 1 cm. below opening: perforated peritonitis.	No operation.	Death.
III.	Mickulicz, 1899, in Tiegel, *loc. cit.*	Male 32 years.	Stenosis, stomach much dilated.	+	Anterior, September 2, 1898.	16 months.	Ulcer at anastomosis' level; adherent to abdominal wall.	Five operations and final gastroenterostomy.	Cure.
IV.	Körte, 1900, *Kongressb.*, p. 137.	Male 30 years.	Stenosis, stomach dilated.	+	Anterior, February 23, 1897.	3 years.	Perforated peritonitis.	Laparatomy, March 20, 1900.	Death.
V.	Steinthal, 1900.	Male 44 years.	Stenosis of pylorus.	?	Posterior with Murphy button	10 days.	2 ulcers ascending loop, 2 descending; peritonitis.	No operation.	Death.
VI.	Mikulicz, 1901, in Tiegel, *loc. cit.*	Male 25 years.	Stenosis of pylorus, stomach very large.	+	Anterior with enteroanastomosis, July 27, 1899.	18 months.	Ulcer adherent abdominal wall, lying on ascending loop.	Excision ulcer, suture jejunostomy ascending loop.	Cure.
VII.	Quénu, 1902, *Bull. et Mém. de la Soc. Chir.*, Paris, 1902, p. 250.	Male 29 years.	Stenosis of pylorus and great dilatation of stomach.	+	Anterior, with button, July 21, 1897.	4 years.	One ulcer adherent to wall.	Resection ulcerated loop; gastroenterostomy, Y method	Cure.
VIII.	Kocher, 1902, *Kongressb.*, p. 108.	Male	Ulcer of pylorus.	?	Y method.	1 year.	One ulcer adherent to wall.	Excision.	Cure.
IX.	Heidenhain, 1902, *Kongressbericht*, 1902, p. 108.	Male adult.	Stenosis with hæmorrhagic ulcer.	?	Anterior, 1898.	Some months.	One ulcer at anastomosis.	Suture; recurrence months later: new laparotomy, suture gastroenterostomy.	Cure.
X.	Goepel, 1902, *Kongressbericht*, 1902, p. 108.	Male ?	Stenosis with dilatation.	+	Anterior.	13 months.	Ulcer two or three cm. below perforated peritonitis.		Death.
XI.	Goepel, 1902, *Kongressb.*, p. 108.	Male	Stenosis with dilation.	+	Anterior.	4 months.	Perforated peritonitis.	Prompt operation.	Cure.
XII.	Goepel, 1902, in Tiegel, *loc. cit.*	Male 34 years.	Stenosis with dilatation.	+	Anterior.	9 months.	Perforated peritonitis.	Prompt operation.	Cure.
XIII.	Krönlein, 1902, *Kongressbericht*, 1902, p. 110.	Male ?	Peptic ulcer of duodenum induration of head of pancreas.	?	?	4 years.	One ulcer adherent to wall.	Excision.	Cure.
XIV.	Mikulicz, 1902, in Tiegel, *loc. cit.*	Female 2 months.	Congenital stenosis.	+	Anterior with enteroanastomosis, November 27, 1900.	3 months.	Perforated peritonitis.	No operation.	Death.
XV.	Hahn, 1902.	?	?	?	Anterior.	?	One ulcer adherent to wall.		Cure.
XVI.	Hahn, 1902.	Male	?	?	Anterior.	?	Ulcer adherent to wall.		Cure.
XVII.	Czerny, 1902, *Beiträge für klinische Chirurgie*, XXXIX, p. 98.	Male 59 years.	Stenosis of pylorus.	+	Posterior with suture, 1893.	9 years.	Ulcer at level of anastomosis.	Excision.	Death.
XVIII.	Czerny, 1902, *Ibidem*, XXXIX, p. 99.	Male 42 years.	Stenosis of pylorus.	Normal.	Posterior with button.	6 months.	Ulcer at level of anastomosis.	Gastroenteroplastic, resection pylorus, later Billroth.	Death.
XIX.	Czerny, 1902, *Ibidem*, XXXIX, p. 99.	Male 36 years.	Ulcer of stomach with dilatation.	+	Posterior with button, November, 1900.	2 years.	One ulcer with gastrocolic fistula.	Closure of colon and new gastroenterostomy.	Cure.
XX.	Neumann, 1902, *Deutsche Zeitschrift für Chirurgie*, LVIII, p. 270.	Male 24 years.	Stenosis with great dilatation.	+	Anterior, March 29, 1897. Vicious circle, enteroanastomosis, May 10.	13 months.	Ulcer adherent to wall.	Three operations.	Cure.
XXI.	Mikulicz, 1903, *Boston Med. and Surg. Journal*, No. 23.	Male 53 years.	Stenosis.	+	Anterior with enteroanastomosis. October 14, 1898.	4 years and 4 months.	Ulcer adherent to wall.	Suture of ulcer.	Death.
XXII.	Mikulicz, 1903, in Tiegel, *loc. cit.*	Male 33 years.	Ulcer.	+	Anterior with enteroanastomosis, January, 1899.	3 years and 2 months.	Ulcer adherent to wall.	Liberation and suture.	Cure.
XXIII.	Brodnitz, 1903, *Kongressbericht*, 1903, p. 77.	Male 58 years.	Stenosis with dilatation.	+	Anterior, January 25, 1894.	3 years and 9 months.	Two ulcers, at the jejunum and at the anastomosis.	Resection of the anastomosis and new gastroenterostomy.	Cure.
XXIV.	Schloffer, 1903, *Wiener klinische Wochenschrift*, 1903, p. 492.	Female 33 years.	Ulcer of pylorus.	?	?	?	Peptic ulcer at level of anastomosis.	New gastroenterostomy after ward second intervention.	Cure.
XXV.	Mayo Robson, 1904, *Annals of Surgery*, 1904, p. 190.	Male 44 years.	Gastric ulcer with hæmatemesis.	+	Anterior.	3 years and 4 months.	Adherent ulcer.	Enterectomy; gastroenterostomy, Y method.	Cure.
XXVI.	Tiegel, 1904, *Mitt. a. d. Gg. d. Med. u. Chir.*, XIII, 1904, p. 909.	Male 41 years.	Stenosis with dilatation.	+	Anterior, June 22, 1901.	2 years.	?	Medical treatment.	Cure.
XXVII.	Kaufmann, 1905, *Ibidem*, 1905, p. 151.	Male 44 years.	Stenosis of pylorus.	+	Posterior, with enteroanastomosis, December 29, 1901.	4 years.	Gastrocolic and jejunocolic fistula.	Separation, suture, and ileosigmoidostomy.	Death.
XXVIII.	Jahr, 1905, *Berliner kl. Woch.*, No. 44, p. 100.	Male 29 years.	Stenosis of pylorus.	—	Anterior with enteroanastomosis, December 20, 1903.	1 year and 10 months.	Ulcer adherent to wall.	Separation, suture.	Cure.
XXIX.	Eiselsberg, 1905.		No data available.						
XXX.	Herczel, Prem. *Cong. Internat. Surg. Soc.*, 1905.	Male 37 years.	Ulcer.	?	Post. gastroenterostomy.	8 years.	Ulcer afferent loop jejunum, gastrocolic fistula.	Operation.	Cure.
XXXI.	Gosset, 1905, *Revue de chirurgie*, 1906, p. 54.		Marked stenosis with great dilatation.		Posterior.	22 months.	Ulcer of jejunum, jejunocolic fistula, emaciation, diarrhœa, fæcal odor of vomit.	Separation of jejunum and transverse colon, closure and ileosigmoidostomy.	Cure.
XXXII.	To this list may now be added that of Lyle, 1906.	Male 26 years.	Gastric ulcer near pylorus; no stenosis or dilatation.	+	Posterior with enteroenterostomy.	6 months.	Ulcer of jejunum?	Medical treatment.	Cure.

Ætiology.—According to Tiegel (*Mitteilungen aus den Grenzgebieten der Medizin und Chirurgie*, xiii, 1904, page 909) in general the causes predisposing to ulcer formation in the stomach and the duodenum affect also the jejunum. The most important factor is undoubtedly the increased acidity of gastric juice. Gosset in twenty-one cases found seventeen of hyperchlorydria, two of normal secretion and two of hypochlorydria. The fact that there were two cases of normal secretion and two of diminished secretion led him to believe that the presence of a stenosis and dilatation of the stomach was of importance in the formation of jejunal ulcers.

In our case no stenosis and no dilatation were present. There was a continuous hypersecretion. In this relation it is important to note that no cases of jejunal ulcer have been reported following gastroenterostomies for carcinoma. The situation of the ulcer at the site of the gastroenterostomy or near it also points toward increased acidity as the factor, the gastric juice being undimished in its acidity at this point.

Kocher (*Kongressbericht,* Berlin, page 104) remarks that formation of an ulcer is favored by the contraction of the intestine below the gastroenterostomy, so that stagnation takes place, and therefore opportunity is prolonged for the action of the acid gastric juice. Another important ætiologic factor is disturbance of the circulation. Virchow's observation on this condition as the beginning point for formation of stomach ulcers probably holds good for the jejunum. Definite circulatory disturbances in the jejunum may be of different kinds: First, from the operation itself, from injury or ligature of the blood vessels, through sewing, through pressing together the button ends, or through tearing or twisting of the mesentery. Mikulicz makes the point that the direction in which the jejunum is attached to the stomach will have an influence on further circulatory conditions. The danger of ligating a large number of intestinal blood vessels is greater by the longitudinal implantation than by the transverse. In the Mikulicz clinic the posterior transverse is used without any cases of ulcer of the jejunum.

Secondly, disturbances of the circulation after operation can be brought about by the abnormal position and fixation of the loops that form the anastomosis. These may be: A. Great tension on the intestinal loops and mesentery. B. Kinking. C. Pressure by neighboring organs which the immobilized loops are unable to escape. These detrimental conditions are increased when pathological conditions of the circulation are already present, as from diseases of the heart and lungs, stasis in portal circulation. Furthermore, atheromatous changes in the walls of the blood vessels may occur. Unfavorable conditions may also be caused by direct injury to the mucous membrane, giving the acid stomach contents a weak spot to attack. Such injuries can take place easily at the time of the operation, through pressure of artery forceps, by the actual closing of the Murphy buttons and the long continued pressure of them after they are closed; later, through injury from coarse food stuffs, such as bread crusts. Finally, a predisposition to formation of intestinal ulcers undoubtedly exists.

Pathology. (After Tiegel.) Ulcers of the jejunum in their macroscopical and microscopical appearance are identical with those of the stomach and duodenum, so that the same processes are probably responsible for both. They begin as small hæmorrhages in the mucous membrane, from which develops a hæmorrhagic necrosis. Through digestion of this necrotic tissue a loss of substance takes place which at first affects only the mucous membrane, but finally works into the deeper tissues and involves all the layers of the intestinal wall. The edges are in part of the cases smooth. The ulcer itself is round, and often has a punched out appearance. This form is usually found in cases running an acute course, and indicates a rapidly developing process. In others we find the loss of substance in the layers of the mucous membrane greater than in the deeper ones (muscular). The walls of the ulcer in these cases have a terrace formation, indicating a much more gradual involvement. Finally we have the development of inflammatory phenomena which more or less obscure the original appearance, the walls become infiltrated, hard, tumefied, and the outline of the ulcer irregular. In long standing cases adhesions form with the neighboring organs, and these finally become involved in the ulcer, thus producing a deep, crater-like loss of substance. These conditions are often found in chronic cases, and finally the formation of large, inflammatory tumors may eventually lead to the development of a fistula. Microscopically, the ulcers show no other signs but the defect in the mucous membrane, and in the neighborhood more or less appearance of inflammatory infiltration.

CASE.—W. B. D., Jr., age twenty-six years, male, well developed and well nourished. No heredity of importance. Slight thickening of radial arteries. Blood and urine normal. No typhoid. Patient did not remember any stomach disturbance until the spring of 1898, following an attack of measles. Soon after that he began to have gnawing pains in the abdomen, indefinitely situated between the umbilicus and the ensiform, coming on about three or four hours after eating, generally in the morning and afternoon, seldom in the evening and never at night. These pains would last until he ate solid food, and the more he had, the more comfortable he felt. The pain continued with intermissions, lasting from two to five months until November, 1904. No diagnosis was made at the time, and practically no treatment given. During this time the patient had no nausea, no vomiting, no pyrosis, no bleeding, no belching of gas, and no tenderness. The first attack of nausea came on late in November, 1904, without any warning. In December the pain was constant, not relieved by food. The patient was obliged to stop work and consult a doctor. The increase of pain was probably due to eating coarse foods in a mining camp. During January, 1905, he had no pain, but about the middle of February it returned with increased severity. The patient continued to work, but had no further medical advice until the 27th of March. He was then given alkalies for his indigestion. On April 5th he dined at 7 p. m., and at 9.30, while riding on a trolley, he was suddenly seized with violent abdominal pains and vomiting, which came on without any previous exertion and no warning.

A diagnosis of appendicitis was made, and he was

operated upon at 8 a. m., April 6th, by Dr. H. N. Mayo, of Salt Lake City, who found a perforated round gastric ulcer of about the size of a ten cent piece within three quarters of an inch of the pylorus, but no dilatation of the stomach. After suturing the opening he did a posterior gastroenterostomy, uniting the most pendulous portion of the stomach posteriorly to the jejunum, about five inches below the ligament of Treitz, and then did an enteroenterostomy about four inches below the gastroenterostomy. The patient rallied well after the operation, with no vomiting from the ether, and progressed favorably until 9 p. m., when he had a severe hæmorrhage. He was infused and was given adrenalin by the mouth. From this time on his recovery was uninterrupted until April 26th, when he had an attack of abdominal pain with vomiting, which was relieved by washing out the stomach. He left the hospital on April 30th, weighing 133 pounds, and was advised to follow the diet prescribed in Thompson's *Dietetics* for such cases. He took sodium phosphate for two weeks, but no continuous treatment with alkalies was carried out.

The patient improved steadily, and was in splendid physical condition until the middle of October, 1905, when there was a return of the abdominal pain and vomiting. Following this he noticed for the first time that he had a black stool, but did not speak of it to his physician. From November 1st he began to have the old gnawing symptoms, with some abdominal distress. On the third and fourth he had more black stools. On the twelfth, when I saw the patient for the first time, he had had during the morning some sharp, colicky stomach pains, vomiting twice, and that night was seized with a very severe, steady, boring pain in the region of the umbilicus, which was only relieved by morphine hypodermically and poultices. On November 16th he was given an Ewald test breakfast. The analysis showed total acidity 90, free hydrochloric 70, combined hydrochloric 14, total hydrochloric 84, organic acids and salts 6, no trace of blood. Two days later the patient passed a tarry stool which he forgot to save, but the one on the following day when examined gave a marked reaction for blood. On November 20th, he was given a rice and raisin pudding at bedtime. Contents the next morning showed the motor functions of the stomach to be good, but a total acidity of 55, free hydrochloric 30, and total hydrochloric 35, a continuous hypersecretion.

As soon as could be arranged the patient was put to bed on an ulcer cure for six weeks. The diet prescribed was that of Leube, and the medication alkalies and belladonna. On January 1st analysis showed a total acidity of 86, free hydrochloric 66, combined hydrochloric 14, total hydrochloric 80. On February 27th, free hydrochloric 65, total acidity 98. March 19th, total acidity 98, free hydrochloric 70, combined hydrochloric 6, and total hydrochloric 76. Stool normal. Patient was seen by Dr. G. R. Lockwood, who gave it as his opinion that a jejunal ulcer was present.

The interesting features of this case are:

1. The long duration of a gastric ulcer with only one symptom, pain, but that one which is often the most important diagnostic factor (Cohnheim, *Die Krankheiten des Verdauungskanals*, 1905).

2. The continued high acidity of the gastric juice, no attempts being made to correct it with alkalies, a condition which favored the development of a jejunal ulcer.

3. The ignorance of the patient concerning the importance of a black stool, a fact which opens up the speculation of how many other mild cases have gone unrecognized.

4. The probability of a mild arterial sclerosis, of interest as a possible ætiological factor.

60 West Fifty-eighth Street.

THE SCOPE OF THE FEDERAL FOOD AND DRUGS ACT.*

By H. W. Wiley, M. D.,
Washington,
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The food and drugs act introduces for the first time into this country a national control over interstate and foreign commerce in foods and drugs. The importation of foreign drugs is controlled at the ports of entry under an existing law which was first enacted in 1848. This law not having been specifically repealed, I believe, under the ordinary construction, remains in full force except in points in which its provisions are in conflict with those of the new inspection law. Just how far the requirements of the new inspection law must be read into the old law is a matter of purely legal character on which I have no opinion. It is evident, therefore, that the application of the act, in so far as drugs are concerned, will be practically to the control of domestic commerce.

Two standards for drugs entering into interstate commerce are specifically noted in the act, namely, standards as set forth or indicated in the *United States Pharmacopœia* and the *National Formulary;* second, standards which are placed on the drugs themselves. Under the terms of the act it appears that any drug bearing a name recognized in the *United States Pharmacopœia* or *National Formulary* shall be held to conform in strength and purity to the standards therein established or indicated, whether they are marked U. S. P., N. F., or not. If it is desired that these drugs shall conform to any other standard than that of the established authorities, this standard must be plainly stated upon the label.

Drugs which are used for technical purposes are evidently not included in this classification, inasmuch as the definition of drugs excludes all chemicals and all drugs ordinarily so used, employed for technical purposes. This is so clearly brought out in the law itself, it appears to me, as to need no further elucidation; yet some questions have been raised respecting a discrimination. As a mere suggestion, I would say that when substances are used both for medicinal and technical purposes, it would be advisable to state upon the label the fact that they are to be used "for technical purposes," when so intended, or to attach some other words so as to show clearly that they are not to be used as drugs. In regard to certain kinds of substances, the law presents a double attitude. An illustration of this is in the case of alcoholic beverages. When these are used as beverages it is not necessary to state upon the label the quantity of alcohol which they contain. If, however, prescribed as remedies or drugs, tonics, or otherwise, the label must bear the required statement.

A question arises here of some importance in regard to these bodies. If the physician prescribes wine as a tonic, the patient may purchase this wine either of a liquor dealer or of a druggist, and the same is true, for instance, in the case of malt extract, which may be sold as indicated

* Read before the Philadelphia Branch of the American Pharmaceutical Association, December 12, 1906.

before or over the bar. When is an article purchased as before mentioned to be considered as a beverage and when as a medicine? Here is a question of such nice legal bearings that I am unable to give any opinion. Theoretically, any such package should bear the percentage of alcohol therein contained; practically, it would be rather difficult to enforce such a regulation.

The most striking feature of the food and drugs act is that relating to the practical exemption from supervision as to the standards of the so called proprietary remedies. Just why the *United States Pharmacopœia* and *National Formulary* remedies should be subjected to such a rigid standard, and practically the same mixtures be allowed to go uninspected, is a question of importance. This is no more strange, however, than the laws regulating the practice of medicine and pharmacy. Those who are legitimately engaged in the practice of these professions are required to take a long course in preparatory training and to secure a license after examination before State and municipal boards in medicine and pharmacy, and even then they are required to practise their professions under the strict supervision of the law. On the other hand, the quack doctor or the proprietor of a fake remedy may practise medicine through the public press and dispense drugs in the same manner, through the mails, with the aid of the express companies, without any medical or pharmaceutical training whatever, without securing any license or paying any fees, or without being subjected to any kind of inspection, save in the placing of the names of a few drugs upon his labels and refraining from misrepresentation, as stipulated by the Federal act. In other words, that part of medicine and pharmacy which least needs a supervision of the law is practically the only part which comes under its supervision, while the unspeakable abuses which attend the other branch or remedies go practically unchecked. It is hoped that when amendments are made to the law they will be of a character to at least impose equally rigid inspection upon proprietary remedies. My experience with these remedies is purely of an academic character, but in the last few months I have had presented to me hundreds of labels of proprietary remedies and also the formulas of the articles. The information submitted has brought out many interesting features, of which I shall mention only two. A large majority of all the proprietary remedies are made by manufacturing firms whose names appear nowhere upon the label, and who would be, I am sure, heartily ashamed to have them there. Most of these proprietary remedies are compounds of well known drugs, most of which appear in the *United States Pharmacopœia* or *National Formulary*, and doubtless are copies of ordinary prescriptions. That first class firms should lend their influence or countenance to a thing of this kind is almost incredible.

A few days ago I read a letter of consolation written by a manufacturing firm to a promoter of a great female remedy, so called, assuring him that the prescription or medicine which this firm manufactured for him would bear every test of the pure food and drug act, and that he need have no fear in giving his guaranty. In point of fact the guaranty should be given by the manufacturer of the remedy, and not simply by the seller and advertiser thereof. The prescription is simple enough and doubtless wholly ethical, but the use to which it is put is something which transgresses every law of ethical propriety, whether on the part of the manufacturer who makes the stuff for the profit or on the dealer who advertises it.

There are many other points which naturally present themselves in connection with the drug part of the food and drugs act. I need hardly assure this audience that, in so far as the Department of Agriculture is concerned, this act will be enforced in the letter of its terms and the spirit of its purpose; that is, in harmony with the ethical principles of pharmacy and medicine. We shall do all we can to conserve these principles in the drug trade as it passes from State to State, having in view the noble purposes of the two great professions interested, namely, the alleviation of suffering and the treatment of diseases. To this end we shall labor to see that the drugs which shall pass from State to State are pure and up to the standard of strength required, and that the proprietary remedies bear the legend which the law requires, and that their labels be free from any statement, design, or device which is false and misleading in any particular. If this last can be secured in the spirit of the act, it seems to me it will put an end forever to the disgraceful condition in which our country now finds itself, flooded, as it is, with remedies for the laity, advertised falsely and reaching, through the public press, every home and hamlet of our country.

Therapeutical Notes.

The Cosmetic Advantages of Treating Malignant Growth of the Eyelids with Radium.—Kirchner is reported in *Archives d'électricité médicale*, May 25, 1906, to have cured two relapses of epithelioma of the eyelids with 1 milligramme of radium bromide. In the two cases the whole thickness of the eyelid was involved in the growth. The first case Kirchner treated by a series of sittings, each lasting fifteen to twenty minutes; the second case was treated in one sitting. Each case was cured without a cicatrix, and the functions of the eyelids retained.—Through the *Archives of the Röntgen Ray.*

Characteristic Reactions of the Opium Alkaloids with Boric Acid.—According to C. Reichardt (*Pharmazeutische Zeitung*, 1906, No. 47), narceine turns yellowish green with boric acid, and papaverine and narcotine yellow to grayish yellow, the first two on being heated with boric acid giving a permanent red color while narcotine turns from grayish green to grayish black. Morphine, codeine, and thebaine give a somewhat greener color with boric acid, a sort of yellowish green. With thebaine the color reaction first begins on melting and carbonization takes place readily. Codeine behaves in the same manner as thebaine. Morphine, which shows the least reaction with

boric acid, behaves in somewhat the same manner as codeine and thebaine. It was only by prolonged heating that the color produced enables one to distinguish one alkaloid from the other. The author promises further contributions along this line at a future time.—Through the *American Druggist and Pharmaceutical Record.*

Grafting of Kidneys in the Bend of the Elbow by Arterial and Venous Sutures.—Jaboulay (*Le Bulletin médical*, October 31, 1906) reports two cases in which kidneys, taken from a pig and a goat, respectively, were transplanted to the human subject for the relief of advanced Bright's disease in one case, and suppurating cyst of the kidney in the other. The object of the operation was to supplement the defective urinary secretion of organic disease by installing a healthy animal kidney, and thus to come to the aid of the natural organs, which were affected by incurable maladies. The first case was that of a woman, forty-eight years of age, suffering with Bright's disease, with extreme hypertension, with headache, diminution of vision and of hearing, and who was passing only about 500 c.c. of urine daily. This was albuminous and only contained 4 grammes of urea. The kidney of a pig (which had been killed three hours previously, and the organ immediately removed and placed in warm salt water) was placed in an incision in front of the elbow of the patient, and its vessels were united with the local vessels. The left kidney and the left arm of the patient were selected for the experiment. A longitudinal incision was made following the line of the brachial artery, which exposed the median cephalic vein. This was dissected free, and below it was found the artery above its bifurcation. An Esmarch bandage being placed around the arm, a ligature was now placed upon the vessels at the point selected, and the latter were divided leaving their central termination free from blood. The kidney was then fixed in the wound, with its face anterior and not covered. The ureter occupied the lowest part and was directed towards the inner border of the bend of the elbow. The renal artery was joined to the central termination of the brachial artery, and the renal vein to the central end of the median cephalic vein in the following way: Each of the vessels of the patient were introduced into the lumen of a metallic ferule, or short tube, and then turned back at the extremity of the tube, to a furrow, or ridge, where they were fixed by an encircling thread. The internal wall of the vessel (endartery or endovein) in this way became external, and could be coapted with the homologous internal tunic of each vessel of the kidney. The latter was drawn over the former like a hood, completely surrounding the tube and the first vessel. A circular thread now was applied to maintain the relations of the vessels. After the removal of the Esmarch bandage, the blood was observed to flow through the junction and into the renal artery and the kidney. The latter became swollen and a drop of blood appeared upon a spot of accidentally produced abrasion on the convexity, inflicted when the kidney was removed from its adipose envelope. The wound was sutured in its upper part, and the forearm and arm were placed in a lateral moulded tin splint, and all enclosed in a bandage. The immediate result of the operation of transplanting the kidney was a marked diuresis (1,500 c.c. of albuminous urine in twenty-four hours) with increase of urea to sixteen grammes. On the third day the dressing was removed and the kidney found to be bluish black, and gangrenous on the surface; temperature only 32° C. It was noted that the part of the kidney in contact with the deeper structures had contracted adhesions, and this portion of the kidney was of a rosy color. It was decided to remove the gangrenous kidney. The large vessels upon examination were found to be filled with clots, which obliterated their lumen completely. The ureter was found to contain a few drops of urine of acid reaction as tested by litmus paper. Therefore, the ureter contained fresh, unaltered urine, and which in all probability had been excreted, in consequence of the anastomosis of the bloodvessels just described. Thus, it is seen that reestablishment of the urinary circulation had been realized in this left kidney, but it was of short duration, and was interrupted by a rapid thrombosis. It was sufficient, however, to renew its functional activity and to discharge a quantity of escrementitious substances which, entering the veinous circulation, were able to provoke a marked polyuria in the patient. The microscopical examination, furthermore, showed that the circulation had been restored in the kidney. Certain lobules were found to have their vessels filled with red blood cells of normal contour; others showed their vessels almost empty, while a large clot filled the large renal artery in a portion of the organ. In the second case, a woman of fifty years, who had been subjected to nephrotomy for a suppurating kidney, and subsequently had a lumbar sinus. In this case the kidney of a goat (which had the advantage of being smaller, while the vessels were of large calibre) was implanted at the bend of the left elbow, as in the preceding case. The result was the same, the kidney was removed on the third day for the same reasons. The operation itself was shown to be without gravity; in both cases the wounds healed by second intention, and no inconvenience resulted from loss of a part of the circulation in the forearm. Jaboulary comments on these two cases as follows: If this method of grafting should become recognized in practice, there is no part of the organism which is better adapted to receive the graft than the bend of the elbow, owing to the facility and safety of the operative measures required. Possibly the vessels might be united directly (without the ferule) as recommended by Brian (Recherches expérimentelles sur la suture et la greffe arterielle, *Lyon médical*, 1896), but this is rendered difficult by the small size of the vessels, especially the brachial artery. It is possible that the transplanted kidney from a lower animal presented conditions more favorable to the coagulation of blood in the vessels, which a graft from the same species might not possess. This may explain the difference between the clinical results and those which were obtained experimentally by Carrel.

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RED RUBBER AND THE VERMIFORM APPENDIX.

A Liverpool surgeon, Mr. F. A. Pond, is convinced that he has found in certain uses to which red rubber is put one of the principal causes of appendicular disease. He acquired the idea about a year and a half ago, and wrote a letter on the subject to the editors of the *Lancet*. Lately he has published a pamphlet entitled *Is Red Antimonial Rubber the Cause of Appendicitis?* In this pamphlet, of which he has kindly sent us a copy, he reproduces his letter to the *Lancet*, also that journal's comments, and gives an account of his subsequent investigation of the question. He thinks that the present known frequency of appendicular inflammation shows indeed a remarkable increase in the number of cases of such disease of late years. This supposition, of course, runs counter to the idea that disease of the appendix was quite as common in old times as it is at present, only passing unrecognized. It is only fair to say that he adduces some plausible negative evidence in support of this supposition, though we cannot look upon it as convincing.

Mr. Pond remarks upon the frequency with which rings of red rubber are used for sealing bottles and jars holding articles, especially "soft" drinks, intended to be taken into the stomach. He makes it seem exceedingly probable that particles of the rubber are often worn off and swallowed. Having reached the gastro-intestinal canal, these detached particles of rubber exert an injurious action, not by reason of their being foreign bodies, but in consequence of their containing a large amount of a sulphur compound of antimony, which, he argues, is susceptible of being dissolved out by the digestive juices. It is by depressing the vital powers and causing muscular relaxation of the bowels, he thinks, that antimony favors the occurrence of appendicular trouble. In addition, it irritates the mucous membrane of the stomach and bowels, "producing a catarrh and leading on to ulceration."

Many a supposition that has at first appeared to have no better support in facts than this one of Mr. Pond's has finally met with serious consideration and even with acceptance, but we must say that we think the weight of probability is against his idea. However, there is much that is of interest in the individual items of his contention, and his statements are made with such candor and moderation that they deserve attention. At all events, antimony does not seem to be allowable as a constituent of anything that is intended to be swallowed, save in the rare instances of its use as a medicine. Red rubber is not now much employed in this country for the purposes mentioned by Mr. Pond, though it may be that, as he says, its use originated here.

METHYLENE BLUE AND THE URINE OF TYPHOID FEVER PATIENTS.

Dr. L. F. Dmitrenko, of Odessa, has made experiments with the reaction of methylene blue on the urine. The test was proposed by Russo in the *Riforma medica*, 1905, No. 19, as a substitute for that of the diazo reaction. To obtain this methylene blue reaction, it is necessary to add four drops of a one per cent. solution of methylene blue to four or five cubic centimetres of urine, when the urine of typhoid fever patients turns green to smaragd green. The same color Dr. Russo observed on applying the test in measles, smallpox, advanced tuberculous disease of the lungs, tuberculous pleurisy, empyema, and peritonitis.

Dr. Dmitrenko reports the results of his observations in the *Medizinische Woche* for November 5th, and states that he has made use of the methylene blue reaction in four hundred patients, covering a period from October 9, 1905, to January 19, 1906. His results are very interesting. He states that the method of obtaining the methylene blue reaction is no simpler than that of producing the diazo reaction. Furthermore, it is not easy to distinguish the exact shade of the resulting color. In his 400 samples he found, for example, 34 olive green, 137 smaragd green, 18 undecided, 138 blue green, and 73 blue. Besides, the original color of the urine greatly influences the final color produced by the reaction. Al-

though the methylene blue reaction is found quite often in typhoid fever patients, it does not give a trustworthy result. The author comes to the conclusion that the methylene blue method is less accurate than that of the diazo reaction and more complicated.

ACTINOMYCOSIS AND PREGNANCY.

Actinomycosis is more prevalent in some parts of the world than elsewhere. Although more than a hundred cases in the human subject have been reported in this country (Ewing collected this number four years ago), it is not so frequent here and in England as in France and Germany. On this account certain phases of the subject are more readily studied by Continental observers. The recent study of the reciprocal effects of pregnancy and actinomycosis, by Thévenot, assistant to Professor Poncet, of Lyons, is therefore of special interest; more particularly because it is, to the best of our knowledge, the first contribution to appear elucidating this phase of the subject (*Bulletin médical*, October 31st).

The conclusion of this paper may be very briefly summarized in the statement that actinomycosis exerts no marked influence upon the evolution of pregnancy or upon parturition, both of which proceed normally. The child, however, is likely to be somewhat underdeveloped and delicate. Nursing the infant is regarded as inadvisable, because it is exhausting to the mother, and there is the possible danger of infection. The curious observation is made that pregnancy seems to predispose to actinomycosis, since in most of the cases studied the patients were pregnant at the time of infection. The course of actinomycosis appears to be checked or "attenuated" by pregnancy. After parturition, however, it seems to acquire increased vigor.

In discussing the question of treatment (*Revue de chirurgie*, September 10th) Thévenot warns the observer against being misled into making a too favorable prognosis, owing to the deceptive slow course of the disease, when it occurs in a pregnant subject. He recommends prompt and effective treatment, without waiting for the termination of pregnancy. He regards the medicinal treatment as the more important, limiting the surgical procedure to incision of fluctuating points, with the daily application of compresses containing iodine to the indurated zones. Internally, potassium iodide is chiefly to be relied on. Heliotherapy, hygiene, and life in the open air are useful, as they oppose the tendency to impairment of nutrition both in the mother and in the fœtus.

MOLIERE'S ANTIPATHY FOR DOCTORS.

Men of letters and artists in all ages have usually been singularly fair and generous in their appreciation of the essential dignity and character of the profession of medicine. There have, however, been a few exceptions, the most notable perhaps that of Molière, and it is now said that Bernard Shaw, in his latest product for the stage, has emulated the example of Molière, and has lampooned the doctor of to-day with all the perverted taste and erratic vulgarity which characterize his queerly constructed plays. It is a far cry, however, from Molière to Bernard Shaw. The cause of Molière's deep rooted dislike for physicians is a question of literary and medical interest alike, and it has never been very satisfactorily explained. It was Macaulay, we think, who said: "You cannot indict a whole people." It is this that Molière has essayed to do in his unworthy treatment of medical men as a class, whom he holds up to ridicule along with the hypocrite, the miser, the parvenu, and other general types of human weakness, vanity, and vice. Why the imperishable comedies of this great writer, who was an astute and sympathetic judge of the motives of the human heart and a relentless castigator of the wrongdoing and foibles of his day, should be disfigured by the ribald caricatures his physicians are, has long been a source of wonder and conjecture among his medical admirers.

An incident of his life which seems to have been overlooked by most of his biographers is related in the first edition of the original English translation of his plays, published in London in 1732, and it throws a curious light on the origin of this cherished aversion. Molière is revealed in a very human relation, and a melancholy illustration is afforded of the fact that the most transcendent genius is often swayed by the same ignoble impulses, pique, and petty spite which actuate meaner minds. In 1664 he was very much in love with the young and handsome wife he had recently married, the daughter of his former mistress Mlle. Béjart, an actress in his company of players. They were lodging in the house of a physician, and Molière's wife, who was apparently a good deal of a Xantippe, became involved in a violent quarrel with the doctor's wife. Molière warmly espoused his wife's part and, to revenge her, wrote the first of his abusive medical satires, *L'Amour médecin*. This play was not well received by the public, and its lack of success, as his early anonymous biographer quaintly observes, incensed him so highly against the physicians that he never spared them whenever he found an opportunity. In truth, it was said that

he gave this definition of them, that they were people who were paid for talking jargon to their patients till Nature cured or their medicines killed them.

The student of Molière's life will find in the fact that he was for many years a sufferer from tuberculous disease of the lungs, an added reason for his distrust of drugs and his disappointment in doctors. He was doubtless embittered by their failure to relieve or cure him. It was the irony and pathos of his fate that a fatal change occurred in the progress of his disease as he was feigning death during the performance of his last play, *Le Malade imaginaire*. He was taken with a profuse hæmorrhage soon after the conclusion of the play, and, consistent to the last, would have no physician, saying "there's no occasion to destroy the little life I have left." The following Latin epitaph and epigram was composed at the time:

> Roscius hic situs est tristi Molierus in urna,
> Cui genus humanum ludere ludus erat.
> Dum ludit mortem, mors indignata jocantem
> Corripit, et mimum fingere sæva negat.

This may be rendered in English:

> In this sad urn we Roscius Molière must place,
> Whose fun it was to ridicule the human race.
> Dissembling death, he cruel death displeased,
> Who the jest denied and the jester seized.

THE DIETETIC TREATMENT OF SPRUE.

The treatment of sprue resolves itself into a selection of the best diet for the patients. There are three opinions on this point. One group of observers believe that a pure milk diet is the best, a second group think that a pure meat diet is the best, while a third group are convinced that a mixture of the two diets gives the best results. Cantlie (*Journal of Tropical Medicine*, September 15th) believes that a meat diet is the means of curing sprue rapidly and efficiently, but he holds that sprue is not always permanently cured by this means alone. A patient who presents the symptoms of the last stages of sprue—emaciation, anæmia, dropsy, and fever—can be cured by a diet of home made beef tea, raw meat juice, and beef jelly administered in teaspoonful doses every ten minutes. As the patient's strength increases the feeding time may be lengthened to every twenty minutes, and later to every half hour, so that by the fifth day he ought to be able to take pounded meat from the top of the round. The time of feeding may be gradually increased to intervals of two hours. A week or two weeks later vegetables, bread, and stewed fruit may be added to the diet with benefit. If this treatment is persisted in, the patient will surely relapse, and Cantlie's method of preventing this relapse is to require the patient to abstain from all meat every third or fourth day and to take an exclusive milk diet for twenty-four hours. He maintains that under this method of feeding several men who have had sprue have been able to return to the tropics and to enjoy good health. For such a person Cantlie finds that the milk day may come as infrequently as once a week.

Manson, on the other hand, is an advocate of the pure milk diet. He advises at first not more than sixty ounces of milk in twenty-four hours. The milk should be given in small quantities, frequently repeated, day and night if the patient is very ill, and it should be sipped with a teaspoon, not drunk. As the stools improve in consistence and the symptoms subside, the quantity of milk may be increased until six or seven pints are being taken daily. No other food than milk should be permitted for six weeks from the time the patient's stools become solid and his mouth free from irritation. The diet is then increased by the cautious addition of raw egg, artificial malted food, arrowroot, rusk, pulled bread, stale bread and butter, chicken broth, fruit, fish, and chicken.

Another diet which is used for relapses consists of meat and warm water, three pounds of the former and four pints of the latter as a maximum amount. The meat may be minced or taken as beefsteak or mutton chop. The warm water is taken at bedtime, the first thing in the morning, and between meals, never at meal time.

THE FEDERAL FOOD AND DRUGS ACT.

As pointed out by Dr. Harvey W. Wiley, chief of the Bureau of Chemistry, Department of Agriculture, in a paper published in this issue, the Federal food and drugs act, which takes effect on January 1st, is a long step taken by the national government toward supervision of interstate commerce in food and drugs. We have long had Federal supervision of the imported crude drugs, but it has taken twenty years of agitation to bring about this action governing interstate commerce in drugs and foods. The act is undoubtedly open to criticism in many points, but it also possesses many commendable features, one of the most admirable of which is the provision made for a commission to which has been intrusted the drafting of rules and regulations for the enforcement of the act. This commission has given hearings at which manufacturers, dealers, and others interested were invited to present their views, and from the mass of information thus elicited the members have been enabled to draw

up regulations which are for the most part easy of comprehension and readily complied with by honest manufacturers.

In these rules and regulations ample provision has been made, not only for protecting the public from the operations of unprincipled quacks, in so far as the law gives authority to do this, but also for protecting manufacturers and dealers from annoyance by competitors who may desire to use the law as a cover for their designs. The placing of the authority to bring actions under the law in the hands of the Secretary of Agriculture removes all possibility of the exertion of malign local influences based on interested motives.

The essential features of the law are that it holds manufacturers and dealers responsible for the truth of the statements made on the labels of their goods, and that it requires the publication on the label of the names and amounts of each of certain drugs named in the law which may be present, the drugs named being alcohol, morphine, opium, cocaine, heroin, alpha or beta eucaine, chloroform, cannabis indica, chloral hydrate, and acetanilide or any derivative or preparation of these. We feel confident that, even with the limitations which the law imposes upon the authorities, it will prove a powerful factor for good in improving the quality of the drugs and medicinal preparations dispensed under pharmacopœial names, in suppressing those quacks who have so long preyed upon the American public by means of fraudulent allegations made for their preparations, and in checking the spread of the narcotic drug habit by giving notice to the public of the presence of narcotic drugs in preparations presumed to be free from these.

PRECOCITY IN MALINGERING.

Two of those curious cases that show to what lengths the craving for notoriety will lead some individuals to counterfeit morbid conditions are related in the *Bulletins et mémoires de la Société médicale des hôpitaux de Paris* for November 22nd. Both malingerers were little girls between ten and twelve years old. The first of them frequently blew worms from her nose. She was known to be an incorrigible little liar, but she seems to have imposed upon her mother and a physician in the matter of the worms. At last, however, Dr. A. Souques obtained from her the confession that she herself had inserted the worms into her nose, having obtained them from various fruits and nuts. The other little girl, whose case M. Siredey cited from the experience of Hardy, pretended to be suffering with stone in the bladder, and the mother declared that she frequently heard stones strike the bottom of the pot de chambre when the girl urinated. The child's freedom from pain and evident good health led M. Hardy to propose a physicial examination, but from this the girl's modesty recoiled. Eventually, however, it was made, and her vagina was found packed with gravel stones which she had picked up in the garden.

A SLIP OF THE CLERICAL TONGUE.

Some amusement has been occasioned by newspaper reports of a sermon recently preached by a noted clergyman. He was appealing to the people to repose in their pastors the same degree of trust with which they followed the advice of their lawyers and their doctors. "If," he is reported to have said, "you get a prescription from your doctor, you take the medicine trustfully." Then he paraphrased Tennyson's noble lines thus:

> Yours not to reason why,
> Yours but to do and die.

We are quite sure that the good man did not realize what an interpretation his words might bear.

Obituary.

JOSEPH D. NASH, M. D.,

OF PHILADELPHIA.

Dr. Nash died on Wednesday, December 9th, at his home, 1316 North Eleventh Street, Philadelphia, from cerebral hæmorrhage. He was born in Plumstead, Pa., in 1836. After receiving an ordinary district school education, he taught school for a number of years in Bucks County, and in the early fifties went to Michigan, where he worked as a member of a surveying party for a railroad. He was graduated from the University of Michigan, and in 1856 received the degree of doctor of medicine from the Jefferson Medical College. He was a member of the Philadelphia County Medical Society, of which he was at one time the secretary, the Medical Society of the State of Pennsylvania, and the American Medical Association.

WILLIAM J. HERDMAN, M. D., LL. D.,

OF ANN ARBOR, MICH.

By the death of Dr. Herdman the Middle West has lost one of its most prominent medical practitioners. Although for the past ten or fifteen years more closely identified with neurological practice, Dr. Herdman had since his graduation from the University of Michigan, in 1872, been a typical example of the progressive clinician, interested in all branches of medicine. At the time of his death, at the age of fifty-eight, he held the professorship of diseases of the nervous system in the University of Michigan. Dr. Herdman was a man of striking personality, and not only had he identified himself with the problems of his special calling, but his interests and practical sense made his services in general educational and civic matters of marked service. His were activities that could ill be spared.

News Items

NEW YORK CITY AND STATE.

The Society of Physicians of the Village of Canandaigua, N. Y.—At a meeting of this society, as guest of Dr. S. R. Wheeler, held on Thursday, December 13th, Dr. A. L. Beahan read a paper on Intestinal Approximation.

The Saratoga, N. Y., Medical Society.—The programme for a meeting of this society, held on Friday evening, December 21st, included a paper on Fractures, by Dr. D. C. Moriata; discussion by Dr. J. F. Humphrey, Dr. G. S. Towne, and Dr. F. J. Resseguie.

The First Public Lecture at the New York Academy of Medicine.—On Saturday evening, December 29th, at 8.30 o'clock, Dr. Wilfred T. Greenfell, of Labrador, will deliver a public lecture on The Work of a Labrador Doctor. The lecture will be illustrated by lantern slides.

The Tri-Professional Medical Society of New York.—The programme for a meeting of this society, held on Tuesday evening, December 18th, included a paper on Anæsthesia and Anæsthetics, by Dr. E. H. F. Pirkner; discussion opened by Dr. J. T. Gwathmey.

The Medical Society of the County of Richmond, N. Y.—The annual meeting of this society was held on Staten Island, on Wednesday, December 12th. The election of officers resulted as follows: President, Dr. George P. Jessup, of New Dorp; vice-president, Dr. Henry C. Johnston, of Tompkinsville; secretary and treasurer, Dr. Horace W. Patterson, of New Brighton.

The Medical Society of the County of Chautauqua, N. Y.—The annual meeting of this society was held at Jamestown, on Wednesday, December 12th. The following officers were elected: President, Dr. C. H. Richards, of Dunkirk; vice-presidents, Dr. B. S. Swetland, of Brocton, and Dr. W. M. Bemus, of Jamestown; secretary-treasurer, Dr. H. A. Eastman, of Jamestown. The next meeting of the society will be held at Fredonia, on the last Tuesday in May, 1907.

The Medical Society of the County of Rensselaer, N. Y.—At the annual meeting of this society, held at Troy, on Tuesday, December 11th, the election of officers resulted as follows: President, Dr. J. B. Harvie; vice-president, Dr. Emmott Howd; secretary, Dr. H. W. Carey; treasurer, Dr. R. B. Bontecou; delegate to third district branch, Dr. Hiram Elliott; delegates to State association, Dr. C. E. Nichols and Dr. C. H. Travell; censors, Dr. C. B. Sprague and Dr. J. A. Barnes.

The American Association for the Advancement of Science.—The *Section in Physiology and Experimental Medicine* of this association will hold meetings as follows: Thursday, December 27th, at 11 a. m., at Schermerhorn Hall, Columbia University; 2.15 p. m., College of Physicians and Surgeons; Friday, December 28th, 10 a. m., at Rockefeller Institute for Medical Research; Saturday, December 29th, at 10 a. m., Rockefeller Institute. This last meeting will be a joint session with the *American Physiological Society.*

The Medical Society of the County of Otsego, N. Y.—The annual meeting of this society was held at Oneonta, on Tuesday, December 11th. The election of officers resulted as follows: President, Dr. J. C. Smith, of Oneonta; vice-president, Dr. James Burton, of Cooperstown; secretary, Dr. H. W. Boorn, of Schenevus; treasurer, Dr. F. L. Winsor, of Laurens; censor, Dr. C. E. Parish, of Maryland; delegate to State society, Dr. M. Latcher, of Oneonta. The outgoing president, Dr. S. A. Mereness, gave an address on The Physician as an Educator, and a symposium was held on the subject of Persistent Headache. Dr. A. H. Brownell discussed Its Relation to Eye Strain and Defective Vision, and Dr. L. F. T. Genung Its Relation to Nervous and Organic Disease; a general discussion followed.

The Clinical Society of the New York Post Graduate Medical School and Hospital.—A meeting was held on Friday, December 21, 1906, at 8.30 p. m. The following programme was presented: A symposium on The Examination of Sick Children from the View Point of the Specialist: Orthopædic Examination, by Professor Taylor; Medical Examination, by Professor Chapin; demonstration of medical examination, by Professor Pisek; surgical examination, by Professor Peterson; rectal examination, by Professor MacAlpine; examination of the nervous system, by Professor Hammond; examination of the eyes, by Professor Davis; examination of the ears, by Professor Phillips; examination of the skin, by Professor Brown; examination of the nose and throat, by Professor Douglass; discussion by Dr. Abrahams, Dr. Sheffield, Dr. Doty, Dr. Cairns, and others.

The New York Pathological Society.—A meeting of this society was held at the Academy of Medicine, 17 West Forty-third Street, on Wednesday evening, December 12, 1906, with the following programme: Suppurative Pancreatitis with Multiple Pancreatic Stones, by Dr. J. H. Larkin; Specimens of Gangosa, a Tropical Ulceration Involving the Nasopharynx, by Dr. J. A. Fordyce; A Case of Hepatic Adenoma Originating from, and Simulating, Liver Parenchyma, by Dr. Harlow Brooks; On the Coagulability of the Blood and Its Practical Applications, by Dr. G. W. Ross, of Toronto (by invitation); Demonstration and Description of Specimens of Experimental Cerebrospinal Meningitis in the Monkey, by Dr. Simon Flexner; On the Anticomplementary Substances of Blood Corpuscles and Serum, by Dr. H. Noguchi.

The New York Academy of Medicine.—The following programme was arranged for a meeting, held under the auspices of the *Section in Surgery,* on Thursday, December 20th: Papers: General Considerations in Reference to Blood Examinations in Surgical Diseases, by Dr. Frederic E. Sondern; The Value of the Differential Leucocyte Count in General Surgery, by Dr. John B. Deaver, of Philadelphia; The Clinical Value of the Differential Leucocyte Count in Operative Otology, by Dr. James F. McKernon; The Value of the Differential Leucocyte Count in Gynæcology, by Dr. Howard C. Taylor. Discussion by Dr. Howard Lilienthal, Dr. Nathaniel B. Potter, Dr. Thomas W. Hastings, Dr. George Sloan Dixon, and others.

The *Section in Laryngology and Rhinology* will hold a meeting on Wednesday evening, December 26th, with the following order: Presentation of Patients: A Case of Primary Carcinoma of the Inferior Turbinate (Postoperative), by Dr. W. W. Carter; Papers: (a) Leptothrix Mycosis, by Dr. F. J. Quinlan; (b) Primary Carcinoma of the Nose, with Report of a Case, by Dr. W. W. Carter; Exhibition of Specimens and New Instruments: Universal Attachment for Cannulæ for Irrigation of the Accessory Sinuses, by Dr. L. A. Coffin. Executive session; Election of officers.

The *Section in Obstetrics and Gynæcology* will hold a meeting on Thursday evening, December 27th, with the following order: Presentation of cases: presentation of specimens; general discussion on Conservatism in Operations on the Uterine Adnexa, introduced by Dr. H. N. Vineberg, and continued by Dr. Goffe, Dr. Bandler, Dr. West, and others. Election of officers.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending December 15, 1906:

	December 15.		December 8.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	51	15	72	15
Smallpox	5	..	13	0
Varicella	140	..	147	0
Measles	163	8	155	5
Scarlet fever	185	11	149	9
Whooping cough	71	9	52	10
Diphtheria	289	42	276	32
Tuberculosis pulmonalis	354	179	356	162
Cerebrospinal meningitis	3	13	8	2
Totals	1,261	277	1,228	235

Society Meetings for the Coming Week:

MONDAY, *December 24th.*—Medical Society of the County of New York; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement; Baltimore Medical Association.

TUESDAY, *December 25th.*—New York Dermatological Society (private); New York Medical Union (private); New York Otological Society (private); Metropolitan Medical Society of New York (private), (annual); Buffalo Academy of Medicine (Section in Obstetrics and Gynæcology); Richmond, Va., Academy of Medicine and Surgery; Rome, N. Y., Medical Society; Boston Society of Medical Sciences (private).

WEDNESDAY, *December 26th.*—New York Academy of Medicine (Section in Laryngology and Rhinology); New

York Pathological Society; New York Surgical Society; American Microscopical Society of the City of New York; Philadelphia County Medical Society; Auburn, N. Y., City Medical Association; Berkshire, Mass., District Medical Society (Pittsfield).

THURSDAY, *December 27th.*—New York Academy of Medicine (Section in Obstetrics and Gynæcology); New York Orthopædic Society; Brooklyn Pathological Society; New York Celtic Medical Society (private); Hospital Graduates' Club, New York; Roxbury, Mass., Society for Medical Improvement (private); Pathological Society of Philadelphia; Church Hill Medical Society of Richmond, Va.; Brooklyn Society for Neurology.

FRIDAY, *December 28.*—Academy of Pathological Science, New York; New York Clinical Society (private); New York Society of German Physicians; Yorkville Medical Association, New York (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

SATURDAY, *December 29th.*—West End Medical Society (private).

PHILADELPHIA AND THE MIDDLE STATES.

The Chestnut Hill Hospital, Philadelphia, has purchased a property on Germantown Avenue, above Chestnut avenue, which, after alterations are completed, it will use for the extension of its work.

Charitable Bequests.—By the will of Margaret Walsh, St. John's Asylum, St. Vincent's Home, St. Vincent's Orphan Asylum, and the Little Sisters of the Poor receive $50 each.

The Alumni Association of the Jefferson Medical College gave its annual smoker on the evening of Friday, December 7th, in the basement of the college building, Tenth and Walnut Streets, Philadelphia. The members of the senior class of the Jefferson Medical College were present as the guests of the association.

Philadelphia Personal.—Dr. W. M. L. Coplin, director of the department of public health and charities, and Dr. A. A. Cairns, chief medical inspector of the department of public health, were guests of honor at a banquet given by the assistant medical inspectors of the department of health, on the evening of December 7th.

The Western Pennsylvania Institution for the Feeble-minded, at Polk, Pa., asks for $800,000 for its yearly expenses. The application was made to the meeting of the State board of charities, held in Pittsburgh, on November 27th. The Western Pennsylvania Institution for the Feeble-minded is an excellently conducted institution and is entirely supported by the State of Pennsylvania.

Section on General Medicine, College of Physicians.—At the meeting of the Section on General Medicine of the College of Physicians, held on Monday evening, December 10th, Dr. Joseph Sailer presented a patient with possible congenital disease of the heart; Dr. A. P. Francine read a Review of the Therapeutic Use of Koch's Tuberculin; and Dr. Robert N. Willson read a paper on the Pathogenesis and Treatment of Neurasthenia in the Young.

The South Mountain Sanitarium for Indigent Tuberculous Patients, situated in Franklin County, Pa., in the State Forestry Reservation, has just completed its third year of existence. At the annual meeting of the Pennsylvania Forestry Association, held on Monday, December 10th, the officers of the sanitarium stated that it was one of the best natural sanitariums in the world. Dr. Joseph T. Rothrock is the physician in charge.

Scientific Society Meetings in Philadelphia for the Week Ending December 29, 1906.—*Monday, December 24th,* Mineralogical and Geological Section, Academy of Natural Sciences. *Wednesday, December 26th,* Philadelphia County Medical Society. *Thursday, December 27th,* Pathological Society; Entomological Section, Academy of Natural Sciences; Section Meeting, Franklin Institute. Friday, *December 28th,* South Branch, Philadelphia County Medical Society; Northern Medical Association.

The Berks County, Pennsylvania, Medical Society.—At the December meeting of this society, held at Reading, the election of officers resulted as follows: President, Dr. Irwin H. Hartman, of Reading; vice-presidents, Dr. G. F. Potteiger, of Hamburg, and Dr. J. K. Seaman, of Reading; treasurer, Dr. S. G. Burkholder, of Reading; recording secretary, Dr. W. S. Bertolet, of Reading; corresponding secretary, Dr. F. G. Runyeon, of Reading. The annual banquet of this society will be held on January 8, 1907.

The Philadelphia Pathological Society.—The regular semimonthly meeting of the Philadelphia Pathological Society was held on Thursday, December 13th. Dr. D. Rivas read a paper on the Sterilization of Culture Media by the Fractional Method; Dr. David L. Edsall read a paper on the Examination of the Fæces for Fat; Dr. C. Y. White and Dr. J. D. Blackwood read a paper on the Comparative Study of Noma in the Monkey. Card specimens were exhibited by Dr. J. T. Ullom, Dr. Alfred Gordon, and Dr. W. G. B. Harland.

Philadelphia Pædiatric Society.—At the regular monthly meeting of the Philadelphia Pædiatric Society, held on Tuesday evening, December 11th, Dr. C. H. Weber exhibited a patient on whom Edebohls's operation had been performed; Dr. James K. Young exhibited a patient suffering from coxa vara; Dr. J. T. Rugh exhibited a patient on whom a successful operation for congenital dislocation of the hip had been performed by the Lorenz method; Dr. D. J. M. Miller exhibited a cast of the bronchus from a child aged two years; Dr. S. McC. Hamill exhibited a protective uniform for use in the treatment of contagious diseases; and Dr. David L. Edsall read a paper on Cases of Fat Intolerance, with Peculiar Features.

The Philadelphia County Medical Society.—The regular semimonthly meeting of the Philadelphia County Medical Society was held on Wednesday evening, December 12th. The evening was given over to a symposium on the suppression of quackery. Mr. Edward Bok, editor of the *Ladies' Home Journal,* spoke upon the Suppression of Quackery from the Viewpoint of the Public. Dr. William M. L. Coplin spoke upon the Department of Health and the Suppression of Quackery. Mr. Thomas W. Barlow spoke on the Legal Aspect of Suppressing Quackery. Mr. George W. Ochs, the proprietor of the *Public Ledger,* spoke on the Relation of Journalism to Quackery. Dr. Henry W. Cattell spoke upon What the Organized Profession Can Do. Dr. Henry Leffmann spoke upon Deceptions in the Chemical Formulæ of Nostrums. The discussion was conducted by Dr. John B. Roberts, Dr. S. Solis-Cohen, and Dr. Henry Beates.

Tropical Medicine.—Beginning January 1, 1907, the Philadelphia Polyclinic will offer a course in Tropical Medicine. The course is designed for men contemplating taking the examination for appointment or for promotion in the Army, the Navy, or the Public Health and Marine Hospital service; for men and women who are intending to go out to the foreign fields as missionaries; and for men and women who are on furlough from the foreign field and desire to learn modern methods of diagnosis; as well as for those who purpose to practice in tropical countries. The instruction will consist principally of laboratory work, the examination of the blood and fæces, parasitology and pathological histology. Didactic lectures on diseases of the tropics and laboratory demonstrations will also be employed in the course. The work will extend over three months and will require daily attendance in the laboratory, Saturday excepted. Fee for the course, $50.

The Health of Philadelphia.—During the week ending December 8, 1906, the following cases of transmissible diseases were reported to the Bureau of Health:

	Cases.	Deaths.
Typhoid fever	203	18
Scarlet fever	26	1
Chicken pox	62	0
Diphtheria	78	10
Cerebrospinal meningitis	1	1
Whooping cough	14	3
Measles	43	3
Tuberculosis of the lungs	86	73
Pneumonia	77	46
Erysipelas	9	2
German measles	2	0
Septicæmia	2	0
Tetanus	1	1
Mumps	3	0
Anthrax	2	0
Cancer	11	12

The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 11; diarrhœa and enteritis, under two years of age, 19. The total mortality was 516, in an estimated population of 1,469,126, corresponding to an annual death rate of 18.26 in a thousand population. The total infant mortality was 114; under one year of age, 91; between one and

two years of age, 23. There were 40 still births, 31 males and 9 females.

BOSTON AND NEW ENGLAND.

The American Laryngological, Rhinological, and Otological Society.—The eastern section of this association will hold its annual meeting at Providence, R. I., on Saturday, January 5, 1907.

The Grafton County, New Hampshire, Medical Society.—The third annual meeting of this society was held at Woodsville, on Wednesday, December 12th. The following officers were elected: President, Dr. F. von Tobel, Lebanon; vice-president, Dr. G. W. McGregor, Littleton; secretary and treasurer, Dr. G. A. Weaver, Warren; delegate to the New Hampshire Medical Society, Dr. W. T. Smith, Hanover; censor, for three years, Dr. H. A. Hildreth, Bethlehem.

The Mortality of Connecticut.—According to the State Board of Health's *Monthly Bulletin*, for November, 1906, the total number of deaths during the month was 1,294. This was 8 more than in October, and 37 more than in November of last year, and 139 more than the average number of deaths during November for the five years preceding. The death rate was 15.3 for the large towns, for the small towns 15.8 and for the whole State 15.4. The deaths reported from infectious diseases were 190, being 14.7 per cent of the total mortality.

BALTIMORE AND THE SOUTH.

The Southern Association of Medical Colleges.—At the annual meeting of this association, held at Baltimore on Monday, December 10th, Dr. Christopher Tompkins, of Richmond, Va., was reelected president.

The Cabell County, West Virginia, Medical Society.—At a meeting, held at Huntington, on Thursday, December 13th, officers were elected as follows: President, Dr. C. C. Hogg; vice-president, Dr. C. M. Hawes; secretary, Dr. James R. Bloss; treasurer, Dr. I. R. LeSage.

The Lauderdale County, Mississippi, Medical Association.—At a meeting of this association, held at Meridian, on Thursday, December 6th, officers were elected as follows: President, Dr. H. F. Tatum, of Meridian; vice-president, Dr. W. J. Anderson, of Meridian; secretary-treasurer, Dr. J. Bennett, of Meridian. The next meeting of the association will be held on Thursday, January 3, 1907.

Personal.—At a meeting of the board of trustees of the Carnegie Institution at Washington, held on December 11th, Dr. William H. Welch, of Johns Hopkins University, was elected to fill a vacancy in the board and Dr. S. Weir Mitchell, of Philadelphia, was reelected on the executive committee. Dr. John S. Billings was reelected chairman of the board.

The South Carolina Medical Society.—The annual meeting of this society was held at Charleston, on Saturday, December 8th. The following officers were reelected: President, Charles M. Rees; vice-president, Dr. John L. Dawson; treasurer, Dr. Roland Alston; secretary, Dr. Julius C. Sosnoski; and censor, Dr. Lane Mullaly. Two delegates were elected to the convention of the State Medical Association, which meets next April.

The Henderson County, Kentucky, Medical Society.—The annual meeting of this society was held at Henderson, on Wednesday, December 12th. The election of officers resulted as follows: President, Dr. W. S. Forwood; vice-president, Dr. W. A. Poole; secretary, Dr. Silas Griffin; member of board of censors, Dr. J. W. Stone; delegate to State medical society, Dr. Archibald Dixon; alternate, Dr. J. C. Moseley.

The Southern Surgical and Gynæcological Association.—At the annual meeting of this association, held at Baltimore, on December 11th-13th, officers were elected as follows: President, Dr. Howard A. Kelly, of Baltimore; vice-president, Dr. R. E. Fort, of Nashville, Tenn.; secretary, Dr. William D. Haggard, of Nashville, Tenn.; treasurer, Dr. Charles M. Rosser, of Dallas, Texas. New Orleans was decided upon as the next place of meeting.

The Orleans Parish, La., Medical Society.—At a meeting of this society, held at New Orleans, on Saturday, December 8th, officers were elected as follows: President, Dr. John J. Archinard; first vice-president, Dr. John B. Elliott, Jr.; second vice-president, Dr. C. J. Landfried; third vice-president, Dr. John Laurans; secretary, Dr. Amedee Granger (reelected); treasurer, Dr. E. O. Trahan; librarian, Dr. Homer Dupuy (reelected); additional members board of directors—Dr. C. Jeff Miller, Dr. G. Farrar Patton, Dr. Edwin J. Graner.

The Mortality of Baltimore.—There were 33 deaths from pneumonia and 34 from consumption in Baltimore, for the week ending December 8th, and the general rate of mortality was higher than it was during the corresponding period of 1905. The total deaths from all causes last week numbered 218, compared with 201 for the same week last year, 198 in 1904, and 214 in 1903. The annual death rate in 1,000 of population was: Whole, 19.48; white, 16.70; colored, 34.27. The principal causes of death were: Typhoid fever, 2; scarlet fever, 1; diphtheria, 1; membranous croup, 2; influenza (la grippe), 1; consumption, 34; cancer, 7; apoplexy, 8; organic heart diseases, 16; bronchitis, 4; pneumonia, 33; Bright's disease, 20; congenital debility, 15; lack of care, 2; old age, 9; accidents, etc., 8. The following number of cases of infectious diseases were reported, as compared with the corresponding week of last year:

	1905.	1906.
Smallpox	1	0
Diphtheria	20	33
Pseudomembranous croup	0	1
Scarlet fever	14	10
Typhoid fever	12	9
Measles	7	9
Mumps	0	3
Whooping cough	3	0
Chickenpox	7	6
Consumption	8	15

CHICAGO AND THE WEST.

Personal.—Dr. Robert H. Babcock, of Chicago, has been appointed to succeed the late Dr. Fernand Henrotin on the consulting staff of the county hospital, and Dr. George Marquis to succeed Dr. H. M. Starkey, retired.

The Cleveland (O.) Medical Library Association.—At the annual meeting of this association, held on Monday, December 10th, the following officers were elected: President, Dr. H. G. Sherman; vice-president, Dr. D. H. Beckwith; directing librarian, Dr. C. A. Hamann; secretary, Dr. H. L. Sanford.

The Douglas County, Wisconsin, Medical Society.—The annual meeting of this society was held at Superior, on Tuesday, December 11th. Officers for the coming year were elected as follows: President, Dr. S. G. Pake; vice-president, Dr. Lewis Moody; secretary-treasurer, Dr. Charles Giesin; censor, Dr. H. J. Orchard. The principal address of the evening was delivered by ex-Mayor H. W. Dietrich, who spoke on Medical Jurisprudence. Other speakers were Dr. C. D. Conkey, Dr. C. H. Mason, and Dr. W. C. Lounsbury.

Statement of Mortality of Chicago for the Week Ending December 8, 1906, compared with the preceding week and with the corresponding week of 1905. Death rates computed on United States Census Bureau's figures of midyear population—2,049,185 for 1906 and 1,990,750 for 1905:

	Dec. 8, 1906.	Dec. 1, 1906.	Dec. 9, 1905.
Total deaths, all causes	584	571	554
Annual death rate in 1,000	14.86	14.53	14.50
Sexes—			
Males	324	313	330
Females	260	258	224
Ages—			
Under 1 year of age	165	95	88
Between 1 and 5 years of age	52	64	42
Between 5 and 20 years of age	47	47	37
Between 20 and 60 years of age	252	235	264
Over 60 years of age	128	130	123
Important causes of death—			
Apoplexy	6	14	17
Bright's disease	49	38	51
Bronchitis	22	14	17
Consumption	64	66	79
Cancer	26	23	21
Convulsions	6	9	7
Diphtheria	19	25	11
Heart diseases	43	62	47
Influenza	4	2	1
Intestinal diseases, acute	28	22	22
Measles	4	1	4
Nervous diseases	32	27	24
Pneumonia	87	82	83
Scarlet fever	12	17	1
Suicide	10	4	10
Typhoid fever	6	9	6
Violence (other than suicide)	25	41	37
Whooping cough	2	2	0
All other causes	139	113	116

Pith of Current Literature

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

December 15, 1906.

1. Sudden Paralysis of Pharynx. Artificial Feeding for Four Years, By S. Weir Mitchell.
2. Myasthenia Gravis, By E. Eugene Riggs.
3. Faradization of the Motor Cortex in the Human Brain, By James Hendrie Lloyd.
4. Addenda to Therapeutical Measures in Certain Forms of Nephritis, By F. M. Johnson.
5. Mensuration of the Child in the Uterus with New Methods, By Ellice McDonald.
6. The Treatment of Asthma, By Delancey Rochester.
7. The Quinine Treatment of Cholera, By Erskine B. Fullerton.
8. The Coming Revision of the United States Pharmacopœia, By M. I. Wilbert.
9. Malarial Hæmoglobinuria (*Concluded*), By Walter V. Brem.
10. Fibroid Tumors of the Uterus (*Continued*), By Charles P. Noble.
11. Case of Multiple Fibrosarcoma of the Tongue, By Frederick Holme Wiggin.

1. Sudden Paralysis of Pharynx.—S. Weir Mitchell reports the following case: A healthy woman, of good personal and family history, twenty-seven years of age, married, went to bed without sign of trouble. During the night she awoke with a chill and sore throat, and on the following morning she was unable to swallow. Since that date, July 21, 1901, until now, she has never swallowed by volition a particle of food, having been entirely fed by tube. Within the next forty-eight hours a new set of symptoms appeared. The left leg and arm were felt by her to be cold, and were also more cold to the touch than the limbs of the other side. There was marked ptosis of the left eyelid, and the face was slighty drawn to the right. Within the first thirty-six hours of the attack she coughed up pus and blood in large quantities, but this flow disappeared rather suddenly after three days. About this time occurred a painful swelling of the left wrist, which lasted three weeks, while also there was much pain in the muscles generally, with soreness, but no swelling. Treatment with potassium iodide was without result. An examination made a year later showed nothing abnormal in the wind pipe, pharynx, nasal passages, and head sinuses, nor in the œsophagus. The treatment was suspended, and patient fell off thirty-six pounds in weight, and lost all her teeth, which had been previously sound. Her throat was examined at several times, without finding anything of importance. But in April, 1906, it was found that at the limit of the observer's power to explore the pharynx there was a fine growth in the middle line projecting forward from the anterior face of the pharynx. It was very difficult to reach. This tumor was about an inch wide at the level of the arytenoid cartilages. An x ray picture not only revealed how dense this structure was, but also the extent to which it extended down the canal behind the pharyngeal mucous membrane. No treatment has been of value, and only a skilful masseuse was able to slowly increase sensibility by the use of friction of the growth for a few minutes twice a day.

2. Myasthenia Gravis.—Riggs reports a case of a patient, illustrating the two phases of the disease, the one purely bulbar, the other with ophthalmoplegia and associated bulbar and general muscular weakness. He says that the symptomatology of myasthenia gravis is best explained by supposing the presence in the blood of a toxine affecting the function of the lower motor neurone. Dr. James Taylor suggests that this toxic substance is produced by an enlarged or modified thymus or by an abnormal lymphoid tissue infiltration throughout the body and muscles as well, and that in myasthenia we are dealing with a disease in a certain sense the converse of myxœdema. Thus far no treatment has been found efficacious, although the most efficient agents, used in his own case, were strychnine, gentle massage, and galvanism. No rational therapy, concludes the author, can be pursued until a substance will be discovered, which will antagonize this poison which is being constantly thrown into the blood.

4. Addenda to Therapeutical Measures in Certain Forms of Nephritis.—Johnson summarizes his article as follows: There is needed: 1. More extensive scientific investigations of the chemical and microscopical characters of the urine; 2, a full examination of the urine of patients much more often than is now done; 3, earlier recognition of pyelitis and beginning forms of nephritis; also of both ureteral and urethral strictures; 4, employment of lavage of the renal pelvis in properly selected cases; 5, greater familiarity with simple bladder washes, and the proper use of the catheter; 6, searching investigations regarding better therapeutical agents in kidney diseases, and a more thorough study of the chemistry of food; 7, better cooperation in thought and work among the members of the medical profession.

5. Mensuration of the Child in the Uterus with New Methods.—McDonald describes his method of mensuration of the child in the uterus. He uses an ordinary pelvimetre of simple construction, and two rings of adhesive plaster, about 1 cm. in width, fastened to each tip. These rings are faced inside with adhesive plaster, back inward, and are made sufficiently large to readily admit the middle and ring finger, while the knoblike tips of the pelvimetre should project about 1 cm. beyond the palpating fingers. The patient is laid on her back, and the operator stands as if to palpate for the position of the head. An accurate diagnosis of the fœtal position is essential. The occiput and sinciput being located, the knobs of the instrument are approximated to these points as closely as possible. This gives occipitofrontal diameter. From this is thus to be deducted the biparietal diameter, for which a method is given, also approximating the weight of the infants.

8. The Coming Revision of the Pharmacopœia of the United States.—Wilbert proposes the following inovations: To be really national in character, the pharmacopœia should receive the active cooperation and support of physicians as well as pharmacists. The contents of the book should be indicated by physicians, and should be limited to an enumeration and description of articles, the properties and uses of which are well established and generally recognized. The work of revising the book should be practically accomplished before the meeting of the national convention, and the several changes, as proposed, should be given widespread publicity. As in the past, the national convention should act on the general principles which are involved and entrust the more minor details to the committee on revision and the board of trustees. The supervision of future editions should be entrusted to a much smaller committee of directly responsible editors. The American Medical Association should institute a standing committee on the pharmacopœia for the twofold purpose of collecting information to be used in connection with the revision of the pharmacopœia itself and of popularizing the pharmacopœias in its content with members of the medical profession.

9. Malarial Hæmoglobinuria.—Brem gives his experience with 1,107 malarial patients in Ancon, Panama Canal Zone. He states that a febrile affection resembling the estivo-autumnal type of malarial fever was the only ætiological factor discoverable. Previous attacks of malarial fever appeared to furnish a favorable ground, quinine was not an ætiological factor, either predisposing or exciting. Evidence appears to favor the view that the estivo-autumnal parasite, and not a special organism, is the exciting cause. The symp-

toms and signs of the disease may be very mild, and the gravity of the illness indicated only by the urine examination. A history of dark, black, or bloody urine can be obtained almost invariably. The degree of fever bears no relation to the intensity of hæmoglobinuria and albuminuria. A posthæmoglobinuria fever of peculiar character occurred in four cases; it did not yield to quinine. Blood examinations show that the primary event is destruction of the red blood corpuscles, with hæmoglobinuria, and subsequent hæmoglobinuria, anæmia being very rapid, and the rapidity of recovery phenomenal. In well defined cases practically an absolute diagnosis can be made from a macroscopical examination of the urine combined with the test for albumin, while in borderline cases a test for hæmoglobin is necessary for absolute diagnosis, but a probable diagnosis can be made from a deeply colored urine with a brownish sediment and albumin 20 per cent. or more. Intramuscular injections of quinine appear to act specifically. The best method is thought to be the injection of ten grains every four hours during the first forty-eight hours—fifteen grains may be substituted for the first three or four doses—a then smaller dose by mouth may be given if vomiting does not forbid. Quinine bihydrochloride in an excess of acid is more suitable than quinine bimurate with urea for intramuscular injection.

MEDICAL RECORD.

December 15, 1906.

1. Leprosy as Seen in the Philippines, By Major CHARLES B. EWING.
2. The Scope and Value of the Sanatorium in the Antituberculosis Movement, By HERBERT MAXON KING.
3. Prostatectomy in Diabetes, By JOSEPH WIENER.
4. The Rôle of Suggestion in Therapeutics, By WILLIAM BURGESS CORNELL.
5. Gastroptosis in Relation to Hyperchlorhydria, By E. REISSMAN.

1. Leprosy as Seen in the Philippines.—Ewing, of Jolo Jolo, P. I., gives a very interesting review of his studies of leprosy in the Philippine Islands, based upon twenty-six cases. He tells us that leprosy is said to have been first introduced into the Philippines in 1633, when, it is related, the emperor of Japan sent a ship containing 150 lepers to those islands to be cared for by the Catholic priests there. The seed was planted in this way, and as no means were taken to eradicate the disease the Franciscan fathers estimate that at the present time there are not less than 30,000 lepers in the archipelago, the major portion of these being in the Visayas. His own experience and investigation places the total number at much less than 10,000 for the entire Philippine Archipelago. It must not be understood that leprosy is so common in the Philippines that one meets it at every turn in the cities and villages of that country. He is therefore of the belief that the casual observer will fail to find much leprosy in his travels in the Orient, which is perhaps due in part to new sanitary regulations and laws requiring segregation, particularly in the larger cities. The lepers seen by him were Chinese and Filipinos, and he was able in a few cases to procure a complete history. The universally acknowledged cause of leprosy is the *Bacillus lepræ* which possesses a striking resemblance to the bacillus of tuberculosis, both morphologically and as regards staining reactions. The author was able to find the organism in the discharges of ulcerating lepromata in the tuberculous lepers, but not successful in the dust of the floor or walls of the Lazaretto, the lounging place for 100 lepers. He, furthermore, found the lepra germ in the discharges from the nose in several cases of tuberculous leprosy, which location is said by the India-German Leprosy Commission report to be the primary seat and place where the bacilli are almost invariably found. Of his twenty-six patients fourteen were males and twelve females. Of the fourteen males four had anæsthetic, eight tuberculous, and two mixed leprosy, of the females three anæsthetic, five tuberculous, and four mixed leprosy. The author leaves the question of the contagion of leprosy open, and states that the factor of heredity has little to do with its spread. But the closest and most intimate contact is necessary, and the theory that the susceptibility to this disease is increased by fish diet, remains to be proved. As to incubation it seemed to him to be between four months and five years. The prodromal stage follows that of incubation and precedes the eruptive or macular stage. This consists principally of chills, fever, sweats, and unaccountable feeling of weakness, accompanied by drowsiness and a tendency to fall asleep at unusual times. Other symptoms are dryness of the nostrils, headache, perversions of sensation; such as hyperæsthesia, "pins and needles" in the extremities, also intermittent neuralgic pains in the limbs and face, as well as rheumatic pains in the back, loins, and elsewhere, these lasting months, preceding and leading up to the explosion of leprosy. This stage is followed by the eruptive or macular stage. The eruption is distinctively macular as the areas of discoloration are not elevated above the general level of the skin, but may vary in different cases as to size, number, and duration. The spots range from the size of a dime to those that may occupy many inches of surface; they may be few or many in number. The duration extends from a few days to months and even years. Sight and touch failed to disclose during the macular stage any very well marked changes in the skin as the result of thickening or new growth, but this is followed by a period of tissue development or deposit, showing most strikingly the impress of specific characters. This tissue change or deposit may affect either the skin, peripheral nerves, or both. If in the skin, tuberculous or nodular leprosy results; if in the peripheral nerves, anæsthetic or nerve lepra ensues; if in both localities, then mixed leprosy is the consequence. Where syphilis has been acquired by a leper, or leprosy has been grafted upon a syphilitic, the clinical features of leprosy are greatly modified. While all three forms of leprosy proper when fully developed have much in common pathologically; clinically, they are fairly distinguishable. In anæsthetic leprosy the prodromal and macular stages may be severe, slight, or entirely absent; usually, however, there is a well marked macular stage of long duration, which is quite exceptionable in tuberculous leprosy. A large volume might readily be written upon the treatment of leprosy, but this would serve no useful purpose, except to exploit a long series of failures. So far as known all of the alleged cures have failed, when merely the test of time has been applied to them.

2. The Scope and Value of the Sanatorium in the Antituberculosis Movement.—King remarks that the sanatorium is not alone a school for the patient, but quite as much a school for the physician. Every year brings forth new suggestions and new discoveries, or old ones dressed up as new, as applied to tuberculosis, and the crucial test of the value of these can be made more authoritatively in the sanatorium than anywhere else. Both in the laboratory and in the examining room of every sanatorium worthy the name data are constantly accumulating, which must have, and do have, a very decided influence and value in the treatment and prevention of the disease, and this must continue to be the case until such time as our whole conception of tuberculosis shall be revolutionized. The sanatorium (a) offers the tuberculous invalid the most practical, indeed the only systematic, method of fighting his disease and acquiring hygienic education in its prevention; (b) it is a most valuable educational factor, not only in the immediate community in which

it is located, but to a very great extent in the community at large; and (c) it has a definite and important place, which can scarcely otherwise be filled in the study and investigation of the disease and its complications. In these three relationships, then, the sanatorium possesses a scope and value of vital importance in the present great antituberculosis movement.

5. **Gastroptosis in Relation to Hyperchlorhydria.**—Reissman, from his observations in Rose's clinic in the New York Postgraduate Medical School, says that relaxation of the abdominal muscles is the essential feature in gastroptosis or abdominal atony or enteroptosis or splanchnoptosis—all of these terms meaning one and the same thing. The abdominal muscles have the function to keep the abdominal viscera in their physiological position; as soon as they become relaxed these viscera will sink down and there will be general ptosis of the abdominal organs, the stomach, the kidneys, the intestines, and sometimes the liver, the spleen, and even the uterus. It depends on the degree of the relaxation of the abdominal walls, whether all the organs are concerned, and how much the one or the other is displaced. Another function of the abdominal muscles is to control the distribution of fluids in the abdomen, to regulate circulation and secretion. All forms of anomalous gastric secretion may be due to gastric atony; hyperchlorhydria, hypochlorhydria, and achylia. To strengthen the abdominal wall there is no other method so rational, nor directly to the point, than plaster strapping; it has decided advantages over all others, and it is the only one which acts on the crosswise fibrous arrangement of the abdominal muscles. The plaster used for this strapping is zinc oxide adhesive plaster on moleskin seven inches wide and as long as the circumference of the waist measure of the patient. The abdomen is shaved down to and including the symphysis, and is washed with ether. The large piece of plaster is first applied, the point being placed over the symphysis and the ends meeting and overlapping in the back. The plaster should run above the crest of the ilium. The smaller pieces are then applied, serving as an additional support of the abdominal walls. Considerable force may be used in applying the side pieces which run from the hypogastrium over the iliac and inguinal regions and meet at the spine. In order to guard against loosening of the plaster, care should be taken that the edges are perfectly adherent. The plaster is worn for five weeks, usually without discomfort to the patient, who, on the contrary, feels a sense of relief by the support. The composition of the plaster prevents, as a rule, any dermatitis, unless the plaster becomes loose and air penetrates.

BRITISH MEDICAL JOURNAL.

December 1, 1906.

(Seventy-Fourth Annual Meeting of the British Medical Association).

Section of Pathology.

1. A Consideration of the Poisons of *Amanita Phalloides*, By W. W. Ford.
2. The Application of Physical Chemistry to Serum Pathology, By W. H. Manwaring.
3. The Gastric Erosions, By C. H. Miller.
4. A Study of the Influences Exerted by a Variety of Phyiscal and Chemical Forces on the Virulence of Carcinoma in Mice, and of the Conditions Under Which Immunity Against Cancer May Be Experimentally Induced in these Animals, By G. H. A. Clowes.
5. The Investigations of the Imperial Cancer Research Fund, By E. J. Bashford.
6. Evidences that Infected Cages are the Source of Spontaneous Cancer Developing Among Small Caged Animals, By H. G. Gaylord.
7. A Study of the Biology of Tumor Cells, By S. P. Beebe and J. Ewing.
8. Structural Continuity in New Growths, By F. G. Bushnell.
9. The Rarity of Cancer Among the Aborigines of British Central Africa. Squamous Carcinoma: Acinous Carcinoma: Physiological Reasons for Immunity from Cancer of the Breast; Columnar Carcinoma, By H. Hearsey.
10. Beriberi; Some Clinical Cases and their Bacteriology, By H. Wright.
11. Infection and Intoxication in Experimental Glanders, By M. Nicolle.
12. Hypersensibility and Immunity in Experimental Glanders, By M. Nicolle.
13. Relapsing Fever and Spirochætæ. By F. G. Novy and R. E. Knapp.
14. Rhinosporidium Kinealyi (Minchin): A Sporozoon of the Nasal Mucous Membrane, By J. M. Beattie.
15. The Virus of Smallpox and Vaccina, By W. E. de Korté.

Other Articles.

16. On the Public Aspects of the Prevention of Consumption, By R. W. Philip.
17. The Comparative Frequency of Impaired Nasal Respiration as an Antecedent to Pulmonary and to Extrapulmonary Consumption.
18. The Treatment of Phthisis by Sanatorium Methods, By E. W. Diver.
19. A Case of Hæmoptysis, with Numerous Spirochætæ in the Sputum, By C. W. Branch.
20. The Treatment of Chronic Constipation, By W. K. Sibley.
21. The Use of Digitalis in Valvular Disease of the Heart, By E. H. Colbeck.

2. **Serum Pathology.**—Manwaring has applied physicochemical laws in the field of serum pathology, and reaches the following conclusions: 1. The physicochemical law proposed for the absorption of the specific thermostable substance of hæmolytic serum by blood corpuscles can neither be proved nor disproved, due to changes in the chemical nature of heated hæmolytic serum after exposure to corpuscles. The same is true as regards the interaction of the specific thermostable and thermolabile substances of hæmolytic serum, and the interaction of diphtheria toxine and antitoxine.

4 to 6. **Cancer in Mice.**—Clowes has studied the virulence of cancer in mice, and the induction of immunity in these animals. His conclusions are as follows: 1. Primary tumors are only transplanted with great difficulty; after the first generation the yield of tumors gradually increases until a maximum virulence is attained, which remains fairly constant. 2. Increased virulence is invariably associated with an increased rate of growth. 3. The number of mice recovering spontaneously is inversely proportional to the virulence and speed of development of the tumors. 4. The larger the size reached by the tumor, the smaller the chance that it will recover spontaneously. 5. Incubation of tumors of low virulence previous to their inoculation into mice, exerts a stimulating effect, larger yields of tumors being obtained. 6. The resistance of tumor cells to mercuric chloride and other inorganic disinfectants is very high. Bacteria in badly infected tumors can be destroyed with potassium cyanide without affecting the virulence of the tumors. 7. Chemical analysis of the tumors shows a relatively high potassium and nucleoproteid content, associated with high virulence and rapid development, and a low potassium and high calcium content associated with low virulence and slow development. 8. The evidences of immunity are: (a) Spontaneous recovery of mice from true tumors; (b) such mice are not reinoculable with tumor materials of the same degree of virulence as that previously used, and exhibit considerable immunity to subsequent injections of greater virulence; (c) when successfully reinoculated, the tumors in such mice are fewer in number; (d) inoculation for the third time is always a failure; (e) The serum of recovered mice exerts a definite though slight effect on the small tumors in other mice; and (f) mice with developing tumors are immune to subsequent inoculation. 9. The injection of

tumor materials so treated (by heat or chemicals) as to prevent development, fails entirely to confer immunity. 10. The treatment of mice with increasing doses of nucleoproteids (extracted from the most virulent tumors) at stated intervals of time has so far failed to confer an immunity. 11. The process of immunizing mice against cancer appears to be analogous to that of vaccination against smallpox, the animals which recover from an attenuated form of the disease developing an immunity capable of protecting them in the large majority of cases against injections of a more virulent cancer strain than that originally employed.—Gaylord reports an instance of a mouse cage in which upwards of sixty cases of spontaneous tumors in mice occurred in the course of three years. The fact that the location of the cage was frequently changed and the stock entirely renewed on at least one occasion without any permanent interference with the production of tumors, makes it apparent that the cage itself was the source of infection. This observation indicates that both sarcoma in rats and cancer of the breast in mice may be looked upon as contagious. Earnest consideration should be given to the desirability of sterilizing the dressings of cancer cases and the complete sterilization of the rooms which they have occupied.

10. Beriberi.—Wright reports six cases of beriberi. They furnish fresh evidence that beriberi is an acute infectious disease which onsets with gastroduodenal disturbance, runs a fairly definite course, and ends in recovery or a residual paralysis. Beriberi is in no sense a bacteriæmia; the bacillus causative of the disease has not, however, been isolated and found to fulfil Koch's laws.

LANCET.

December 1, 1906.

1. Tobacco Amblyopia, By P. Dunn.
2. Tropical Dysentery, By R. J. Blackham.
3. A Contribution to the Study of Phlyctenular Ophthalmia, By J. B. Nias and L. Paton.
4. Cerebrospinal Meningitis in the Sudan, By C. L. Nedwill.
5. The Indigestibility of Plummer's Pill, By Sir J. Sawyer.
6. A Case of Lepra Tuberosa; Treatment with Chaulmoogra Oil; Approximate Recovery, By J. A. Thompson.
7. A Case of Extensive Rupture of the Trachea with Complete Detachment of the Left Bronchus Without External Injury, By J. L. Barford.

1. Tobacco Amblyopia.—Dunn states that every case of tobacco amblyopia has certain general features which at once raise suspicion as to the source of the trouble. Among these are pallidness of the face, tremulousness of the hands, and marked furring of the tongue. There is a history of blurred and failing vision for some weeks or months, loss of appetite, sleeplessness. Tobacco amblyopia is very rare in youth, and most frequent during middle age. The explanation of the toxic symptoms in these cases probably is that a lowered vitality of the tissues, with the advance of age, is followed by a defective elimination of the poison. The chief factor is the quality of the tobacco of which use is made, which determines the onset of the toxic symptoms. The working classes, as a rule, use shag tobacco, which being strong, can be indulged in to excess without causing any local disturbing effects. Milder forms of tobacco invariably cause local symptoms—soreness of the tongue and lips, pharyngeal catarrh, etc. The quantity smoked in the toxic cases is invariably from a quarter of an ounce to half an ounce daily. The amblyopia is generally accompanied by tremors and cardiac disturbances. The alkaloid nicotine is the main, if not the only cause, of the toxæmia. Although chronic inflammatory changes may be present in the optic nerve, yet the ophthalmoscopic appearances are entirely negative. But the pathognomonic sign of the disease is invariably present—a papillomacular scotoma for green and red. Loss of color perception occurs in other pathological conditions of the optic nerve—*e. g.*, in papillitis; but in all such cases there is manifest evidence by the ophthalmoscope of the disease by which it is caused. Treatment resolves itself into two main features: (1) The absolute prohibition of every form of tobacco habit; and (2) means to stimulate the gastric digestion and cure the chronic gastritis. The latter is readily accomplished by the administration of a tonic, preferably of strychnine and iron. The prognosis, with rare exceptions, is good. When the symptoms have persisted for not more than three months perfect recovery of vision usually ensues. After that period full vision is not always recovered, though great improvement generally results. The prohibition of all forms of tobacco should be maintained for at least twelve months, after which the patient, if so inclined, may begin to smoke moderately and tentatively a mild form of tobacco. Tobacco amblyopia is most frequently met with among workmen who are able to smoke at their work—bricklayers, bootmakers, etc.

2. Tropical Dysentery.—Blackham divides cases of tropical dysentery into two classes: (1) Amœbic; and (2) bacillary. The disease occurs at any age, but has a predilection for the extremes of life. Sex has little influence. Agriculturists, persons who work in hot places, and soldiers are very subject to the disease. The vitality of the body must be lowered for the disease germs to gain entrance—otherwise they pass harmlessly through the intestinal tract. Such lowering of vitality may be local (irritation of the intestine, etc.) or general—such as is produced by exposure to cold, or unfavorable hygienic conditions. The general prophylaxis of dysentery demands careful attention to general hygiene, and the personal avoidance of the predisposing causes. The author lays down the following rules: 1. Drink only boiled or preferably sterilized water—*i. e.*, water not bacteriologically sterile, but which has been heated to 80° C., a temperature which is sufficient to kill nonspore bearing organisms, and certainly the bacilli of dysentery. 2. Clothe warmly and wear a so called cholera belt to avoid chill being communicated through the abdominal wall to the intestine. 3. Be temperate in food and drink, and remember that alcohol is a luxury and not a necessity of life, especially in the tropics. 4. Seek medical advice at once when constipated or suffering from diarrhœa, however mild in character, and avoid drastic cathartics. 5. Isolate all cases of dysentery vigorously, regard cases of diarrhœa occurring during epidemics as suspicious and disinfect with care all diarrhœic stools, and the bedding and clothing of all persons affected with dysentery or suspicious diarrhœa. The indications in the treatment of acute dysentery are five in number: 1. Relief of the pain and tenesmus. This is best done by the use of opium or morphine, either by suppository or hypodermically. 2. Avoidance of irritation of the inflamed mucous membrane. Rest is essential, the patient remaining in bed and using a bed pan. The patient must be kept warm by means of blankets and hot water bottles. The diet should be such as to leave little residue; milk can be taken if the stools are watched for curds. Stimulants are rarely necessary. 3. Production of intestinal antisepsis; this may be done by the administration of saline aperients, by calomel or ipecac, and by the washing out of the bowel per anum with astringent and antiseptic fluids. 4. Counteraction of any morbid agency in the blood as far as may be. 5. Support of the patient's strength by suitable diet. It may be taken as bacteriologically proved that notwithstanding slight cultural differences the various strains of dysentery bacilli isolated by different observers are simply varieties of the same or-

ganism. Symptoms and intestinal lesions identical with those found in man supervene after the subcutaneous inoculation of rabbits with the various strains of dysentery bacilli. The bacilli have considerable vitality; they will live on clothing for weeks, and in damp soil for months. They are, however, very readily destroyed by heat or by weak solutions of bichloride of mercury or the phenols. The specific agglutination reaction can generally be obtained within two weeks following the onset of symptoms; but it is often poorly marked. It is of distinct value in diagnosis, however.

LA PRESSE MEDICALE.

November 24, 1906.

1. The Saturnine Eye, By Professor F. DE LAPERSONNE.
2. Technique of Amputation of the Cervix Uteri, By F. JAYLE.
3. Ætiology of Infantile Tuberculosis, By J. COMBY.

1. The Saturnine Eye.—De Lapersonne divides the ocular manifestations of lead poisoning into two categories, one in which there are, and one in which there are not lesions which can be seen with the ophthalmoscope. The diagnosis is relatively easy in the first class of cases, which he subdivides into those in which the lesions appear at an early stage, and those in which they appear late. In young persons the first symptom of lead poisoning may be the appearance of a double, œdematous neuroretinitis. Or the toxic condition may result in an acute or chronic retrobulbar neuritis. The ocular lesions which appear late are indicative of sclerosis of the vessels and of a saturning nephritis. In one case described the ophthalmoscopic picture was that of thrombosis of the central vein of the retina; in another that of hæmorrhagic glaucoma, which necessitated enucleation. Typical albuminuric retinitis may also be met with, the result of a saturnine nephritis. Among the ocular affections not associated with appreciable lesions in the fundus of the eye may be mentioned sudden blindness due to encephalic lesions produced by the toxic action of the lead, and the ocular manifestations of saturnine hysteria, such as contraction of the visual field, bad perception of colors, and monocular diplopia.

2. Amputation of the Cervix Uteri.—Jayle describes the instruments required, the position of the patients, the duties of the assistants, and finally the technique of the operation in minute detail.

3. Ætiology of Infantile Tuberculosis.—Comby claims that infantile tuberculosis is not to be prevented entirely by combating bovine tuberculosis until the other danger, that of human contagion, is done away with. He considers humaan contagion the prominent factor in the dissemination of this disease.

November 28, 1906.

1. Uræmia in Tuberculous Patients, By PIERRE TEISSIER.
2. The Liver and Iron, By J. CASTAIGNE.
3. Neuronophagia and Neurotoxic Serums, By R. ROMME.

1. Uræmia in Tuberculous Patients.—Teissier considers that the renal lesion complicating chronic pulmonary tuberculosis produces a complex, slow, and progressive intoxication, which results in a uræmia with a peculiar symptomatology and evolution. It is chronic, usually of the respiratory or gastrointestinal type, but sometimes of the cerebral. The diagnosis is not easy, as the symptoms are apt to be attributed to tuberculosis of the organs, which seem to be affected.

BERLINER KLINISCHE WOCHENSCHRIFT

November 12, 1906.

1. Chronic Icterus, By CLAUS and KALBERLAH.
2. A Case of Extensive Thrombosis of the Cerebral Sinus, By A. WIMMER.
3. An Investigation of the Chemistry of the Stomach Undertaken in a Natural Way Without Employment of the Gastric Follicles (Sahli's Desmoid Reaction), By L. V. ALDOR.
4. Has There Been An Exception to the Rule, That in Intensive Affection of the Recurrent Laryngeal Nerves the Abductors of the Vocal Cords Show Functional Disturbances Earlier Than the Adductors? By O. ROSENBACH.
5. Plastic Induration of the Penis and Depuytren's Contracture, By H. NEUMARK.
6. The Action of Radium X Rays on the Human Body, By S. LÖWENTHAL.

1. Chronic Icterus.—Claus and Kalberlah report the histories of two brothers who suffered from chronic jaundice and, after consideration of the literature on the subject, conclude that there are two forms of this disease, one congenital, the other not. In many families there is a predisposition to jaundice, which is indicated by the absence of bilirubine from the urine, sometimes by the presence of urobilin, by discoloration of the stools, by a moderate degree of anæmia with relatively slight disturbance of the general condition, and eventually swelling of the spleen and liver. The severer or milder onset of the last symptom is an indication whether the condition is congenital or not.

2. Thrombosis of the Cerebral Sinuses.—Wimmer reports the case of a man, fifty-two years of age, who died apparently of apoplexy. On autopsy a very extensive, nonpurulent thrombus was found to occlude the longitudinal, transverse, and cavernous sinuses, and also the veins in the pia over the psychomotor area, particularly on the left side.

5. Plastic Induration of the Penis and Dupuytren's Contracture.—Neumark reports a case of plastic induration of the penis of two and one quarter years' duration in a man, thirty-nine years old, who had never had venereal disease. A traumatic origin was likewise excluded. In spite of all remedies which had been tried the condition had gradually grown worse. The patient also had Dupuytren's contracture of the fingers, and had formerly suffered from attacks of gout. Although no objective signs of the latter disease could be demonstrated, it seemed probable that both the induration of the penis and the Dupuytren's contracture were of gouty origin.

November 19, 1906.

1. The Therapeutical Value of Complete Rest of the Voice in the Institutional Treatment of Laryngeal Tuberculosis, By F. SEMON.
2. A New Method of Illumination of Canals and Cavities, By VON SCHRÖTTER.
3. The Foundation of Modern Rhinolaryngology, By G. KILLIAN.
4. Killian's Method of Direct Bronchoscopy in Extraction of Foreign Bodies from the Bronchi, By O. CHIARI.
5. The Contagion of Ozæna, By M. LERMOYEZ.
6. The Significance of Anæsthesia of the Entrance of the Larynx in Paralysis of the Recurrent Laryngeal Nerve, By F. MASSEI.
7. Contributions to the Study of Disturbances of Vision and Blindness Produced by Disease of the Posterior Ethmoid Cells and of the Sphenoid Sinus, By A. ONODI.

2. Illumination of Canals and Cavities.—Von Schrötter has devised an apparatus for the illumination of canals and cavities in the human body, which consists of a glass tube illuminated by four incandescent lights enclosed above with an aperture in their midst directly over the tube. The tube is introduced into the cavity to be investigated and the condition of the walls of the latter immediately becomes visible to the eye of the observer at the aperture.

3. The Foundation of Modern Rhinolaryngology.—Killian speaks first of the general foundation, dealing with the historic development and delimitation of modern rhinolaryngology, the endoscopic methods, and the general anatomicophysiological and clinical foundation of the specialty. Then he speaks of its special basis, dealing with the local treatment, and finally of the border regions which rhinolaryngology holds in common with other specialties, such as otology, ophthalmology,

dermatology, dentistry, neurology, pædiatrics, rarely gynæcology, as well as general medicine and surgery.

4. **Extraction of Foreign Bodies from the Bronchi.**—Chiari reports two cases in which foreign bodies were removed from the bronchi in which they were seen, recognized, and seized with the aid of the bronchoscope.

5. **The Contagion of Ozæna.**—Lermoyez asserts that there are a great many lines of parallelism between gonorrhœa and ozæna, a few of which are that as the gonococcus produces a purulent inflammation in the mucous membrane of the urethra, so the "ozænococcus" in the nasal mucous membrane produces a purulent rhinitis, and that therefore ozæna is contagious, that just as gonorrhœa may become a chronic gleet, so the ozænic rhinitis frequently passes into chronic atrophic rhinitis, and that as gonorrhœa produces more or less slowly a sclerosis of the urethral mucous membrane, so does ozæna more or less slowly produce sclerosis and atrophy of the nasal mucous membrane. He concludes that stringent prophylactic precautions should be adopted to prevent the spread of ozæna, particularly among children.

6. **Anæsthesia of the Entrance to the Larynx in Paralysis of the Recurrent Laryngeal Nerve.**—Massei states that (1) laryngeal anæsthesia is present even in those cases of paralysis of the recurrent, which do not present Avelli's syndrome; (2) the disturbances of sensibility are greater when the left nerve is the one affected, whence it may be concluded, as this nerve is larger and longer than the right, that the left recurrent contains a greater number of sensitive fibres; (3) the circumstance that the anæsthesia is confined to the entrance into the larynx, and that cough is excited by touching the vocal cords, suggests that the inferior laryngeal nerve supplies the sensibility of the subglottic space, perhaps from the vocal cords downward.

7. **Disturbances of Vision Due to Disease of the Posterior Ethmoid Cells and of the Sphenoidal Sinus.**—Onodi points out in detail the varying relationship between the posterior ethmoidal cells, the sphenoidal sinus, the optic canal, and the optic sulcus as shown by a number of anatomical investigations which he has made. He describes thirty-five different variations in the anatomical relationships, which he thinks furnishes the anatomical basis for the explanation of retrobulbar neuritis and optic atrophy of nasal origin. The paper is worthy of careful study in the original.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES.

December, 1906.

1. Infantile Mortality and Its Principal Cause—Dirty Milk, By C. Harrington.
2. A Clinical Study of Eighty Cases of Exophthalmic Goître, By W. G. Thompson.
3. A Year's Experience in Intestinal Surgery, By J. B. Deaver.
4. Accidents Following Thoracentesis. Pneumothorax, Sudden Death from Exploratory Puncture, By G. G. Sears.
5. The Differential Diagnosis of the Diseases Hitherto Grouped Together as Rheumatoid Arthritis, Chronic Rheumatism, Arthritis Deformans, etc., By P. W. Nathan.
6. Exophthalmos in Leucæmia, By J. B. Herrick.
7. Typhoid and Paratyphoid Spondylitis with Bony Changes in the Vertebræ, By T. McCrae.
8. The Value of the Differential Leucocyte Count in Diagnosis, By F. E. Sondern.
9. The Early Diagnostic Signs of Insular Sclerosis, with a Clinical Report of Four Cases, By S. Brown.
10. The Principles of Treatment of Renal Insufficiency, By R. B. Preble.
11. The Treatment of Tuberculous Laryngitis with Culture Products, with Observations Upon the Action of Specific Inoculations in the Treatment of Tuberculosis, By F. M. Pottenger.

1. **Infantile Mortality and Its Principal Cause—Dirty Milk.**—Harrington finds the highest infantile mortality in this country in the District of Columbia, the lowest in Michigan. In Europe, Russia is the highest and Scotland the lowest. The chief causes in all countries are the gastrointestinal diseases. In the summer months, especially August, the mortality is highest, in the three winter months it is lowest. The first three months of life constitute the most dangerous period. Congenital debility is next to diarrhœal diseases in the infantile mortality rate. The infantile mortality dependent upon defective infant feeding is a mortality of hand fed infants. High infantile mortality is a class mortality, especially prevalent in cities and towns with their unsanitary habitations and unsanitary ways of living, especially among the poor. Illegitimacy has great bearing on infantile mortality, except in communities in which foundlings are cared for in public institutions. Cow's milk is not the natural food of human infants, and unsanitary dairying with its accumulations of harmful bacteria is the chief factor in causing high infantile mortality. The price of milk, considering the cost of preparing it for the consumer, as it should be prepared, is believed to be insufficient. The remedy consists in insisting that all milk which comes to the market should be under sanitary conditions at every stage of its preparation.

2. **Exophthalmic Goitre.**—Thompson offers the following conclusions from the analysis of eighty cases: 1. In the majority of cases an acute febrile toxæmia will ultimately develop in which the symptoms will be goître, tremor, tachycardia, and exophthalmos, and in addition fever to 103° or 104° F., acute dilatation of the heart, gaseous pulse, dyspnœa, præcordial pain, gastrointestinal disturbance, œdema of the legs, sweating, and erythema. 2. The acute toxæmia symptoms may last several weeks, and may resemble and suggest those of malignant endocarditis. 3. The cause of the toxic symptoms which occur so acutely in the course of a chronic disease may be the intercurrence of some mild infection; for example, tonsillitis, influenza, bronchitis, or gastrointestinal disturbance. In most of the cases analyzed the exacerbation of the goître was attributable to the secondary infection. In some of the cases the infection recurred repeatedly. 4. The acute dilatation of the heart, which is apparently the result of the toxæmia, frequently causes a fatal issue.

4. **Accidents Following Thoracocentesis.** — Sears notes the greatly improved results which have attended this operation since surgical cleanliness has been its customary accompaniment. He thinks, however, that there are many fatal accidents which are not reported. Sudden death after the removal of only small quantities of fluid is not very uncommon, and it may follow simple exploratory puncture. In the majority of cases in which the lung tissue is injured, it is probably true that the wound heals quickly, and the air of the pneumothorax is rapidly absorbed. A serous effusion in some instances has been converted into an empyema, and sudden death has occasionally occurred from suffocation due to the rapid inrush of air. It is thought that this result might be avoided, in some cases, by immediate resort to free incision of the chest wall. Five cases have been reported in which the aspirating pump was accidentally reversed and the condensed air in the bottle was blown into the chest. Other accidents have been explained as caused by suction of air through an unguarded needle. Exploratory puncture, in the absence of fluid, may give rise to pneumothorax, or to a subcutaneous emphysema without pneumothorax. The rapidity of evacuation may also be an important factor in case of injury, a solid or nearly solid lung being unable to expand quickly enough to occupy the space from which the fluid has been withdrawn.

5. **Rheumatoid Arthritis, Chronic Rheumatism, Arthritis Deformans, Etc.**—Nathan concludes from the analysis of the symptoms and x ray findings in the rheumatoid diseases which he has made that these diseases have no direct connection, except that they all affect the joints. He thinks the various forms which he has described are distinct diseases. The term rheumatoid should be dropped as it is meaningless in its present use, and only leads to confusion. The objection to the various classifications of the joint diseases heretofore proposed is that the names are not sufficiently specific, the same name being often used for two different conditions. The names do not indicate distinct clinical and pathological conditions. The classification which he proposes overcomes these objections, and is applicable to joint diseases in general. The names proposed are not new, but they are simple, and consider the general as well as the local conditions, and definitely express both the clinical and the pathological phenomena. He proposes as general divisions: (1) Inflammatory or infectious joint diseases; (2) trophic joint diseases, and he subdivides each into synovial and osseous forms.

7. **Typhoid Spondylitis.**—McCrae thinks the condition of typhoid spondylitis has often been overlooked. This condition usually appears during convalescence, and is more frequent in males than in females. Trauma is the cause only in rare instances. The typhoid fever in most of the reported cases of spondylitis has been mild. Definite organic chances probably occur in some of the cases. In those cases which give no evidence of local disease, it is probable that there is a pathological process, apart from a neurosis. The general features of the condition suggest the probability of some organic changes in the spine. The similarity of the changes found in this condition and those in the spondylitis found in other infections, especially arthritis deformans suggest that the latter may be due to infective agents.

8. **The Value of the Differential Leucocyte Count in Diagnosis.**—Sondern expresses the opinion based on an experience of eight thousand cases that this is a factor of great importance in the diagnosis and prognosis of many inflammatory conditions. The increase in the relative number of polynuclear cells is an indication of the severity of the toxic absorption, and the degree of leucocytosis is an evidence of the body resistance to the infectious material. It was also found that purulent exudates were rarely present with low polynuclear percentages, irrespective of the leucocyte count. High polynuclear percentages almost invariably indicate purulent exudates even when the total leucocyte count is low. In children the results of this method of procedure are less satisfactory than in adults. When pus is so confined that there is no toxic absorption, or when a purulent exudate results from tuberculous or typhoid infection, then there is no leucocytosis and no polynuclear increase. The author believes that the method merits further trial and investigation, and that its failures should only stimulate us to further efforts.

ARCHIVES OF THE ROENTGEN RAY.

December, 1906.

Tuberculosis Number.

1. The Position of the Radiographer in the Early Diagnosis of Pulmonary Tuberculosis, By Stanley Green.
2. Tuberculosis, By Foveau de Courmelles.
3. The Treatment of Pulmonary Tuberculosis in Children, By James Burnet.
4. Some Points in the Sanatorium Treatment of Pulmonary Tuberculosis, By C. Muthu.
5. A Comparison of Forms of Radiant Energy, By William Benham Snow.
6. The Action of X Rays on Hæmoglobin in Vitro, By H. Bordier.

1. **The Position of the Radiographer in the Early Diagnosis of Pulmonary Tuberculosis.**—Green says that his method of examination is twofold, 1, by the screen, and, 2, by the photographic plate. He considers the position which the expert radiographer occupies to be the following: 1. By means of a screen examination he is able to demonstrate the two earliest signs of pulmonary tuberculosis, viz., unilateral limitation of movement of the diaphragm and failure of the apical region to brighten up when the patient takes a deep inspiration. 2. He is able by the screen examination to locate the position and extent of the lesion in the lung or lungs, and to confirm this by the photographic plate. The points to which attention must be paid are: The position and movements of the diaphragm, the bony walls of the thorax, and the organs contained in the thoracic cavity. 3. In a case of pleural effusion he is able to give a definite opinion of the condition of the portion of lung lying above the shadow cast by the effusion. 4. By a series of examinations he is able to trace the progress of the disease.

2. **Tuberculosis.**—Foveau de Courmelles states that in his hands electrolytic medication with potassium iodide and creosote, carried out by means of special rheophores applied over cavities, has since 1890 resulted in an improvement in fifteen cases, but the application is unsuited for patients who are emaciated or inclined to echymoses. In cutaneous tuberculosis the voltaic arc with carbon electrodes is the surest and most penetrating; the iron arc only affects the most superficial parts, whilst the x ray, although more rapid, is more dangerous. Finsen's method he has made use of within eighteen months in some 171 cases with an immediate improvement. As regards lupus nodules, radium, being easy to handle, gives good results (except for the danger of a possible telangiectasis), with activities of one, five, or eight hundred thousand x, when applied for thirty, fifteen, and ten minutes, respectively. Treatment by eucomides by means of the author's regulatory electrode of high frequency gives results as rapid and as good as those brought about by radium treatment, and without any risk. Osseous tuberculosis also yields to the voltaic arc, which is equally efficacious in tuberculous adenitis (thirty-five cases of tuberculous glands treated during the same time). Compression and other means employed to insure penetration are by no means indispensable. As regards the x ray it may be said that, although healing is rapid, relapses may take place.

3. **The Treatment of Pulmonary Tuberculosis in Children.**—Burnet reminds us that in children pulmonary tuberculosis is very often induced by infection of the bronchial or mediastinal glands during convalescence from an attack of measles or of whooping cough, especially when these diseases are complicated by bronchitis or by bronchopneumonia. Consequently prophylaxis is of great import. When once the disease manifests itself, active treatment must be at once decided upon. The essentials are undoubtedly fresh air, sunlight, temperature without extremes, sheltered localities with pine forests; small meals should be given frequently, at regular hours. Of drugs, important is cod liver oil, ichthyol, creosote, liquor arsenicalis in disturbed digestion, hypophosphites, etc.

5. **A Comparison of Forms of Radiant Energy.**—Snow considers the therapeutical uses of light collectively and in conjunction with heat radiation. These combined radiations contain a potent means, including all of the effects derived from the usual sources of light: (1) The rays of the sun, or solar light; (2) the electric arc; and (3) the incandescent light. Solar light, as employed in solaria, may be condensed by the use of lenses both for the purpose of separating the higher frequencies and in collected parallel rays for the purpose of deriving effects of greater intensity than

from normal sunlight. The objections to the use of sunlight are chiefly climatic. Compared with the electric arc and the incandescent light, the sun's rays contain a larger percentage of the chemical rays than the rays from the incandescent light, and a smaller percentage than the rays from the electric arc. The Röntgen ray is unique in many of its qualities, both physical and physiological, when compared with the spectral rays. Ultraviolet light bronzes and blisters the skin to a marked degree, either from sunlight or to a still greater degree from the electric arc, because the radiations from the arc are richer in ultraviolet rays. The indications for the use of radiant light and heat include (1) the relief of all conditions arising from exposure to the x ray in which the processes of metabolism have been inhibited, as when there is sterility, lowered vitality of tissues, or when the secretions or other functions have been suspended. (2) These forms of radiant energy are valuable in conditions of poor metabolism in which the secretions of the skin, from any cause, have become inactive, or where an active elimination by all the emunctories is indicated, as in Bright's disease, rheumatism, or gout, in which conditions its actions are undoubtedly superior to dry hot air, embracing as it does the influence of both light and heat upon the functions of metabolism. (3) In arteriosclerosis and in other conditions where the heart is working against a condition of high arterial tension, when it relieves the labor of the heart by dilating the capillaries, thereby increasing the circulation in the periphery of the body. For the same reason it is indicated in all septic and toxic processes, favoring in a large degree the elimination of the products of infection. (4) The application of light and heat radiations by the employment of various localizing lamps are remarkably efficacious in the treatment of local infections and inflammatory processes. For this purpose the local uses of such means as the swinging incandescent lamp renders valuable service. These lamps, to be effective, should be of high candle power. These measures in local inflammation and superficial infection are usually best employed, and with excellent results, in connection with other physical agents. The light bath as a means of administering radiant light and heat to the surface of the body is the most convenient method of employing these radiations for its general effects.

Letters to the Editors.

EVENTRATION EXTRAORDINARY.

227 Sanford Avenue,
Flushing, N. Y., *November* 27, 1906.

To the Editors: On November 13, 1906, about 6 o'clock in the morning, I was called upon to attend Mrs. G. Her husband stated that she had had an umbilical hernia for some time, and that it had broken through the abdominal wall the night previous, about 9 o'clock, but that he had not called in a physician, because he did not wish to disturb any one's rest.

I went to the patient's home and found her in great pain and suffering severely from shock. Between her thighs, and underneath the thighs and the back, were at least five feet of small intestine. She was lying on her bowels, but was too weak and suffering too severely to appreciate what she was doing. Most of the protruded intestine could not be put back into the abdominal cavity. There was no hæmorrhage of any account. She died about 9.30 a. m. the same morning.

John F. Dick.

AGAIN THE WORD PHRENITIS.

144 Lexington Avenue,
New York, *December* 7, 1906.

To the Editors: Apropos of the recent discussion in your valuable journal about the word "phrenitis," which has taken place between Dr. B. M. Randolph and Dr. A. Rose, I have been looking over an old medical book on the *Theory and Practice of Physic,* by George Gregory (Philadelphia, 1829), and have been particularly interested in the way that word was used. To quote: "Phrenitis, or acute idiopathic inflammation of the brain or its membranes, is a disease so singularly modified in its principal features by the circumstances of age as to require that it should be considered separately as it occurs in adults and in children. The distinction between 'phrenzy' and 'water on the head,' as acknowledged by sound pathology as well as by the world at large; but the former teaches that the two diseases run into each other by insensible degrees. The former is an acute, the latter a subacute inflammation." The heading of this chapter is Phrenitis and Hydrocephalus, and all the acute, subacute, and chronic forms of inflammation of the brain are considered, including the symptoms, nature, and treatment of delirum tremens.

Such letters ought to be of great benefit to the medical profession, and while I do not care to take up another man's quarrel, there is no doubt in my mind that Dr. Rose is perfectly right.

We have just passed through the era of "polypharmacy," and are about ready to use one drug to its physiological effects, and it is to be hoped that the near future will bring forth a change in our onomatology so as to make it more scientific and exact.

Walter B. Jennings.

1744 N Street, N. W.,
Washington, D. C., *December* 13, 1906.

To the Editors: It is chiefly a question of fact that induces me to impose further on the patience of the *Journal's* readers touching this subject. In Dr. Rose's reply (*New York Medical Journal,* November 24, 1906) to my criticism of his use of the word "phrenitis," he says: "Diaphragma is Attic, the only *anatomical* name in Greek for diaphragm, since Attic became the national language." I do not know precisely when Attic became the national language, but I do know that Plato wrote in Attic Greek. In the writings of Plato (*Timæus,* 70, A) appears this passage: "Tas phrenas diaphragma eis to meson auton tithentes (*τὰς φρένας διάφραγμα εἰς τὸ μέσον αὐτῶν τίθεντες*)"—"and placed the midriff to be a wall of partition between them" (*translation of B. Jowett, M. A., regius professor of Greek in the University of Oxford*). Here we have the two words used side by side by a writer of Attic prose, a philosopher discussing anatomy, *phren* being used to mean diaphragm, and *diaphragma* being given its primary meaning of a partition.

Dr. Rose has not represented me correctly in stating that I said "the termination -itis should mean inflammation." I said: "The termination -itis is accepted as meaning inflammation of the part to which it is affixed." No one who wished to understand me could have taken this as meaning anything more than a statement of an existing condition in our medical language. I am not one of those who think that -itis is the Greek word for inflammation.

My objections to the campaign Dr. Rose is carrying on for a reformed medical language are not based, however, on mere questions of philology. I admit that there are many words of Greek and Latin origin that do not conform to classical models. I do not question Dr. Rose's scholarship or his qualifications for giving us the Greek as it should be spoken. But I am convinced he is engaged in a futile task. Medical language is not a mere nomenclature of concrete objects. It is subject to the same influences that govern language in general. Language is for use rather than for admiration, and we cannot make or alter it by decree. People who have borrowed from other tongues

have always modified the original to suit their needs and convenience. I do not believe that the great body of practitioners, whose suffrages will decide this question, will ever submit to the cumbersome forms and inflections of the Greek for the sake of what Dr. Rose calls scientific nomenclature. Some stronger reason than fidelity to the purity of the Greek will have to be presented to effect a substitution of "acmai" for "acne," of "leucomatometer" for "albuminometer," of "actinomycetosis" for "actinomycosis," and of "epipephycitis" for "conjunctivitis."

I have long ceased to worry over corrupt Greek and Latin words, because I realize that they are inevitable. I can stand a Greek or Latin root with a home made inflection, and do not chafe at even a hybrid word. I can endure with patience such "monstrosities" as "albuminometer," "milliampèremeter," and "gas meter." I believe Dr. Rose's agitation will meet the fate of the numerous similar ones that have preceded it. The stream cannot rise higher than its source. Medicine will have an exact and scientific language only when it becomes an exact science.

B. M. Randolph.

Proceedings of Societies.

NEW YORK OBSTETRICAL SOCIETY.

Meeting of November 13, 1906.

The President, Dr. Brooks H. Wells, in the Chair.

The Nature of Shock.—This was the subject of a paper by Dr. Eugene Boise, of Grand Rapids, Mich. Examples of divergent opinions as to the nature of shock were cited, and then Dr. Boise attempted to show that the essential cause of shock was excessive sympathetic irritation, manifested mainly by a tonic contraction of the heart and arteries. In favor of this theory was the fact that after death from fright the left ventricle had been found ruptured, indicating a powerful contraction of the heart and probably of the arteries.

He did not agree that Dr. Crile's experiments indicated that the cause of shock was an exhaustion or a breaking down of the vasomotor centre, but thought rather that they showed that there was an excessive irritation of both the vasomotor and cardiac centres, whereby the arteries and heart were both almost spasmodically contracted. There was an exaggerated systole, with a very imperfect diastole. The condition of the heart was of greater importance than that of the arteries, inasmuch as, by reason of its contraction during systole and its very imperfect relaxation during diastole, the heart could not receive much blood from the veins, and therefore could not send much into and through the arteries; wherefore, however strongly the arteries might respond to vasoconstrictor impulses, the pressure would be low, because there was not blood enough to distend them.

In Dr. Crile's experiments severe manipulation of the testicles was always followed by an immediate fall in blood pressure, with no appreciable preliminary rise, and therefore with no evidence of uncomplicated stimulation of the vasoconstrictors. It was impossible to understand how there could be exhaustion of these nerves without some evidence of previous stimulation. These impulses were severe enough to produce profound shock where neither the vasomotor centre nor the stellate ganglia had been touched; but they could not produce shock or any appreciable change in the blood pressure if the stellate ganglia had been previously removed. It would seem, therefore, that the impulse that caused shock passed through the stellate ganglia (from which augmentor impulses were sent to the heart).

In autopsies made by Dr. Crile on animals that had died of shock, the veins were found full, sometimes engorged and tense, while the heart and arteries were empty, and the heart could send but little blood through the arteries because it received but little. Dr. Crile said it was because the venous pressure was so low that the blood could not flow from the distended veins into the heart. It would seem, however, if we considered the elasticity of the venous walls, the *vis a tergo,* the continuous pull of the elastic lungs and the suction of the dilating heart, that the blood would pass from such veins into a heart with normal systole and normal diastole. Dr. Boise thought that the veins were filled with blood, because the heart contracted so spasmodically that there was almost an obliteration of the ventricular cavities even in diastole.

Krehl stated that in the vasomotor paralysis found in infectious diseases there was no stasis in the veins of the general circulation, and implied that when there was marked stasis in the veins of the general circulation the trouble was at the heart—heart failure (or heart spasm), and not vasomotor paralysis.

Adrenalin had been shown experimentally to produce dilatation of the heart, and the benefit derived from the administration of it in shock was not the raising of blood pressure, but rather in that, through contraction of the coronary arteries, it caused an acute anæmia of the heart muscle and a consequent loss of energy. The heart spasm was relieved, and a normal amount of blood could be received by the ventricles from the overdistended veins and be forced into the aorta. The empty arterioles became distended, blood pressure was raised, and the general condition of the patient was improved.

He recapitulated the factors in the theories of vasomotor exhaustion and of cardiac spasm, as he had called it, as derived from conclusions based on these experiments of Dr. Crile's. Dr. Crile based his conclusions of vasomotor exhaustion mainly on the facts that stimulation of nerve fibres might cause either an increase or a decrease of blood pressure, and that continued or repeated stimulation caused finally exhaustion of the vasomtor mechanism, the *pressor,* or *constrictor,* nerves becoming exhausted earlier than the *depressor,* or *dilator,* nerves.

Therefore, since in these experiments severe stimulation of a peripheral nerve trunk invariably caused a primary rise in pressure, and since continued stimulation finally failed to cause any rise in pressure, but, on the contrary, caused a persistent fall, he concluded that the condition was one of vasomotor exhaustion with paralyzed arterioles. The heart and arteries became empty and remained empty because of low venous pressure. The heart was neither exhausted nor unusually stimulated. It was in a condition to receive blood from the veins, but could not do so because of abnormally low venous pressure. The rapidity of the heart's action was not merely because of direct stimulation of the cardiac accelerator nerves, but because of the effort of the heart to overcome or restore the lost arterial pressure. On the other hand, he (Dr. Boise) contended that the low blood pressure of shock depended on cardiac spasm, as he had termed it, because of conclusions to which he was forced by these same experiments.

Severe stimulation of peripheral nerve trunks would cause a primary rise in pressure, with ultimate persistent fall, if the vasomotor centre and the stellate ganglia were undisturbed. But removal of these ganglia, the vasomotor centre remaining undisturbed, prevented any marked variation in pressure, however severe the stimulation might be. Again, crushing the testicles invariably caused immediate and pronounced fall in pressure with no primary rise, if the stellate ganglia were undisturbed; but if they were destroyed, no low pressure could be produced, however normal

the vasomotor centre might be. Normal stellate ganglia (from which augmentor impulses were sent to the heart) were necessary for the production of shock.

Moreover, Dr. Crile had stated in his record of experiment XCIV (and others) that, coexistently with the rise in pressure caused by stimulation of the sciatic nerve, there was always an increase in the force of the heart beat. It might be, of course, that the increased vasoconstriction (increasing peripheral resistance) excited the heart to increased energy to maintain the circulatory equilibrium, or it might be that irritation of the sciatic caused reflex irritation of the cardiac augmentors. Severe irritation of the sciatic would naturally cause severe irritation of the augmentors. Finally, when the irritation of the sciatic was severe enough to cause primary fall in pressure—shock—there must also have been severe irritation of the augmentors with exaggerated systole and greatly impaired diastole—a condition that Howell called "tonic contraction" and that Dr. Crile had found in his autopsies.

Irritation of the peritonæum caused a persistent fall in pressure with no primary rise, no evidence of constrictor stimulation. Also, on opening the abdomen and irritating the peritonæum, the arteries which were full and pulsating strongly were seen to become gradually smaller and pulseless, the veins at the same time becoming distended. The record of autopsies showed the heart and arteries almost invariably empty and the veins of the entire body full, often engorged and tense.

Concerning the existence of these conditions there could be no contention, but only as to the cause. The arteries were empty. They remained so because the blood could not flow back through the capillaries and could only reach the arteries from the veins through the heart. If it did not do so, there must be an obstacle at the heart so that the veins could not unload.

Vasomotor exhaustion could not be the pathology of shock. It must be severe irritation of the entire sympathetic system, especially manifested in cardiac and possibly arterial spasm. Dr. Crile said this was because of low venous pressure. This could hardly be the explanation, because there was no impairment of the heart's energy, and normally, when half of the blood was in the arteries, there was no trouble about the veins unloading into the heart. And when they were engorged and tense, the heart acting normally, though rapidly, there should be even less difficulty about the blood flowing from the veins into the heart. But it could easily be understood how in shock, even though the veins were engorged and tense, they could not empty into a heart that, as shown by subsequent autopsy, was spasmodically contracted, its ventricles remaining empty because, by reason of cardiac spasm, their cavities were obliterated.

Dr. George E. Brewer said that if one reviewed our knowledge of shock he would recognize that until quite recently practically nothing had been known of the nature of shock, though the condition had been recognized for years and even centuries, and various methods had been in vogue for its treatment. Many years ago it was discovered that an important factor in shock was a diminished output of blood into the arterial system. Later this was followed by the observation of the fact that there was an engorgement of the venous system, especially in the splanchnic area. One factor that should be emphasized more in the consideration of the theories of shock was the piston action of the diaphragm in sucking the blood from the veins and pouring it into the heart. Although the observations of Dr. Boise seem very logical, still there were certain conditions to which Dr. Crile had called attention that should not be lost sight of. First, he observed that stimulation of sensory areas was accompanied by a rise in the blood pressure, followed by a fall; a second stimulation was accompanied by a slight rise and followed by a greater fall; and, finally, when the stimulus was continued, there was no rise, but a depressed condition, until it constituted a severe or even fatal shock. This strongly suggests that the vasomotor system had something to do with shock as we saw it. The observations and experiments of Dr. Crile, Dr. Howell, and others had brought forth many practical and important points regarding the treatment of shock. Formerly we treated shock by pouring into the patient cardiac stimulants, but Dr. Crile had pointed out that the condition of the heart itself was not one of exhaustion, because, when we gave the heart something to act upon, it would act normally, showing conclusively that the trouble was not there. This was clearly shown when we introduced into the veins saline solution; we introduced something into the circulation for the heart to act upon. The practical results that had been brought forth were first, the great value of intravenous injections; secondly, that the ordinary cardiac stimulants were of less value; thirdly, that the use of adrenalin was accompanied by striking results in many cases, particularly when introduced into the venous system with the saline solution.

Dr. J. Riddle Goffe said that when Dr. Boise presented his theory of shock, five years ago, before the American Gynæcological Society, it had appealed to him strongly. From what he had read he found nothing to explain the condition of shock so satisfactorily as Dr. Boise's presentation of it. So far as he knew, it was absolutely original with him. When Dr. Crile read his paper before this society, three years ago, he then, in the discussion presented this theory of Dr. Boise's. He did not feel that Dr. Crile had answered satisfactorily the arguments presented. Dr. Boise had taken the facts presented by Dr. Crile and by his interpretation of them had arrived at an entirely contrary conclusion, viz., that the sympathetic and spinal nerve centres, instead of being paralyzed, were in a state of exalted irritation, and the heart and arteries were powerfully contracted. As interpreted by Dr. Boise, his theory seemed to explain the phenomena of shock most satisfactorily. Until the introduction of intravenous infusions of saline solutions, we had always felt that the sheet anchor against shock was morphine. When we studied the opinions of physiologists, we found that some maintained that morphine was a cardiac stimulant and others that it was a cardiac sedative. So that it was difficult, reasoning back from therapeutical effect to pathological conditions, to reach any definite conclusions from the therapeutical effects of morphine as to whether the nerve centres were paralyzed or excessively irritated. Dr. Brewer had emphasized the use of saline solution, and we accepted its use as being the most efficient agent for the relief of shock that we knew of.

Dr. J. E. Janvrin asked how a saline solution could act beneficially when the veins were overdistended and the heart was unduly contracted. He could not see the physiology of it except in cases in which there had been a great loss of blood.

Dr. Le Roy Broun said that when Dr. Crile brought out his work on blood pressure in surgery, he had read it with much enthusiasm and care, and so enthusiastically had he accepted his deductions that he bought one of his rubber suits to carry out his teaching. Unquestionably this would raise blood pressure, but it was clumsy and difficult to apply in abdominal cases. The practical conclusions that Dr. Crile drew in the therapeutical value of various remedies ordinarily used for shock would seem to bear out as well the contention of Dr. Boise that the condition was one of cardiac spasm as it did Dr. Crile's own conclusion that the condition was one of vasomotor exhaustion. For example, Dr. Crile stated that digitalin and strychnine were of no value. This would be true in cardiac and arterial spasm as well as in vasomotor exhaustion. Again, Dr.

Crile had shown that morphine lessened shock. This fact was much more in accord with the contention of cardiac spasm of Dr. Boise than with that of vasomotor exhaustion. He did not think that the last word had been said on this important subject. Concerning the infusion of salt solution, Dr. Crile had shown that this was of value only in shock associated with collapse due to marked loss of blood. The salt solution replaced the blood that had been lost, but could do no more. Frequent infusions overloaded the bloodvessels and caused a transudation into the tissues, waterlogging them. Dr. Crile found no benefit in severe shock except from adrenalin and external pressure, and, on account of the uncertainty of the action of adrenalin, he hesitated to advise its use. The way in which adrenalin raised blood pressure he had not understood until Dr. Boise had explained it to-night. The explanation of its action was another argument in favor of Dr. Boise's contention. He stated that the drug contracting the coronary arteries caused anæmia of the heart muscle, thus relieving the spasm and permitting the blood from the distended veins to pass through the heart. His own practice in extreme shock during the past two years had been to use morphine at regular and frequent intervals, and at the same time to apply external pressure by means of Esmarch's bandage. He used hot salt solution for the benefit of the heart, to replace the blood lost and to stimulate the kidneys.

Dr. R. A. Murray said that, in regard to adrenalin, we knew that it was an efficient agent in raising blood pressure and a powerful one in the treatment of asthma. Here there were tonic contractions of the unstripped muscle fibres of the bronchioles, and lately a number of experimenters had used adrenalin in severe cases of asthma, with the immediate effect of relaxing this spasm of the bronchioles. Since the heart muscle was of the same character as that of the bronchioles, adrenalin should relax that muscle as well. And if in shock the heart was in a condition of tonic contraction, as Dr. Boise stated, it seemed logical to use adrenalin in small doses to relax this tonic contraction.

Dr. George Tucker Harrison said that he had always had the view enunciated by Fischer, Seabrook, and others, that shock was a paralysis of the vasomotor centres in the medulla oblongata, a reflex phenomenon due to injury to the sensory nerves. But certainly, as stated by Dr. Boise, the experiments of Dr. Crile were susceptible of another explanation which seemed to be exceedingly plausible. In regard to the use of saline infusion in cases of shock, it was his opinion that it was of great value, particularly when the shock was accompanied by great loss of blood.

Dr. Andrew F. Currier asked Dr. Boise why in cases of obstetric injury, such as rupture of the uteris, or in high forceps or version operations, the effects of shock were more severe and more persistent than in surgical injuries of the same magnitude in other parts of the body. From the narration of experiments, severe injury of the uterus seemed to have had but little influence in lowering blood pressure, and this did not seem to agree with clinical experience. The suggestions in regard to veratrum viride were interesting, as obstetricians realized that in eclampsia this drug above all others decreased the blood pressure and reduced the rapidity of the heart's action.

Dr. Herman J. Boldt would like to ask for the points of distinction between shock and collapse. Many persons believed that shock existed, when in reality collapse was present.

Dr. Joseph B. Cooke had been astonished at Dr. Currier's remarks about shock after severe version and high forceps operations, as he had seen a great number of these operations and had found that women stood them well unless they became septic. With rupture of the uterus the conditions were different, as the peritoneal cavity was opened and there was severe shock.

Dr. Ralph Waldo thought that facts bore out the theory that had been advanced to-night. Amyl nitrate was an efficient remedy in shock, and this agent would do what the reader of the paper had suggested. In severe operations, not where there had been much loss of blood, but where the patient had been subjected to abdominal irritation, it was his habit to discontinue the use of ether or to use it only in very small quantities, and to give the patient a hyperdermic injection of morphine. Recently he had performed a large number of operations *per vaginam,* and it was his experience that there was less shock than when the abdomen was opened from above.

Dr. Dougal Bissell recalled four or five cases of collapse following obstetrical operations. The first case was treated by intrauterine douches of hot water, and the patients recovered. In two cases he had used hot enemata.

Dr. Florian Krug would like to ask if there had been any severe hæmorrhage in any of these cases.

Dr. Bissell said no.

Dr. H. N. Vineberg would like to emphasize the point brought out by Dr. Boldt, that there was a difference between shock and collapse. Many authorities had failed to give us a good definition of it. Shock was made to cover a great many things, such, for instance, as loss of blood during an operation. In his own experience he had always given saline solutions in those cases in which he had had any doubt whether the patient was suffering from shock or from internal hæmorrhage. In true shock there had been little or no effect. In some cases there might be a temporary effect from the use of nitroglycerin.

Dr. Boise said that the use of the saline solution had been discussed by Dr. Crile and recommended by him merely for its mechanical effect. As he put it, it increased the volume of blood and thus aided the veins to unload themselves into the heart. Dr. Dawbarn had insisted, when he presented the subject, that the solution should be given at a high temperature. This was important, but, to get its full value, it should be given intravenously, as thus it not only acted mechanically, but on the contracted heart and arteries, so that they became more or less relaxed. In this way the saline solution is most valuable. It was most valuable in cases complicated by hæmorrhage. It was rather difficult to make a clear distinction between shock and collapse. The acute anæmia from shock made the nerve centres more irritable, and they responded more readily to irritation of sensory nerves. In collapse from hæmorrhage, if uncomplicated by shock, the skin was dry and not so livid as in shock. In shock there was blueness of the finger nails, the lips, and the entire surface, because of the general venous congestion, or stasis, whereas in collapse from hæmorrhage or exhaustion or debilitating discharges (as in cholera) there was a waxy pallor instead of the livid condition. It had not occurred to him that shock was more likely to ccur or was more obstinate after obstetric than after other operations.

Book Notices.

The Treatment and Prophylaxis of Syphilis. By Alfred Fournier, Professor at the Faculty of Medicine, Member of the Academy of Medicine, Physician to the St. Louis Hospital, Paris. English Translation by C. F. Marshall, M. D., F. R. C. S., Late Assistant Surgeon to the Hospital for Diseases of the Skin, Blackfriars, London, etc. London: Rebman, Limited. New York: Rebman Company, 1906. Pp. 275-x-219 (Price, $5.)

This book consists really of the two most recent publications of the well known French author. The trans-

lator has been very faithful in rendering the French into proper English. While the first part of the dual book is a direct translation from the French, the translator has in the second part "slightly altered the arrangement and avoided certain repetitions by means of cross references."

We are glad to see this translation, for it is our impression that only one other book of Professor Fournier's has so far been translated into English—*La Syphilis et le marriage.* Professor Fournier is so well known that it is to be regretted that no more of his classical works have been rendered into English.

In the first part the author speaks of the treatment of syphilis, emphasizing the treatment as against the doctrine of expectation, and he goes into detail as to the therapeutical action of mercury and potassium iodide and the method of administration of these two specifics. In chapter xxviii, entitled Conclusions, we find the often repeated question which the patient after a faithfully executed and thorough treatment, addresses to his physician: "Am I henceforth rid of syphilis? Am I at least free? Do you think I am cured, radically cured?" Fournier's answer is "Yes, I believe you are cured, as far as I have a right to believe so scientifically. But, whatever may occur in the future, whatever disorder may affect your health, remember your former complaint. Never neglect to inform your physician of your special antecedents. Tell him plainly, tell him ten times rather than once, that you have had syphilis. . . ."

The physician must always remember that, in spite of all his efforts, in spite of a long and active treatment, it is not impossible that his patient may be liable, in the more or less remote future, to some syphilitic or parasyphilitic manifestations; for, unfortunately, there is no sign which allows the physicians in case of syphilis to affirm a cure. It is, therefore, only natural that as second part is added, the *Prophylaxis of Syphilis.* This part includes lectures and reports from such early dates as 1877 up to 1902. Very rightly says the translator: "The problem of the prevention of syphilis is one which sooner or later will have to be grappled with by all nations, and that nation which first successfully deals with the problems will survive in the struggle for existence." This is a timely warning which should be listened to by every man who does not close his eyes and ears to an existing evil, especially by a physician, and Dr. Fournier's ideas, recommendations, and advice will prove to be of the highest practical value.

Tuberculosis; Its Origin and Extinction. By W. Pickett Turner, M. D. London: Adam & Charles Black, 1906.

In this little monograph the author has opened a new field of research and opportunity of a controversy that may be prolonged and possibly bitter; he is in distinct opposition to some of the most cherished dogmas.

The book opens with a brief reference to the life histories of certain animal parasites (flukes, tapeworms, etc.), directing special attention to the fact that during different phases of their existence they partake of the hospitality of different hosts. So, too, of certain mycotic parasites, among which he places the tubercle bacillus. His main proposition is that this bacillus, as we know it morphologically in reality, has a prior form (probably sporular) of existence, and that the early host is the common Timothy grass. This is eaten by the cow, in whose body it acquires the bacillus form, and is thence transmitted by the milk and flesh to the human victim. Some, undoubtedly most, of the transmitted bacilli fall upon stony ground and perish, while a few find lodgement on a congenial soil and flourish to the discomfort and destruction of their host.

Categorically, the author's conclusions are as follows: 1. "Tuberculosis is an animal disease, and is primarily in all cases derived from cattle." 2. "It belongs to the mycotic group of diseases, bovines obtaining it from timothy and other allied grasses by natural affinity." 3. "Man acquires the disease by ingestion or inoculation; never by inhalation." 4. "It is not hereditary, neither is there any predisposition to it in the individual." 5. "The bacillus in a state of nature is a saprophyte, but becomes pathogenic in cattle when they are deprived of actinism."

Here are certainly sufficient grounds for controversy.

In the opinion of the reviewer, proposition No. 1 appears to be too restrictive. If he had said in most instead of "all" cases, we perhaps should not be disposed to quarrel with him. No. 2 presents a view that opens an entirely new field of research. If in No. 3 the author had written the word *rarely* instead of "never," it would have been in full accord with the opinion of many experienced investigators, though in opposition to the prevailing official dogmas. Proposition No. 4 is undoubtedly sound, provided we understand the word "predisposition" in a restrictive sense. By the word "actinism" in proposition No. 5 the author means free exposure to sunlight as an effective aid to the restoration of health, and with his opinion we are in entire harmony. In conclusion, we commend the book most seriously to the attention of all who have more than a perfunctory interest in the disease that yearly claims so many myriads of victims.

Traitement de la syphilis. Par le Dr. G. Rauzier, Professeur adjoint à la Faculté de médecine de Montpellier. Montpellier: Coulet et Fils, 1906. Pp. 63.

It is with pleasure as well as profit that one reads this little book on the treatment of syphilis. Rauzier's clinical lectures at the general hospital of Montpellier served as a basis for the text, and the little volume contains all the necessary information for the practical handling of syphilitic cases according to the latest views of the famous French syphilographers. Professor Rauzier has the distinction of being the first, so far as we know, to define syphilis as a "general chronic infectious disease due, to all appearances, to the *Spirochæta pallida* of Schaudinn and Hoffman." The style of these lectures is clear, concise, and easily grasped by a moderately good French scholar, and the numerous formulæ give them a practical value which will appeal to the busy doctor.

BOOKS, PAMPHLETS, ETC., RECEIVED.

Traitement de la syphilis. Par le Dr. G. Rauzier, professeur adjoint à la Faculté de médecine de Montpellier. Montpellier: Coulet et fils, 1906.

Kosmetische Hautleiden. Von Dr. S. Jessner. Würzburg: A. Stuber, 1907. Pp. 124.

Des Haarschwunds Ursachen und Behandlung. Von Dr. S. Jessner. Fünfte Auflage. Würzburg: A. Stuber, 1906. Pp. 52.

The Integrative Action of the Nervous System. By Charles S. Sherrington, D. Sc., M. D., Hon. LL. D. Tor., F. R. S., Holt Professor of Physiology in the University of Liverpool, Honorary Member of the American Physiological Society, etc. With illustrations. New York: Charles Scribner's Sons, 1906. Pp. xvi—411.

Abdominal Pain. Its Causes and Clinical Significance. By A. Ernest Maylard, M. B., B. S. (Lond.), Surgeon to the Victoria Infirmary, Glasgow, etc. Second Edition (Revised). Philadelphia: P. Blakiston's Son & Co., 1906. Pp. xiv—301.

Medizinische Anwendungen der Elektrizität. Von M. U. Dr. S. Jellinek, Assistent des k. k. Krankenhauses Wieden in Wien, beeideter ärztlicher Sachverständiger für elektrisches Unfallwesen beim k. k. Landesgericht Wien. Mit 149 Abbildungen im Text. München und Berlin: R. Oldenbourg. 1906. Pp. xix—458.

How to Suppress a Malpractice Suit, and Other Medical Miscellanies. By Thomas Hall Shastid, A. M., M. D., LL. B. Marion, Ill.: Marion Publishing Company, 1906. Pp. 128.

The Practitioner's Visiting List for 1907. Thirty Patients per week. Philadelphia: Lea Brothers & Co., 1906.

Miscellany.

The Late Dr. Leroy M. Yale.—At a regular meeting of the Society of the Alumni of the City (Charity) Hospital held on October 10, 1906, unanimous action was taken in executive session directing the secretary to draw up a resolution embodying the deep regret of the society at the death of Leroy M. Yale, A. B., A. M., M. D., one of its oldest and most esteemed members. Dr. Yale was distinguished by the unusually high character of his work, by his contributions to literature, and by his unselfish devotion to his duties. He had by his genial comradeship and by loyalty to his associates endeared himself to all who knew him; therefore be it

Resolved, That we extend to the bereaved family our heartfelt sympathy; and be it further

Resolved, That a copy of these resolutions be sent to the family and also be published in the medical press.

WILLIAM P. HEALY, M. D.,
Secretary City (Charity) Hospital Alumni Society.

The Water Supply of Philadelphia.—We have from time to time called attention to the condition of the water supply of Philadelphia, and we are led to say another word on the subject after reading the paper by John C. Trautwine, Jr., on Legislative Engineering, which appeared in the *Journal of the Franklin Institute* for December, 1906. The water supply of Philadelphia is still bad, although enough money has been appropriated to secure a full amount of pure water, provided the expenditure of the funds is left unhampered by the meddling of politicians. The Philadelphia water has always been bad, although sanitarians and physicians have been found at necessary intervals to say it is good. At the present time, some sections of the city are receiving a supply of filtered water. Mr. Trautwine, who for several years was the chief engineer in charge of the Philadelphia water works, points out in this paper the reports made from time to time to the City Councils of Philadelphia on the condition of the water supply and the suggestions put forward for its improvement and extension, all of which were ignored. He says: "If the councilmen had had the intelligence to recognize and the moral strength to admit their limitations, all might have been well. But even in their earlier days we find the city councils indulging in the pastime of hampering the experts in charge of the works, either by actual interference or by the simpler and always fashionable method of starvation." So to-day we find the well meaning laymen who are responsible for the city's water supply sanctioning, among other things, an expensive law action, which bids fair to be a failure, in an endeavor to recover $5,000,000 which they claim has been improperly paid to contractors. What Philadelphia needs is to stop crying over spilt milk. She needs to get to work and finish her filter system and to put her water supply on a scientific basis, and then to stop meddling with it. Put a competent engineer in charge of the system and let him alone. Be sure the man will not sanction the payment of improper sums to the contractors, and be sure he will not pass work that is not up to the specifications. Such a man can be found.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending December 14, 1906:

Smallpox—United States.

Places.	Date.	Cases	Deaths.
Florida—Duval County, Jacksonville	Nov. 25-Dec. 1	1	
Florida—Madison County	Nov. 25-Dec. 1	1	
Illinois: nine counties	Oct. 1-31	88	3
Illinois—South Bend	Nov. 25-Dec. 1	10	
Iowa—General	Nov. 1-30		1
Louisiana—New Orleans	Nov. 25-Dec. 1	2	
North Carolina—Greensboro	Nov. 25-Dec. 1	1	
Ohio—Toledo	Nov. 18-24	1	
Utah—Salt Lake City	Nov. 1-30	1	
Washington—Spokane	Nov. 25-Dec. 1	1	
Wisconsin—Milwaukee	Nov. 18-Dec. 1	26	

Smallpox—Foreign.

Africa—Cape Town	Oct. 23-27	2	
Canada—Nova Scotia, Cumberland County	Nov. 5	Epidemic	
Ecuador—Guayaquil	Nov. 1-15		23
France—Paris	Nov. 18-24	8	
India—Calcutta	Oct. 21-27		3
Italy—General	Nov. 15-22	5	
Italy—Milan	Nov. 9-15	1	
Mexico—Vera Cruz	Nov. 18-24	1	
Persia—Chiraz	Sept. 1-30	Present	
Persia—Guiarrouz	Sept. 1-30	Present	
Turkey—Constantinople	Nov. 12-18		1

Yellow Fever—Foreign.

Cuba—Habana	Dec. 5	3	
Cuba—Cruces	Dec. 5-11	3	
Ecuador—Guayaquil	Nov. 1-15		4
Mexico—Vera Cruz	Nov. 20-26	1	
West Indies—Barbadoes	Dec. 7	1 On S. S. Maranhense	

Cholera—Foreign.

India—Bombay	Nov. 7-13		3
India—Calcutta	Oct. 21-27		28
India—Rangoon	Oct. 28-Nov. 3		2

Plague—Foreign.

Egypt—Alexandria	Nov. 4-12	2	
Egypt—Miniek Province	Nov. 4-11	1	
Egypt—Port Said	Nov. 4-11	2	2
Egypt—Suez	Nov. 1-15	1	1
India—Calcutta	Oct. 21-27		10
Japan—Formosa, General	Oct. 1-31	32	23
Mauritius	Oct. 19-Nov. 3	50	39

Public Health and Marine Hospital Service:

List of Changes of Station and Duties of Commissioned and Noncommissioned Officers of the Public Health and Marine Hospital Service, for the seven days ending December 12, 1906:

AMESSE, J. W., Passed Assistant Surgeon. Granted leave of absence for seven days, from December 3, 1906, under Paragraph 191 of the Regulations.

BROWN, F. L., Pharmacist. Granted leave of absence for ten days, from December 22, 1906.

CLEAVES, F. H., Acting Assistant Surgeon. Granted leave of absence for twelve days, from December 13, 1906.

COFER, L. E., Passed Assistant Surgeon. Temporarily relieved from duty at Honolulu, and directed to report at Ellis Island, N. Y., for temporary duty.

FROST, W. H., Assistant Surgeon. Detailed as member of Revenue Cutter Service Retiring Board, in Baltimore, Md., December 10, 1906.

GIBSON, R. H., Pharmacist. Granted leave of absence for seven days, from November 26, 1906, under the provisions of Paragraph 210 of the Regulations.

HUME, LEA, Acting Assistant Surgeon. Granted leave of absence for thirty days, from November 27, 1906.

LYALL, R., Acting Assistant Surgeon. Granted leave of absence for three days, from December 3, 1906, under Paragraph 210 of the Regulations.

MATHEWSON, H. S., Passed Assistant Surgeon. Directed to proceed to Detroit, Mich., for special temporary duty, on completion of which to rejoin his station at Cleveland, Ohio.

RODMAN, J. C., Acting Assistant Surgeon. Granted leave of absence for five days, from December 12, 1906.

THOMAS, A. M., Pharmacist. Granted leave of absence for five days, from December 1, 1906, under Paragraph 210 of the Regulations.

WAKEFIELD, H. C., Acting Assistant Surgeon. Granted leave of absence for seven days, from December 5, 1906, under Paragraph 210 of the Regulations.

WILLIAMS, L. L., Surgeon. Detailed as member of Revenue Cutter Service Retiring Board, in Baltimore, Md., December 10, 1906.

Board Convened.

A board of medical officers was convened to meet at Seattle, Wash., upon call of the chairman, to make a physical examination of an alien reported to have trachoma.

Detail for the board: Passed Assistant Surgeon J. H. Oakley, Chairman; Assistant Surgeon H. G. Ebert, Recorder.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, for the week ending December 15, 1906:

BROOKS, WILLIAM H., Captain and Assistant Surgeon. Arrived at Newport News, Va., from Cuba, on thirty days' leave of absence.

BROWN, ORVILLE G., First Lieutenant and Assistant Surgeon. Ordered to Fort Robinson, Neb., for duty.

CARTER, WILLIAM FITZHUGH, Major and Surgeon. Leave of absence extended thirty days.

CLARK, JOHN A., First Lieutenant and Assistant Surgeon. Reported for temporary duty at Fort McPherson, Ga.

HARRIS, JESSE R., First Lieutenant and Assistant Surgeon. Ordered to Fort Assinniboine, Mont., for duty, and granted twenty days' leave of absence.

KIRKPATRICK, THOMAS J., Captain and Assistant Surgeon. Granted ten days' leave of absence.

LAMSON, THEODORE, First Lieutenant and Assistant Surgeon. Ordered to Fort Bliss, Texas, for duty.

SHIMER, IRA A., Captain and Assistant Surgeon. Reported arrival in Washington, D. C., for duty at Ancon, Canal Zone, Panama.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending December 15, 1906:

BISHOP, L. W., Passed Assistant Surgeon. Detached from the *Dubuque* and ordered to the *Iowa*.

CHAPMAN, R. B., Assistant Surgeon. Ordered to duty at the Navy Yard, Mare Island, Cal.

DESSEZ, P. T., Assistant Surgeon. Detached from the Marine Barracks, Washington, D. C., and ordered to duty at the Naval Hospital, Boston, Mass.

FOSTER, T. G., Assistant Surgeon. Detached from the *Chicago* and ordered to the *Charleston*.

FURLONG, F. M., Surgeon. Detached from the Bureau of Medicine and Surgery and ordered to duty at the Naval Hospital, Boston, Mass.

GILL, J. E., Assistant Surgeon. Detached from the Navy Yard, Washington, D. C., and ordered to the *Dubuque*.

GRIEVE, C. C., Assistant Surgeon. Detached from duty at the Navy Recruiting Station, Omaha, Neb., and ordered to duty on the U. S. R. S. *Southery*, Navy Yard, Portsmouth, N. H.

GROVE, W. B., Surgeon. Detached from the *Iowa* and ordered to duty at Newport News, Va., in connection with fitting out the *Minnesota*, and for duty on board that vessel when placed in commission.

GROW, E. J., Surgeon. Detached from the *Ohio* and ordered home to await orders.

HART, G. G., Acting Assistant Surgeon. Detached from duty at the Marine Recruiting Station, Atlanta, Ga., and ordered to duty with the Marine Recruiting Party at Dallas, Texas.

HEINER, R. G., Assistant Surgeon. Detached from the *Scorpion* and ordered to the Navy Yard, Washington, D. C.

JOHNSON, M. K., Surgeon. Ordered to duty at the Naval Hospital, Norfolk, Va.

LUMSDEN, G. P., Surgeon. When discharged by the Naval Medical Examining Board, Washington, D. C., ordered home to await orders.

MAY, H. A., Assistant Surgeon. Detached from the *Iowa* and ordered to the *Indiana*.

MORSE, E. T., Pharmacist. Detached from duty at the Naval Medical School Hospital and ordered to duty at the Naval Dispensary, Navy Yard, Boston, Mass.

OMAN, C. M., Passed Assistant Surgeon. Detached from the Naval Hospital, Norfolk, Va., and ordered to the *Ohio*.

REEVES, I. S. K., Passed Assistant Surgeon. Detached from duty at the Naval Hospital, Boston, Mass., and ordered to the Scorpion.

RYDER, C. E., Assistant Surgeon. Detached from duty at the Navy Yard, Boston, Mass., and ordered to duty at the Navy Recruiting Station, Omaha, Neb.

SHAW, H., Assistant Surgeon. Detached from duty at the Naval Hospital, Naval Home, Philadelphia, and ordered to duty at the Naval Hospital, Pensacola, Fla.

TRAYNOR, J. P., Passed Assistant Surgeon. Detached from duty on board the U. S. R. S. *Southery*, Navy Yard, Portsmouth, N. H., and ordered to duty at the Navy Yard, Boston, Mass.

WRIGHT, B. L., Surgeon. Detached from the *Columbia* and ordered to the Naval Hospital, New York, for treatment.

Births, Marriages, and Deaths.

Married.

HUNTINGTON—STEWART.—In Brooklyn, on Wednesday, December 12th, Dr. Charles Gardiner Huntington and Miss Marjorie Stewart.

McREYNOLDS—COULTER.—In Los Angeles, California, on Wednesday, December 12th, Dr. Robert Phillips McReynolds, of Philadelphia, and Miss Frances Cornelia Coulter.

MOLESDALE—BALLENTINE.—In Basking Ridge, N. J., on Saturday, December 8th, Dr. Molesdale and Miss Florence Ballentine.

STRICKLER—BRADNER.—In Denver, Colorado, on Saturday, December 1st, Dr. David A. Strickler and Dr. Mary F. Bradner.

WEIDER—MENDEL.—In Philadelphia, on Monday, December 10th, Dr. Henry S. Weider and Miss Josephine Mendel.

Died.

ANDERSON.—In Gate City, Virginia, on Wednesday, December 5th, Dr. Campbell Anderson, aged forty-eight years.

BOWKER.—In Bernardston, Massachusetts, on Monday, December 10th, Dr. Charles Bowker, aged eighty-two years.

CUNNINGHAM.—In Bay City, Michigan, on Wednesday, December 5th, Dr. William Cunningham, aged fifty-nine years.

DAVISON.—In Cloverport, Kentucky, on Tuesday, December 11th, Dr. David Davison, aged eighty-eight years.

FISK.—In Wauwatosa, Wisconsin, on Monday, December 3rd, Dr. Melancthon Hogeboom Fisk, aged sixty-three years.

GARDNER.—In New York, on Monday, December 10th, Dr. Alfred Wild Gardner.

GLEASON.—In Brockport, N. Y., on Saturday, December 8th, Dr. Samuel W. Gleason, aged eighty-seven years.

HARRIS.—In Chicago, on Sunday, December 9th, Dr. Benjamin Harris.

HENROTIN.—In Chicago, on Sunday, December 9th, Dr. Fernand Henrotin, aged fifty-nine years.

HUME.—In Culpeper, Virginia, on Monday, December 10th, Dr. Charles Hume, aged eighty-five years.

INGERSOLL.—In Grand Junction, Colorado, on Saturday, December 8th, Dr. L. F. Ingersoll, aged forty-five years.

LAPPONI.—In Rome, Italy, on Friday, December 7th, Dr. Lapponi.

LUCKE.—In Middleburg, Virginia, on Monday, December 3rd, Dr. William J. Lucke, aged seventy-one years.

MACDONALD.—In New York, on Friday, December 7th, Dr. Alexander E. Macdonald, aged sixty-one years.

MAYRAND.—In Tyngsbury, Rhode Island, on Wednesday, December 5th, Dr. Eugene Mayrand.

McLAUGHLIN.—In Philadelphia, on Saturday, December 8th, Dr. Daniel Charles McLaughlin.

MEISBURGER.—In Buffalo, N. Y., on Saturday, December 8th, Dr. William C. Meisburger.

MOORE.—In Astoria, Long Island, on Tuesday, December 11th, Mrs. Moore, wife of Dr. Moore.

NASH.—In Philadelphia, on Sunday, December 9th, Dr. Joseph D. Nash, aged seventy years.

OSGOOD.—In Fairfield, Connecticut, on Sunday, December 9th, Mrs. Samuel Osgood, widow of Dr. Samuel Osgood.

PURSSELL.—In Whitehouse Station, Orange, N. J., Dr. William W. Purssell, aged fifty-seven years.

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Original Communications.

ERRORS IN THE TREATMENT OF CUTANEOUS CANCERS.*

BY A. R. ROBINSON, M. B., L. R. C. P. AND S. (EDIN.), New York.

Professor of Dermatology in the New York Polyclinic, etc.

The views that I have expressed in this paper are the results of careful observations made on cases of cutaneous cancer during the last twenty-five years. Some of these patients were treated by me, personally, and the remainder by other physicians.

I have endeavored to show that no single one of the different methods of treatment generally used and recommended by operators can be applied to all cases of cancer, but that the proper method in a given case should depend upon the form of the disease, the location or part affected, the extent of the process, and the direction of extension, if the patient is to receive the best results obtainable with our present knowledge of the disease and of the results of the different methods which may be employed in the treatment of the various cases.

If cancer is a parasitic disease, then some drug or serum or toxine may be discovered which would be the correct agent for the cure of all cases, but, as yet, the microbic origin of the disease has not been satisfactorily proved, and in my opinion it will some time be shown that these atypical epitheliomatous growths, different in either form, or location, or both, may depend upon different ætiological factors that are both predisposing and directly exciting.

I am not prepared to admit, without further confirmatory evidence, that carcinomatous growths in the lower animals, whether produced by inoculation or arising as original tumors, have the same cause as cancers in the human individual, although probably a general law governing the subject might be formulated.[1]

Whatever may be the exciting cause for the heteroplastic epithelial growth in a given instance, there seems to be no doubt that predisposing factors in many cases play an important part in the causation, as for instance, the condition of the skin itself in cases of multiple cancer and in cases of xeroderma pigmentosum. These predisposing factors have not been given the careful study they deserve, as a better knowledge of them would probably enable one frequently to prevent the cancer formation or when present aid in its removal. Reference to this will again be made in the description of cases of multiple primary cancer.

The object of any form of treatment of cancer with our present knowledge of this subject should be the complete destruction or removal of all of the pathological epithelia, for if that be not accomplished there will sooner or later be a reappearance of the disease.

As regards destruction of cancer by internal treatment, there is, at the present time, no known drug or serum or toxine, single or combined, that can be relied upon for curative action at any stage of the disease. However, I believe that it is in this direction that progress will be made in the treatment of these cases, and should not be surprised if the new agent would be the product of some ductless gland. I have tried experimentally during the last twenty-five years many drugs and gland extracts, including all the vaunted agents and many others less famed, from mixed toxines to the last recommended gland extract, and with the exception of thyreoid extract and possibly arsenic I have never seen any definite benefit from their use. I thought more than once in my experiments that the desired agent was found. I should like to say, with regard to thyroid extract, that I consider it a valuable agent in cases of single or multiple cancers in elderly persons, and in all persons with a marked senile condition of the skin, and would recommend that it be given in every such case, not only to prevent new growths, but also to aid in the removal of existing ones; I refer especially to the superficial forms of the disease.

To show an instance of its action in a case of xeroderma pigmentosum with carcinomatous degeneration, I cite the following:

A female, age fifteen years and five months at the time of her death, was first seen by me when she was about ten years of age. The xeroderma pigmentosum had commenced in the fifth month after birth. Epitheliomatous growths appeared on the face at a later period. When I first saw the patient there were upon the face about fourteen distinct epitheliomatous growths, varying in size from that of a pea to that of a walnut,

* Read before the British Medical Association at Toronto, Canada, August, 1906.

[1] It is exceedingly difficult to imagine that a brauchiogenetic carcinoma, a prickle celled epithelioma of the cutaneous tissue, a rodent ulcer, and the epitheliomatous growths occurring in cases of neuroderma pigmentosum, for instance, should all depend upon the same agent, and that an external one, as the direct exciting factor in the causation of the pathological process, and personally I do no believe that the same factor is present in each of these forms of the disease.

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one of which occupied the whole upper part of the left eyelid. The entire skin of the face, neck, forearms, and hands showed well marked xeroderma pigmentosum.

After the administration of thyreoid extract every cancerous growth disappeared, and at the same time there was a decided improvement in the original cutaneous disease. At the end of about two years' treatment, a melanotic epitheliomatous growth appeared on the right temporal region, and grew rapidly until in a few weeks it was the size of a large walnut. It remained stationary at about the same size for some three months, and then, contrary to my expectations, it gradually disappeared, leaving a slightly depressed, pigmented spot, where it had been. After remaining free from all cancerous growths for one year, and when the xeroderma pigmentosum had greatly improved, the patient passed from under my observation, as the mother thought that another physician who had been recommended to her could succeed in restoring the skin to a normal condition.

The patient was treated with the high frequency current for several months. During this treatment a carcinomatous growth appeared on the right cheek, grew rapidly, and when I again saw her it was about one and one half inches in diameter, and formed a firm, elevated mass. The submaxillary glands were already infected, and within six months' time the patient died, the disease before death showing an ulcerated area extending over the greater part of the right half of the face. I might add that I had, in the early period of treatment of this patient, used the x ray, but soon found that it had a very injurious action, even when applied not longer than two minutes, using only a medium tube and placing the part twelve inches from the target. I have no doubt that the high frequency current to which this patient was subsequently subjected had an injurious action upon the tissues. During the early part of the last six months of her life she was treated with thyreoid extract, but without benefit; then for two months with trypsin, also without avail.

As the result of a large experience I have come to the conclusion that thyreoid extract should be given in all cases such as I have mentioned, and to all persons with a marked senile skin, whether this senile condition is premature or otherwise.

Contrary to the experience of some physicians, I have not secured any noticeable benefit from the use of thyreoid extract in cases of visceral cancer. The doses administered have varied from five to thirty grains a day; the latter dose was given for some time without any injurious effect upon the patient's system in a case of cancer of the tongue. This case was operated on six months ago; one half of the tongue was removed, and at the present time there are no indications whatever of a return. I cannot, however, say that the thyreoid extract had any part in the cure of the disease.

I have found that the alcohols used in excess are injurious in cases of cutaneous cancer, especially in elderly persons, and that their use interferes with the efficacy of the x ray treatment.

The unreliability or, I might add, uselessness of toxines, sera, etc., makes it a serious error for a physician to lose valuable time in operable cases by prescribing these variously recommended agents in the hope of a possible benefit from their use, or because the patient hesitates to undergo proper treatment.

The methods for the removal of cancer usually employed at present are excision by the knife, destruction by thermocautery or galvanocautery, radiotherapy, curetting, and caustics. As all of these methods are successful in certain cases I will briefly consider those which I deem most suitable for the disease in its different forms.

I hold that that method of treatment is best which removes with the greatest certainty all of the pathological tissue, even if the resulting deformity is greater than that caused by some other less effective method; and that of two methods offering equally good results as regards a cure, there should be employed that one which would cause the least deformity, when deformity from a cosmetic standpoint must be considered. The question of time and expense must certainly in some cases be taken into consideration, and always from the standpoint of the patient, and not that of the physician.

Until it is proved that cancer depends in all cases upon a specific organism, and that this organism is the thing to be considered and destroyed, I shall in accordance with my own views as to the ætiology, regard the disease as capable of arising from different causes in different cases, and look upon the pathological epithelial cells as constituting the essence of the disease and as being the structures which it is necessary to completely remove or destroy *in situ*.

Cutaneous cancers vary in the different cases, in nature and in location; and in a given location the clinical character at a given time will depend upon the kind of cancer; the extent and direction of the growth; and on the inflammatory or other changes taking place in the affected area. Thus, we have the rodent ulcer, the superficial prickle celled epithelioma, the deep nodular, the keratoid, etc. The method of treatment should depend in each individual case upon the location, upon the extent and direction of extension, and upon the clinical and pathological form of the disease.

A cancer at the end of the nose or near the eye may demand, for cosmetic reasons alone, a different method of treatment from one of the same kind on some other part of the body, the scrotum, for instance. A rodent ulcer may not require such prompt and such similar treatment as an epithelioma of the same size and location, with the tendency to rapid extension and lymphatic gland infection.

I will now briefly review what I regard as the correct methods to be employed in the treatment of cutaneous cancer, and also what I look upon as errors; and will consider only the methods usually followed. The treatment by injections of toxines, the use of mild caustics, etc., need no further mention on my part; clinical observations have proved both the utter uselessness of all toxines recommended to the present time, and the harmfulness of the action of mild caustics, such as silver nitrate, etc.

Excision.—When a lesion is smaller than a pea in size, deep seated, and not located upon such a part as the end of the nose, the eyelid, or near the canthus, it can be removed by excision without causing any objectionable deformity; the same result can be obtained as quickly and with less

ceremony with the cautery or a suitable caustic. If the lesion is on the scrotum, excision is the proper method, the only one which should be employed for every case of cancer of that part, irrespective of the size or character.

If a small pea sized epithelioma is of the superficial form and situated upon the face a proper caustic or the x ray should be employed. The deformity in such a case after treatment is slight, almost unobservable by the naked eye except at close range, and a permanent cure is much more probable, as the pathological tissue can be destroyed in the peripheral area without destroying the normal tissues, whilst the tendency of the surgeon as a rule is to make an incision within the area of invasion by the growth, thus accounting for the frequent reappearance of the disease, on flat surfaces, on important regions as those of the face after operation by excision.

In all cases where flat epitheliomata are larger in size than a bean, unaccompanied with lymph gland infection, excision should *not* be employed, except where deformity is of no consequence, and where a wide or deep incision may be made with impunity, as the morbid tissue can be removed by other methods, giving more satisfactory results.

The mistake of operating with the knife in this class of cancers is one of frequent occurrence, and the results are often unsatisfactory both as regards a cure and also in the extent of the deformity following, as compared with results achieved by the use of some other methods.

In deep seated, rapidly spreading epitheliomata, a rather rare form of cancer, operation by excision offers the most favorable prognosis, and should invariably be the method used, even if the results are not often successful. In these cases caustics or radiotherapy should not be depended upon, but may be used in conjunction after attempted excision of the growth. The x ray may be used after excision with the object of destroying unremoved cancer epithelia, but I doubt if it often accomplishes even that object.

Large flat epitheliomata occupying areas two or more inches in diameter should not be treated by the knife, as caustics, or the x ray, or both combined, as indicated in the case, will give results which could not possibly be obtained by attempted excision. I may safely say that excision should never be attempted in cases of this kind.

All cancers of the lower lip, unless they are very superficial, should be excised. Caustics or x rays are dangerous and inefficient agents in the majority of these cases. I am aware of the fact that enthusiasts on the x ray have described such cases as having been successfully treated by this agent, but I have seen too many cases made rapidly worse, and almost if not quite inoperable, from the use of this method, so that I am entirely opposed to it. I shall refer presently to the use of caustics in cases of superficial epithelioma of the lower lip.

Cancer of the upper lip, of which I have seen quite a number of cases, can as a rule be treated very satisfactorily by the use of proper caustics, especially in old persons. Hence in these cases excision or caustics or x ray should be employed, according to the need of the individual case. As a rule a proper caustic gives the most satisfactory results, but in the rodent ulcer form the x ray may be preferable; excision should be employed only when other methods are not effective.

Curette.—The curette should not be relied upon exclusively in any case of cancer. A careful microscopical study of the manner of extension and of the condition of the tissues at the peripheral area of the cancer infiltration should convince any one of the impossibility of recognizing when all the pathological tissue has been removed by the curette. Furthermore, for the complete removal of all the pathological tissue an unnecessary amount of normal tissue would be destroyed. I say unnecessary when compared with the amount of normal tissue destroyed by the treatment with caustics, or the use of the x ray. In fact, curetting as the only method in a given case necessitates the removal of as much normal tissue as when the knife is used; consequently, excision would almost invariably be preferable to curettage. The curette is sometimes useful in removing masses of pathological tissue before the application of a caustic or the use of the x ray. Curettage is also a proper procedure in cases of the superficial pearly form of cancer, in order to produce a raw surface preparatory to other treatment. It is then an error, in my estimation, to use the curette alone in trying to effect a cure, as reappearances of the disease are almost certain to occur.

The galvanocautery or thermocautery can be used to remove small growths in some parts, but these methods should not be employed when for cosmetic reasons it is necessary to save all the normal tissue possible.

The x ray is a decided addition to our armamentarium against cancer, but its virtues have been overexploited by some writers, perhaps for reasons best known to themselves. It is a grave error to maintain that with the x rays alone all cases of cancer of the skin can be cured. This is not even true of cancers seen in a very early stage. It is also an error to hold that in all such cases where it could effect a cure it is the best agent to be employed. I believe its exclusive use should be limited to a very few cases out of all those that come under observation, such as those of rodent ulcer and some cases of superficial prickle celled epitheliomata.

Some cases of rodent ulcer, especially those of the crateriform variety in which I think there is a trophoneurotic condition, are incurable by any method at present known to the profession. In the majority of cases of superficial epitheliomata a combination of treatments, as by caustics, by the x ray, and in some cases by the use of thyreoid extract internally, gives the best results.

Hard, firm, elevated, epithelial margins must be made more vulnerable by injuring agents, such as caustics, before the x ray is applied. In the deep nodular forms, in the keratoid epitheliomata, especially of the lips, and in cancer of the penis, I do not think the x ray should be relied upon, for whilst it may have benefited or even cured some cases, it has in other cases hastened the growth of the cancer, and much time, valuable to the pa-

tient, has thus been lost. Unless a very satisfactory action is shown after a few treatments, the use of the x ray should be discontinued and other methods should be employed. The application of the x ray, twenty, forty, eighty, or even more times for the removal of a cancer that could have been removed equally well in a few minutes or a few hours, according to the condition of the case and the method employed, is a wrong to the patient.

As only a limited number of physicians are in a position to possess this "race suicide apparatus," it is well for the profession in general to know that there are but very few cases of cutaneous cancer that cannot be successfully treated without it. Every physician, however, who is engaged in the special treatment of cancer should possess an x ray machine, and know how to use it properly for any case that would be suitable for such treatment. As already stated, it is a valuable agent for nearly all superficial epitheliomata, especially for those situated near the eye. For such cases I employ it, but always in combination with the use of caustics, the latter to increase the vulnerability of the pathological tissue and make it more easily acted upon by the x ray.

Caustics.—I will limit my remarks to the use of zinc chloride, acid nitrate of mercury, caustic potash, and arsenic. All caustics act as injuring agents, and the beneficial effects depend upon the inflammatory process produced. The kind of action in an individual case depends upon the agent used, the strength of the agent, the duration of its application, and the vulnerability of the part acted upon.

The treatment of a given case will depend upon the variety and upon the extent and location of the growth. A knowledge of the action of the caustic to be employed is necessary in order that the pathological tissue may be destroyed with the least loss of normal tissue.

Pathological tissue is more vulnerable than the normal, and a very important factor in the destruction of the pathological cells in the peripheral area in cancer is the resulting inflammatory action, which action should be sufficiently intense to destroy the cells and prevent a reappearance of the disease.

When using arsenious acid the paste should be applied until the macroscopical growth has been necrosed and no longer. That may take place within six hours, and perhaps not in twelve, or it may take a still longer time, according to the action of the paste in different cases.

The strength of the paste to be used depends upon the form and upon the extent and location of the disease. The weaker the paste, the slower the injuring action, and the less the destruction of normal tissue in effecting a cure. The strength of the paste should vary in the different cases from equal parts each by weight of arsenious acid and gum acacia to two parts of the acid and one of gum acacia, with sufficient water to form a paste of rather firm consistence.

Never apply arsenic to a growth covered by normal epithelium. This epithelium must either be removed or greatly injured by curetting or by the application of an injurious agent, as caustic potash, thus making it a pathological tissue. If this is not done, proper action on the cancer tissue does not take place.

The same procedure is generally necessary with the thick, rolled up edges of the larger flat epitheliomata in order to make all parts of the area to be acted upon of about equal vulnerability. This is very important, as it prepares the whole diseased area for equal action of the caustic.

When in doubt as to the completeness of the necrosis desired, continue the application of the paste until the proper action is believed to be positively obtained. Do not use the paste on cancer of the lower lip, ear, near the eye, mamilla, penis, or scrotum, or when in any case the lymphatic structures are invaded. Arsenious acid is the best single agent for all the superficial forms of cancer when situated on the face, with the exceptions noted, as the results in these cases are quick and satisfactory from every standpoint. The case, however, must be a proper one for the treatment, and the technique of the operation be correct.

The x ray only can compare favorably with this treatment as regards the results obtained in the superficial large or small epitheliomata, as far as the absence of deformity after cure is concerned; and often a combination of the two methods gives the best result in this respect.

If the growth is near the periosteum, or in old persons, the caustic should be removed before complete necrosis of the macroscopical growth has occurred, otherwise the inflammatory process resulting might extend beyond the limits desired, and cause in the one case necrosis of bone substance; in the other, a too extensive destruction of normal tissue.

The subsequent treatment should consist in the application of a simple antiseptic ointment. Do not endeavor to make the part aseptic, but rather encourage granulation tissue formation in sufficient amount to have the resulting scar tissue leave but little deformity.

Zinc chloride produces a dry necrosis; has no special selective action on the pathological tissue; causes too little inflammation; and therefore should not be used except as an agent in certain cases for removing a portion of the growth before using some other caustic or the x ray. Its use alone as a curative agent is limited to very few cases.

Caustic potash is one of the most efficient agents in the treatment of cancer. It causes rapid liquefaction of the tissues, and an intense inflammatory process with much serous transudation into a considerable area with a consequent destructive action upon the pathological epithelial cells lying in the lymph spaces, and that is where they all lie in the peripheral part of the growth. There is the direct action of the caustic, the intense inflammation, and the flooding of the lymph spaces with inflammatory serum, all acting upon the pathological tissue. The technique consists of the regulation of this process in order to get the requisite destruction of pathological tissue with the least destruction of normal tissue.

Caustic potash can be used to destroy any small cancer, except the dry papillomatous forms. I have used it successfully many times on small growths near the eye, as well as on other parts of the face. Sometimes in small deep tumors near the eye it is best used as in electrolysis for the removal of hairs, as caustic potash is formed at the needle connected with the negative pole. It should not be used on large growths, either superficial or deep seated.

There is one point especially to which I wish to draw your attention, because I think it is of practical value. After treatment by any method and healing of the part, the application of a twenty to fifty per cent. solution of caustic potash to the free surface of the area which was the seat of the disease for a few minutes will show whether there is any pathological epithelial tissue still present in the skin or not by its selective action. I also use this method of procedure when in doubt as to the presence of a commencing epithelioma. This agent, therefore, has both diagnostic and therapeutical value.

For epithelioma of the upper lip and for superficial forms on the lower lip, caustic potash is often the best agent to be employed.

Acid nitrate of mercury is extensively used by some physicians, but I employ it only to make small cancers near the eye more vulnerable for the x rays.

Time will not permit me to discuss the relative values of some other caustics, such as chromic acid, pyrogallic acid, the mineral acids, etc., but they all have their places in the correct treatment of cutaneous cancer and should be used in such cases in which they are indicated in preference to other agents.

I trust in the short time allowed for a paper I have shown that the treatment of cutaneous cancer is a broad subject, and that each individual case must be treated upon its special peculiarities and upon certain principles if the operator is to accomplish the best results obtainable.

Conclusion.

1. Every case of cutaneous cancer demands special consideration, special study, and special selective treatment.

2. No one method of treatment of cancer is best or most efficient for all cases of operable cancer.

3. All cases of multiple cutaneous cancer and all aged persons with cutaneous cancer require internal treatment in the form of diet and drugs in addition to local measures. A diet of milk and green vegetables and the avoidance of meats in general and of meats of such organs as liver and kidneys in particular, and the avoidance of alcohols, is advisable in all cases of cancer, whether external or internal. Thyreoid extract should be given in as large doses as can be borne in all cases where there is a senile condition of the skin and in most superficial epitheliomata.

4. A knowledge of the kind of cancer present, the pathological anatomy, and the manner of extension of the disease in general and of the special variety of the case to be treated is necessary to a correct choice of method of treatment.

5. When possible all cases should be under observation at least one year after commencing treatment of any kind, in order to treat promptly any recurrence of the disease.

6. Early diagnosis and correct treatment place cutaneous cancers among that class of diseases which do not deserve the name of *incurable* diseases, as almost without exception they can be treated successfully if the method employed is the correct one.

159 West Forty-ninth Street.

THE PHYSIOLOGY OF LANGUAGE AND ITS RELATION TO THE TREATMENT OF STAMMERING.*

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The subject of defects of speech is one that has been almost entirely neglected by regular teachers and regular practitioners of medicine, and it has been relegated for the most part to irregulars and quacks, who have not failed to reap from it an abundant financial harvest. The nervous type of individual usually afflicted with defective speech is an easy prey for charlatanry and a fit subject for the most serious study and scientific treatment. Speech is so largely a product of the organs of the so called respiratory tract that a study of its defects, it seems to me, properly belongs to the laryngologist. Of course there is an important neurological element which must also be taken into consideration, but this requires scarcely more knowledge of the nervous system than the average physician should possess, except perhaps in the acquired forms of defective speech coming under the head of aphasia.

The nomenclature of defects of speech is in great need of revision. The words stammering and stuttering, for instance, have been variously used by different authors. The Germans use stuttering to designate the spasmodic defect of speech, to which we give the term stammering, and they confine the term stammering to the simple substitution of incorrect sounds for the correct ones. An argument in favor of this use of the terms is the fact that nearly all countries have the equivalents of these words, showing the necessity to distinguish between the two forms of defective speech. However, as English speaking authors usually apply the word stammering to the spasmodic affection of speech, I have thought it best to conform to this custom, and to ignore the word stuttering or to use it to designate the initial stage and milder forms of the severer affection. I would define stammering, therefore, as a more or less constant inability to speak freely, owing to an incoordinate and spasmodic action of the respiratory, phonatory, or articulatory muscles.

In the consideration of this subject it is well to keep in mind the fact that the muscles employed in the production of speech are not entirely within the control of the will. Indeed their precise coordinate actions is involuntary. The most fluent speaker stammers occasionally, but he happens to be able to recover himself immediately and without attracting his own or others' attention. If he should fail to be able to recover himself a few times, he would be-

* Read before the Eastern Section of the American Laryngological, Rhinological and Otological Society, in Syracuse, N. Y., February 10, 1906.

come, as we say, nervous about it, and lose confidence in his ability to speak with freedom. This is the way that stammerers are made, and they tell us that only those that have passed through the ordeal can have any adequate conception of the embarrassment and mental anguish that accompany it. There are probably few diseases of a similar type that entail more physical inconvenience or mental suffering.

The affection is also a prevalent one. It has been estimated that nearly one per cent. of all school children stammer. It is common to people of all nationalities, but more prevalent among those whose language is rendered somewhat harsh by the predominance of consonant sounds, and less prevalent among those whose language abounds in vowel sounds. While the affection belongs chiefly to childhood, there are many cases in whom it continues into adult life and even into old age, but we do not see or hear of them, because, being handicapped in the race, they are leading more or less secluded lives, and many die early because having a weak nervous organization to begin with they are unable to endure the strain that is placed upon them. Stammering is a serious obstacle to progress in all social and intellectual pursuits. Only the most menial positions are open to its adult subjects, and school children, unable to keep up with their studies, drop back into lower grades, neglected and discouraged.

In consideration of this subject some distinction should be made between speech and language. Language may be defined as a series of symbols agreed upon by a people for the expression of thought. The symbols of a language may be oral, graphic, or pantomimic. Speech is the oral expression of thought through the medium of the recognized symbols of language. The English alphabet has 26 graphic symbols or characters called letters. The names of these symbols or letters do not, as a rule, correspond with their sound when spoken or read. The name of the letter a, for instance, corresponds with only one of its five sounds. The name of the letter b contains two physiological sounds, b and e. W contains six physiological sounds, d u b l e oo. In order, therefore, to study spoken language as we study written language it is necessary to construct an alphabet of sounds which shall bear the same relation to speech that the English alphabet of letters bears to writing. This was done as early as 1827 by Dr. Neil Arnott and later by Wyllie, Melville Bell, Pitman, and others. Receiving the suggestion from these authors I have made a table of sounds which I have endeavored to bring up to recent standards, and to which, after the manner of Wyllie, I have given the name of The Physiological Alphabet. I introduce it here in order that you may the more easily understand my explanation of it, and also the application of it to the treatment of the different forms of stammering.

The use of this alphabet as I have described it to you constitutes the basis for the phonatory and articulatory treatment of stammering, and, I may say, also of all other forms of defective speech. The patient is taught to speak in exactly the same way in which he was originally taught to read, the alphabet of sounds being used for the teaching of speaking, as the alphabet of letters or symbols was used in the teaching of reading. You will observe that each of

PHYSIOLOGICAL ALPHABET.

VOWELS.

A sentence the words of which begin with the vocal sounds.

E.	A.	Ah.	Aw.	O.	OO.
Even	apes	are	awed	over	oozing.

CONSONANTS.

	VOICELESS ORAL	VOICED ORAL.	VOICED NASAL.	SENTENCES THE WORDS OF WHICH BEGIN WITH THE CONSONANT SOUNDS.
Labials	P.	B.	M.	Paul Brown made
	Wh.	W.		white wax.
Labiodentals	F.	V.		Full voice.
Linguodentals	Th′	Th″		Think thou.
Anterior	S.	Z.		Some zealous
	Sh.	Zh.		sheep leisurely
Linguopalatals	T.	D.	N.	took down nine
		L.		large
		R.		rails.
Posterior	K.	G.	Ng.	Can girls bring
Linguopalatals	H.	Y.		home yeast.

these two processes has a mental as well as a physical developmental feature connected with it. In fact the mental developmental feature predominates, for the mental faculties guide and control the musculature of both reading (aloud) and speaking. The use of the alphabet, therefore, in the treatment of stammering serves as a mental as well as a physical discipline, and teaches the art of orderly thinking as well as that of orderly speaking. A further analogy between the teaching of speaking and the teaching of reading may be pointed out. Just as a child learns to read one short word or syllable at a time so we teach the stammerer to phonate and articulate one short word or syllable at a time, and we call this, after the manner of Melville Bell, syllabication. He has well said that syllabication is the cure for all oratorical and speech defects. In a sense all speech is syllabic, but in the beginning of the treatment for a marked defect of speech like stammering the syllables should be pronounced at first each for its own sake to the point of almost entirely ignoring the meaning of what is being spoken or read. In fact it is well to take words and sentences having but little thought or literary significance.

The physiological elements contained in the alphabet and the words and sentences used as a key to their order, furnish illustrations of good examples for practice, and sentences may be used in which there is a contrast in the meaning of the words, as: "Bring me some ice, not some mice." "I said a 'knap sack strap,' not 'a knap sack's strap.'" During this procedure which should cover several weeks, the patient is encouraged to refrain entirely from ordinary conversation, and to give his entire time to the prescribed practice and to speak only in the prescribed syllabic manner, using words and sentences that should be especially given to him to serve as a means of expressing his feelings and desires.

Melville Bell has also called attention to the physiological division of words into syllables for the purpose of syllabication. They should be divided, not according to their etymology, as you find them in the dictionaries, but according to their physiological enunciation. For instance, we say phy-si-o-lo-gi-cal, not phys-i-o-log-ic-al, and e-ty-mo-lo-gi-cal, not et-ym-ol-o-gic-al. This is the natural or easy way to pronounce words, and we take advantage of the fact not only by calling the attention of the stammerer to it but by practising him in the art of doing it. We also teach him syllabication by having him read the elements of language as they appear in sentences. This is called phonetic reading.

Oscar Gutman has devised and published a method of diagramming sentences for syllabic reading as a help in the treatment of stammering and other defects of speech.

In this syllabic reading and speaking it will be observed that each syllable requires a separate and distinct respiratory impulse, and the patient is taught exactly how to give this impulse. He is shown that it originates in the region of the large waist muscles, and that the diaphragm is the centre of the group of muscles employed.

It has been asked whether this method may not develop a formal and stilted style of speaking, and my answer is emphatically no, because as soon as the physiological alphabet is mastered and a sufficient amount of practice in the purely syllabic form of speech has been used, the syllables are put together in their natural manner, and smooth rhythmical speech practised for a long time.

1627 Walnut Street.

TWO CASES OF HEPATIC ABSCESS TREATED BY THE TRANSPLEURAL OPERATION.

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I have ventured to publish these two cases because they would seem to belong to that category in which Jacobson[1] includes "those grave and difficult cases where a hydatid cyst or hepatic abscess instead of making its way towards the abdominal wall works upwards thrusting up the base of the lung" and so have to be approached by a transthoracic incision.

Case I.—H. L., age twenty-one; was transferred from the Station Hospital, Northampton, to Colchester, for the purpose of being invalided from the service. He was, however, admitted to my wards for observation, the history of the case being that he had suffered from dysentery with an "enlarged liver" while in Ladysmith during the siege.

His face was sallow and his features somewhat "drawn," and he had a moderate diarrhœa with dark colored offensive pultaceous stools, but with no blood or pus. There was no definite swelling to be defined, but there was a sensation of increased resistance on palpation below the costal margin, and some dulness at the base of the right lung. There was no history of syphilis or malaria, the spleen could not be felt, and there were no rigors or sweatings.

As there was no urgency in his symptoms and as the liver had been explored with a negative result before his transfer to Colchester it was decided after a consultation to await more definite indications for treatment. The diarrhœa was easily controlled by a little opium bismuth and salol and the patient's temperature rose to 100° F. on two occasions only.

On October 29th, some three weeks after admission, however, the man complained of considerable pain, and his temperature was found to be 102° F. Next morning, therefore, after preparations had been made for operation if necessary the liver was again explored with a syringe and after two or three attempts a cavity containing typical liver pus was entered at a depth of some three inches, the needle being between the eighth and ninth ribs, approximating to the post axillary line. The abscess appeared to be one of those which instead of working downwards and outwards to the parietes was extending upwards and backwards to the hinder part of the liver.

Now, roughly speaking, there are three principal routes with individual modifications for attacking a hepatic abscess. Firstly, there is the subcostal transperitoneal with an interior or anterolateral incision, this is usually employed when there is no very definite guide to the actual position of the pus, it was obviously not the one to choose here. Secondly there is the subpleural intercostal incision, an incision through an intercostal space below the pleural reflection, this is seldom a satisfactory route as the space obtained by it is very limited. Thirdly there is the transpleural incision with excision of a part of one or two ribs. If this incision falls over the peritoneal surface of the liver, as it did in both of the cases, and the diaphragm is not adherent to the hepatic surface which it usually is, the edge of the diaphragmatic wound can be stitched to the liver.

This last method was then the one I determined to adopt. The needle being left in as a guide, and chloroform having been administered, an incision some three or four inches long was made over the ninth rib and about two and a half inches of it excised, the pleura and diaphragm cut through, and the liver exposed. A strong suture was passed through the integuments and diaphragm and deeply through the liver substance at each end of the incision, thus anchoring the viscus securely to the wound, and the pleural cavity sealed off as quickly as possible. Very shallow and interrupted respiration supervened on the admission of air to the pleural sac, and the patient became very cyanotic, but he rapidly recovered as soon as the sac was sutured off. The liver and edges of the diaphragm were fixed by some further sutures to the deeper layers of the wound, a dressing applied, and the patient sent back to the ward as it was decided to wait for a day or so to allow adhesions to form before proceeding to open the abscess. This was done on the third day after the operation, and about two pints and a half of chocolate colored pus having the usual odor evacuated, the cavity was gently syringed with iodine water and dressings applied. The discharge gradually ceased, and on December 7th the cavity had so contracted down that a tube barely one and one half inches long was with difficulty retained in the wound.

The next morning, however, the temperature hitherto normal since the opening of the abscess rose to 99.6° F. While the wound was being gently syringed with a 1 to 40 carbolic lotion the patient suddenly complained of great pain in the epigastrium, became pallid and broke out into a profuse sweat and vomited. I was considerably alarmed, fearing that perhaps the syringing, gentle as it had been, had broken through some attentuated portion of the wall of the abscess cavity and possibly infected the peritonæum. A one fourth grain of morphine was given hypodermically and by the evening the pain had abated and the vomiting ceased, but the abdomen though soft and moving easily with respiration, was somewhat distended. The temperature continued to fluctuate between 99° F. and 102° F., and a sus-

[1] Jacobson, *Operations of Surgery*, ii, p. 351.

picion arose that there was a collection of pus in front, either intrahepatic or between the liver and the parietes, and on the 22nd a definite area of dulness being defined an incision was made just below the costal margin, and a pint of creamy inodorous pus evacuated. The temperature fell to normal that evening and the patient made a good and uninterrupted recovery.

CASE II.—H. S. was admitted to one of the medical wards in Colchester Hospital on October 27, 1902. He had had dysentery at Ladysmith and had been operated upon at Nieuport for abscess of the liver, and a quart of pus evacuated. He was invalided home and subsequently admitted to hospital on the stated date. He had suffered more or less continuously from diarrhœa for twelve months, and on admission his urine was found to contain an appreciable amount of albumin.

From the notes of his case it would appear that after a rigor his temperature had risen to 103° F. falling to 100° F. after a profuse sweating. It remained normal for a few days, and then a repetition of the rigors and sweatings occurred. A consultation was held and the man was transferred to my wards for operation. Next day an exploring syringe was inserted in practically the same position as in the former case, and pus having been found a method similar to the previous one was pursued. On exposing the surface of the liver a thin flaky pus was seen welling up around the needle which had been left *in situ*, the wound was packed with gauze, whilst the pleural sac was sutured off, and the liver was fixed to the deeper plane of the wound. On opening the abscess, which was done immediately, not more than an ounce and a half of unhealthy looking pus escaped.

The temperature after the first three days fell to normal and remained so throughout his convalescence which was uneventful. He was discharged to a sick furlough looking in good health, but still with a small amount of albumin in the urine.

In the first operation, when the pleural sac was opened the patient's condition from threatened respiratory failure became alarming, from the action of the left lung being impeded by the pressure of the pillow beneath the chest, and by the pressure of the abscess, and from the presence of air in the right pleural cavity. He was turned over on his back as far as was consistent with the continuation of the operation, and as soon as the cavity was shut off the breathing became normal.

It is difficult for me, even if the second abscess was in existence at the time of the first operation and had been overlooked, though the character of the pus it contained is against the view that it was of the same nature as that of the larger collection, to account for the disconcerting symptoms which intervened so suddenly, while gently syringing the wound and the partially obliterated sinus. Though it has been urged that liver pus is sterile the entrance into the peritoneal cavity of carbolic lotion and abscess debris must have inevitably produced a more or less limited peritonitis, but the symptoms of peritonism readily disappeared under treatment with enemata and sodium sulphate. Some small perforation may have taken place on the anterior surface of the liver, resulting in a localized abscess limited by adhesions.

In the second case the numerous rigors, the high temperature, profuse sweats, and the small size of the abscess and character of the pus seemed to suggest a possible pyæmic origin, but the wound healed rapidly, and there was no interruption of the apyrexia throughout his recovery.

Limited as my experience is in the operative treatment of hepatic abscess I submit with all deference the opinion that it is not always advisable to rely on the use of any of the various special instruments, trocars and so forth, to the exclusion of ordinary surgical procedures, for frequently those patients in whom efforts have been made for their treatment by the use of such specially devised apparatus, eventually have to be submitted to an excision of a portion of a rib to ensure efficient drainage.

In the second case in which, though the abscess was close to the surface of the liver, there were no diaphragmatic adhesions and in which there was unhealthy pus welling up copiously around the needle, nothing but disaster, I think, must have followed the use alone of any trocar and cannula. And I venture to think that such stabs in the dark or at least into an obscurity are out of place in those cases which, unless there are extensive and firm adhesions present—a condition of which we can never be positive before an incision—can only be satisfactorily grappled with by one of the accepted surgical methods.

MASTOIDITIS AND TEMPOROSPHENOIDAL ABSCESS.*

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While cerebral abscess, the result of middle ear and mastoid suppuration, is one of the least frequent of the various complications, it is also undoubtedly in many cases the most difficult to recognize, especially in its early stages and when so situated that localizing symptoms are absent.

In the development of the temperosphenoidal pus collection, several factors of great practical importance are concerned in the transmission of the infection from the roof of the tympanum, or antrum, to the cerebral interior, inasmuch as there may be a direct line of infection through the tegmen and readily demonstrated on operation, or in other cases, no macroscopic changes will be observed in the osseous separating wall, and the cerebral condition may thus be overlooked, until following the mastoid operation severe symptoms at a later period develop, or a fatal issue occurs, and the abscess is only discovered at the autopsy.

When there is a direct sinus through the roof of the tympanum, as in the case here recorded, the dura becomes inflamed and thickened over a localized area, corresponding to the necrosed opening in the bone, or the dehiscence, should such be present, and a more or less extensive focus of exudation is formed on the surface exterior to the pus collection in the brain. An apparently healthy area of cerebral tissue may at the same time exist between the diseased dura and the cerebral abscess, or in another class of cases the dura may be the seat of a direct fistula formation in external relation, while internally it communicates with the abscess cavity if such be not encapsulated, while surrounding the fistulous channel in the brain coverings, a mass of plastic exudation is thrown out, closely limiting the spread of the infecting material.

On the other hand, in those cases where there

* Presented at a meeting of the Gouverneur Hospital Alumni Society, May 15, 1906.

is entire macroscopic absence of a bone lesion in relation with the abscess, and in addition a layer of apparently healthy cerebral tissue intervenes, the source of the infection is undoubtedly through the various venous and lymphatic channels with which this region is so abundantly supplied. While in a certain number of cases, the infection makes its way along connective tissue strands, either by vascular routes or by way of prolongations of dural tissue through minute interspaces in the tegmen antri or tympani. Bearing these pathological changes in view and at the same time taking into consideration the fact that the majority of abscesses in the temporal region of the cerebrum bear a direct relationship to the roof of the tympanic cavity and its adjoining chamber, the antrum, one obtains valuable data in connection with other symptoms more or less confusing, that will aid in a great measure in deciding the presence or absence of the pus collection, and even further than this, in materially aiding in its location. The following case shows this to a not inconsiderable extent:

D. G., a boy of seven years. He has had a purulent discharge from the right ear for four years, following measles. At first he received some local treatment, but as the discharge lessened and the hearing appeared to be but little impaired, this was discontinued. During this entire time, however, there was always a slight moisture in the canal, but no special annoyance was complained of until within the past four months, when he commenced to complain at intervals of two or three weeks, of slight pain in and around the ear and of headache, especially at night.

I then saw the case for the first time and examination showed a fairly robust boy, with good appetite, bowels normal, skin clear, temperature 98.5°, but the pulse only 60, full and strong. The headaches had become more severe within the past few days, and were more marked on the right side extending down over the mastoid region. Pressure elicited the fact that the parietal region was decidedly more sensitive on the right, while slight pressure over the antrum caused the boy to flinch. There was a slight, brown, offensive discharge in the auditory canal, a small perforation in Shrapnell's membrane occluded with granulation tissue, while the posterior canal wall was somewhat swollen, but not markedly projecting into the canal.

On account of the slow pulse which was quite marked for a boy of his age and the laterilized headache in the presence of a chronic suppurative otitis and undoubted mastoiditis, the possibility of cerebral abscess was suggested, and careful search was made for other symptoms, but nothing could be elicited that in any manner gave further information. As the cerebral lesion if present was on the right side, localizing symptoms such as the various forms of asphasia, disturbances of speech, or changes in the ocular muscles, would not be present, and any dependence upon such symptoms was of course not to be obtained. Of symptoms the result of increased intracranial tension, headache was the only one present, and except for it being most marked on the affected side, was not in itself especially diagnostic, while other cerebral symptoms, such as vertigo, loss of memory, etc., were absent. Both the ocular muscles and eye ground were normal, as was also respiration and digestion.

As it was essential that the mastoid be promptly opened, consent was obtained to extend the operative field if pathological changes were found, in order to explore and ascertain if any intracranial complications were present, and especially if a pus collection existed in the temperosphenoidal lobe. Under ether anæsthesia, the radical mastoid operation was accordingly performed and differed in no way from the average case except that the mastoid cortex was exceedingly dense for a child of this age. There was considerable osseous necrosis in the region of the aditus and antrum, although but little pus was encountered. On exploring the tympanic cavity a sinus was found in its roof leading into the cerebral cavity, and when the necrosed bone adjacent to it was removed the dura bulged into the opening. The opening was then enlarged with chisel in an upward direction, until the dura could be separated from the bone with a periostial elevator, and with the rongeur forceps the opening was increased in size over the squamous portion of the temporal bone, until the tegmen tympani had been entirely removed and a large area of dura was visible. The brain covering was studded in this area with unhealthy granulation tissue, but no sinus into the interior could be found after careful search.

A large V shaped flap was then made in the dura and a long, slender scalpel was used in exploring for the suspected abscess. At about three fourths of an inch from the surface, pus was encountered and a free incision being made into the brain substance, about one half ounce of pus was evacuated. The opening was enlarged with dressing forceps and a smaller amount of pus was still further evacuated, and the abscess cavity was then gently washed out, after which a gauze drain was inserted and the usual dressings applied. The dressings were then changed every other day for the first week, and there was but little discharge at any time, the general and local condition of the patient both being very good. Following this time healing rapidly took place, so that the child was about at the end of the second week, and the parts were completely healed at the end of the sixth week; the pulse becoming normal and the headache disappearing within twenty-four hours after the completion of the operation.

On account of the poorly defined symptoms of temperosphenoidal abscess in many cases, the diagnosis is often most difficult, and this is especially so in the early stages when practically all symptoms may be entirely absent, while at a much later period when intracranial symptoms become unduly prominent, great difficulty may again be encountered in differentiating a cerebral abscess from some other complication, such as a localized meningitis, for instance. It must also be remembered that in children an uncomplicated mastoiditis may present such bizarre or severe symptoms, that a brain abscess is seriously considered, when the entire trouble is limited to the middle ear and mastoid tissues, although in such cases a slight localized meningeal congestion undoubtedly coexists.

45 East Sixtieth Street.

SURGICAL TREATMENT OF GASTRIC ULCER.

By M. R. Barker, M. S., M. D.,
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For clearness of discussion of this subject it seems wise to divide gastric ulcers into two general classes according to their well known peculiarities regarding treatment, and also form a third general class, the treatment of which is not directly for gastric ulcer but for conditions produced by this malady; for instance, hæmorrhages, perforations, contractures, and perigastric lesions.

In the first general class we shall place all ulcers

that appear in the young, generally in young anæmic females. These are sometimes termed simple ulcers, but they are no more simple in and of themselves than those in the other class, excepting that they yield more frequently and readily to medical treatment. This is due to the age of the patients and the underlying causes of the ulcer, important among which is anæmia due to chlorosis, which yields to rational medical treatment and cures the ulcer.

This general class may well be termed the therapeutical class. About eighty per cent. is the record of recoveries in this class under medical treatment, when the treatment is carefully and thoroughly carried out for a sufficient length of time. This represents the acme of medical treatment in that class of gastric ulcer recognized as the therapeutical class. In this general class then, under the most promising conditions, one fifth of the cases become surgical, or at least do not yield to therapeutics. It is unfair to surgery to estimate its results in these cases alone, as representative of its results in gastric ulcer generally, for these cases are usually the poorest surgical risks the surgeon encounters. This is true for two reasons. First, the patients are generally anæmic when medical treatment commences and become more so by reason of conditions produced by the ulcer, and anæmic patients do not stand operative work well. Second, the internist by reason of the tendency of this class of cases to recover under therapeutics, is justified in continuing his treatment longer than in the second general class. Hence, when these patients reach the surgeon they are poor subjects for surgical work. Surgery in this general class therefore is only employed as a last resort, for the treatment of ulcers themselves. Of course it is used when patients of this class enter the third general class. Surgery in this class, and under these conditions, shows a record of fifty per cent. of cures.

In the second general class we shall place all of those cases of gastric ulcer that appear during or after middle life. These are known as chronic gastric ulcers. The history of these cases is usually a long continued hyperchlorhydria, that has been treated in a desultory way, the patient usually treating, or mistreating himself, until ulcer results. A long period of invalidism usually precedes these cases.

This general class of cases may as justly be termed the surgical class as the first is called the therapeutical class. In this class therapeutics are not successful. We believe, however, that the internist should try his skill in this class, before resort is made to surgery, though his record of cures in this class is only twenty-five per cent. In view of this fact, medical procedures should withdraw in favor of surgery much more quickly than in the first class. Thirty days should be the limit. If patients do not show marked benefit in this time, they will never show it under medical treatment, and are properly surgical cases.

In this class surgery demonstrates its most brilliant results. These results, however, will be greatly modified by the condition of the patient when the work is done; hence there being so little hope of medical success in these cases, they should be referred to the surgeon while in good surgical condition. The surgical failures in this class are about five per cent. This class presents many relapses after medicine has seemed to cure, all of which are, in our judgment, surgical cases.

Very important questions must be solved by the surgeon before he commences operations for gastric ulcer and after the diseased tissues are exposed. Before the operation it is necessary to make an estimate of the patient's surgical endurance. This is true in this work more emphatically, perhaps, than in any other surgical procedure, for the reason that the surgeon here has a variety of operations from which to choose, some of which are less exacting upon the patient's surgical endurance than others, though they are not all of equal value. If the surgical endurance of the patient, in the surgeon's judgment, is equal to the exactions of any of the surgical procedures on the stomach, his way is clear to do the best that stomach surgery in these cases offers. But should such conditions not prevail, the surgeon must adapt some procedure to the condition of the patient. In other words, it is much more satisfactory to the surgeon and presumably to the patient, to have a drainage operation with life and comfort, though possible complications may arise sometime, than a more radical operation, and death as a result. The surgeon then must make such an estimate of the patient's surgical endurance, as to enable him to offer the patient the best he is able to receive, though this may not be the best there is, but the best for him under the circumstances.

This adaptation of the case to a certain procedure in the mind of the surgeon before the operation, is always subject to modification when the diseased tissues are exposed and their true condition revealed. The surgeon may make a positive diagnosis of gastric ulcer, but he cannot tell before the tissues are exposed how little, nor how extensive, the gastric tissues are involved, hence the mental program for the patient, made before the operation, may have to be changed when the tissues are uncovered.

Hence the general condition of the patient, as to surgical endurance, and the conditions of the diseased tissues when exposed, together must form the basis for further procedure. For instance, if the surgeon makes an estimate of low surgical endurance in a certain patient, and before the operation adapts to this case the operation of pyloroplasty as the one best fitting the patient's condition, and the exposition of the diseased tissues shows that this operation would be inadequate and useless, the surgeon must modify his mental programme made before the operation and adapt to the case another operation, which though a greater strain on the endurance of the patient, will be of value to him, or he must abandon the case as a hopeless surgical risk. The operation of choice then in any given case can only be decided positively after the diseased tissues are exposed.

There are three operations that may be offered to patients with gastric ulcer. We mention these in the order of their least exactions on the endurance of the patient: Pyloroplasty, gastroenterostomy, and pylorectomy. Gastroenterostomy may be divided into two operations, each of which is of equal severity, gastroduodenostomy and gastrojejunostomy. At the present status, however, of stomach surgery for gastric ulcer, only exceptionally would more than two of these operations be considered, and these in the order named, gastro-

jejunostomy and pylorectomy. Posterior gastrojejunostomy without a loop, is now selected and performed in ninety per cent. of all operations for gastric ulcer in America, not so, however, in Europe. This operation is selected for the following reasons. Its technique is not difficult. It does not overtax the surgical endurance of the patient, and its results, so far, have been satisfactory. What more could be desired?

Some very important questions, the decision of which will either condemn, or establish this operation, are yet to be decided, chief among which is the question of cancer. It is a well established fact that cancer develops in a very large per cent. of gastric ulcers and in the scars left after the ulcers have healed. Gastrojejunostomy simply drains the stomach at the most dependent point. It does not remove the ulcers nor the scars that may be present from healed ulcers, nor any of the ulcerbearing tissues. It cures by diverting the gastric contents from their natural channels into an artificial outlet, thus securing rest to the ulcerated surfaces. Will

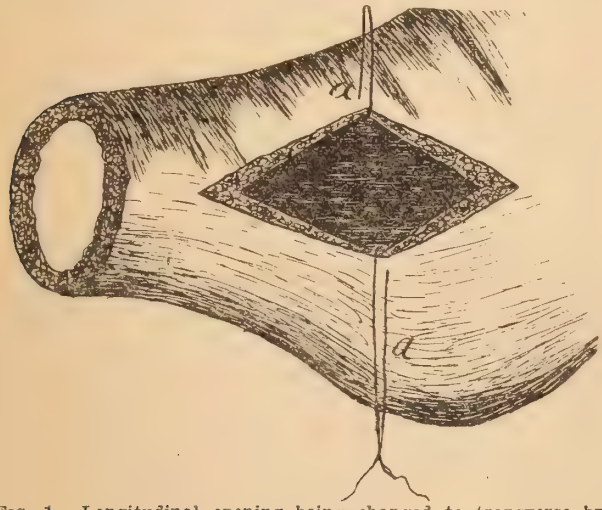

Fig. 1.—Longitudinal opening being changed to transverse by traction on threads, *a, a.*

the rest thus secured to these tissues also secure immunity from cancer? It must be understood that the innovation of surgery for the cure of gastric ulcer is a new procedure, really only five or six years old, and that gastrojejunostomy as now performed is among the youngest of all procedures. Hence, there has not been sufficient time to determine what effect, if any, this operation will have upon the devolopment of cancer in these tissues. If time demonstrates that cancer does not develop in the scar tissues of healed gastric ulcers, after this operation, the operation, because of its many qualifications will retain the position it now occupies. But if cancer continues to develop after the operation it will be supplanted by a more radical procedure. Hence the operation of gastrojejunostomy is on trial for the first place as a surgical procedure in gastric ulcer. Until this question is settled the mind of the surgeon will be restless, as we will not know until then, when we do a gastrojejunostomy whether we are doing radical or only palliative work.

In my judgment this operation will not endure. My work along this line leads me to the conclusion, that the specific condition out of which cancer matures invades the tissues while the ulcers are open, and that their development in the scar tissue years after is due to some other conditions than that produced by the passage of the gastric contents over the tissues; hence the diverting of these contents into a different outlet will have no preventive influence in the formation of cancer in scar tissue, in which the cancer principle already resides, and only awaits certain conditions of the general system for its development.

Cancer is always at some time a local condition. The question is, when is that time? When local it can be eradicated. It has been shown beyond question that a large per cent. of gastric ulcers develop cancer. There is no question, then, that every time we operate for gastric ulcer we may be handling cancerous tissues, though not demonstrable, hence local and removable.

From our view point then it is overwhelmingly impressed, that the removal of that part of the stomach and duodenum in which the diseased tissues are located is the best operation, in those cases where the surgical endurance of the patient is not overtaxed by the work. And this last caution must be carefully weighed before we allow it to interfere with an operation, that is in our judgment of so great moment to our patients. A real danger only and not an imaginary one should divert us, the facts being that a pylorectomy is but little more exacting upon the patient's surgical endurance than gastrojejunostomy. When we consider that pylorectomy not only eliminates the danger of cancer later in these tissues, and that the normal relations of the organs to each other and to neighboring viscera are not changed, and that the normal course of the gastric contents through the alimentary tract are not diverted by it, and when we recognize the fact that gastrojejunostomy, has not always mastered the situation by removing the conditions for which it was done (ulcers having formed several times at the site of the anastomosis), I repeat, when we consider these facts, we are overwhelmingly impressed that pylorectomy should, and soon will be the operation of choice, in those cases of gastric and duodenal ulcers, where the ulcers occupy their usual sight close to the pylorus.

Pylorectomy, in the great majority of cases, can be done quickly and securely by end to end anastomosis, the disparity between the sizes of the amputated duodenum and pylorus not usually being sufficient to cause any trouble. In a recent case in which the stump of the duodenum was a little smaller than the stump of the pylorus, perhaps a half inch, I seized the edges of the cut end of the mucous membrane of the duodenum with artery forceps, placing one opposite the other, I then elevated the cut end of the duodenum with these so that nothing could escape from it, removed the clamp that had been applied before the resection was made, and introduced into the severed end of the gut a rectal speculum and carefully dilated about two inches of it, until it was as large as the pyloric stump to which it was to be attached. I then reapplied the clamp that had been removed and made the anastomosis without trouble. I believe it will be very exceptional when the disparity between the two ends to be united cannot be overcome safely, and quickly, by this simple manœuvre.

In the third general class, or in that class in which surgery is necessary, by reason of the results of gastric ulcer, for instance hæmorrhages, perforations, and contractures, there is not much contention as to methods. All cases of hæmorrhage, of course, are not surgical. The question being, which ones are? When oft repeated, in spite of medical aid, and the patient is becoming reduced by reason of them, surgical methods should be adopted. The surgical endurance of these patients is always low, and the simple operations are usually indicated. Pyloroplasty may be used here to excellent advantage. Locate the ulcer in which the bleeding is going on, before incising the stomach wall, if possible, then make the incision longitudinally through the stomach wall and through the ulcer. Turn the edges of the wound out and secure the bleeding point. Explore the ulcer and determine its size, remove enough of the stomach wall on each side of the incision to include the ulcer and close the wound, placing the stitches longitudinally, thus preventing contractures. (Figures 1 and 2.) The ulcer from which the bleeding occurs cannot always be located before the stomach is opened. In such cases, the anterior wall of the pylorus is incised longitudinally, as the ulcers are usually located on the opposite or posterior wall. Through this incision the bleeding point on the opposite wall is discovered, seized with forceps, and dragged through the incision in the anterior wall, enough of the posterior wall is dragged through to include all of the ulcer if possible. The stomach wall at the base of the ulcer is stitched through and through transversely with the pylorus. The posterior wall is now released and drops back with the diseased tissues projecting into the stomach, being retained thus by the row of stitches placed beneath them. The primary incision is now closed, and the work completed.

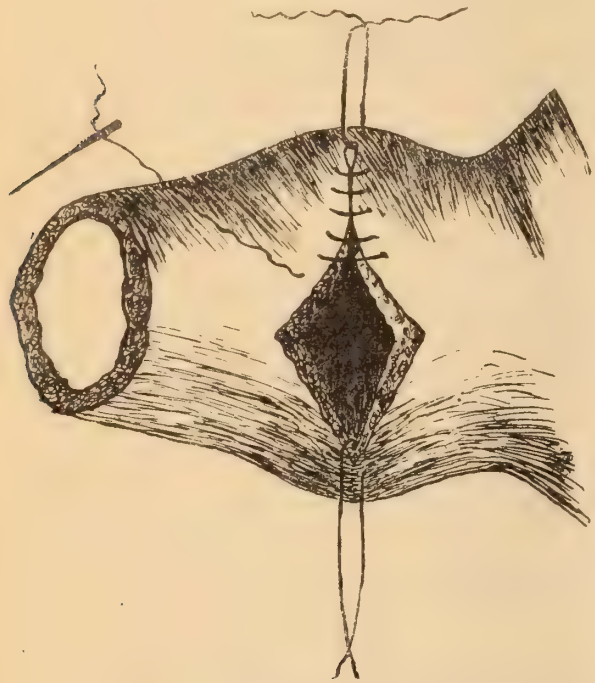

FIG. 2.—Closing transverse opening by stitches placed longitudinally.

As to acute perforation of gastric ulcer, there is little to say. Owing to the overwhelming conditions produced by the escaping of the gastric contents into the peritoneal cavity, all of these patients die unless prompt surgical interference is had, which must be instituted within three or four hours from the time the perforation takes place, or it will be useless. The procedure here is: Secure the opening in the stomach, depress it so that it projects into the stomach, and stitch the walls of the stomach over it, clean the peritoneal cavity by washing, or wiping, as seems best, provide ample pelvic drainage, and place the patient in the exaggerated Fowler position.

Chronic perforation produces perigastric and subphrenic abscesses, the treatment of which comes more properly under these conditions and will not be discussed in this paper.

Hourglass contractures of the stomach are due to the cicatrices caused by the healing of large ulcerated areas of the stomach wall. These are as a rule best treated by resecting that part of the stomach containing the contracture, between clamps, and making end to end anastomoses of the proximal and distal stumps in the usual manner.

4625 GREENWOOD AVENUE.

ODDS AND ENDS IN A SERIES OF THREE HUNDRED OBSTETRICAL CASES IN PRIVATE PRACTICE.

BY P. BISHER, M. D.,
New York.

In reviewing this series of three hundred obstetrical cases in private practice it is my object to show the somewhat doubtful reliability of statistical records and to point out the essential features in treatment and conduct of these cases, as justified by the very favorable results attained in the course of my attendance upon them.

Of the seventy primiparæ in this series, ranging in ages from seventeen years up to forty-two years, the use of forceps was resorted to in eighteen cases, or in twenty-seven per cent., as compared with the usual statistics of forty to fifty per cent. forceps applications in primiparæ, the latest one of Dr. Broadhead of fifty per cent. The urine in each of the primiparæ showed a trace of albumin up to the time of delivery, and in one patient a very large percentage, which patient, nevertheless, was delivered safely under a restricted diet of milk for six weeks prior to the expected term.

Laceration of the perinæum of varying degree occurred in all of the forceps cases and none in the normal deliveries. In every one of them I did not hesitate to sew up the parts, disregarding the opinion of the bystanders as to my obstetrical ability to do a clean job. The results were good in each case. In two of the forceps cases, though the patient was fully anæsthetized, a spontaneous expulsion of the head was caused by a sudden pain, while I relaxed my hold on the forceps, thus proving the importance of constant vigilance and hold upon the instruments. The deep laceration of the perinæum caused by this accident was at once repaired with a good result.

The usual duration of labor prior to application of forceps was twenty hours, and the only cause for it was uterine inertia. A characteristic feature is the begging for forceps and anæsthesia in some

of the primiparæ during their subsequent delivery.

The placenta was delivered by Credé's method soon after delivery of the child in order to prevent a post partum hæmorrhage and to better control the uterus.

Two patients among the primiparæ had what I would call a "precipitate labor," for on my arrival at their home shortly after the call, the little stranger was there to greet me by his yell in spite of the anxiety of friends to smother it. In four primiparæ an occiput posterior was the complicating feature, necessitating delivery by forceps with a resulting slight laceration of the perinæum. In two of the primiparæ the footling was the presenting part, and delivery was accomplished in the usual way.

In looking for a cause for the small percentage of forceps applications in my primiparæ I can ascribe it solely to my policy of waiting and to my endeavor to conserve the strength of the patient for the final ordeal, as in variety of age, physique, and nervous endurance they represent every status of temperament and society. When called to a primipara, I invariably, when on examination find the os dilated to one finger, put her on pulv. opii, gr. 1 every three hours, until 3 of them are taken. This controls the usually tearing and wearing initial pains and gives the patient the necessary few hours of rest before the productive pains set in. For a month prior to the expected delivery I order my primiparæ to take a tablet of strychnine sulphate gr. 1-60 t.i.d. as a general tonic and nervous stimulant. It was more than once a satisfaction to me to observe the salutary effect it had upon the quality and strength of the pains and upon the nervous endurance of the patient during the trying ordeal. It seems to act as a bracer.

The average number of days kept in bed were eight days, though two of them were up on the third day doing their housework, and one after a difficult forceps delivery sitting up and combing her hair within eighteen hours after delivery.

In none of the primiparæ has the temperature at any time reached above 100°F., and none developed a mastitis, though sore nipples was the rule in almost all of them. The same holds true in all of the three hundred cases, except that the complication of sore nipples was less frequent in multiparæ. When considering the complications among the multiparæ in this series, the fact of rareties in medicine coming in crops holds true here, as will be seen from the following reports:—

After running off some one hundred and ten uncomplicated cases, barring forceps applications, four transverse presentations with a prolapse of an arm occurred successively within ten days. Two more of the same nature followed within three months, and for the past two years I am awaiting the next crop, surely to come. This will give us one case of this nature in fifty, where statistics give us one in two hundred and fifty, thus leaving a good balance to my credit, and a hope of the absence of a transvere presentation for the next twelve hundred cases. The treatment in all of them (multiparæ) consisted in the reintroduction of the prolapsed arm under anæsthesia, version, and podalic extraction. In each case mother and child made an uneventful recovery.

As for complications in multiparæ, first in order of frequency in my series of cases were twin pregnancies, numbering eleven cases, or one in twenty seven cases, where statistically should be one in ninety cases. Among the positions: the first fœtus in seven cases presented head first, in the remaining four the breech was the presenting part. The second fœtus in five cases presented transversely, necessitating version and podalic extraction. Delivery in all of the twin cases was not difficult owing, no doubt, to the small size of the fœtus, the heaviest one weighing five and one half pounds. Six of the twenty-two children died within two days of delivery. The rest of them remained alive up to the time of my discharging the patient from observation. In one of the twin cases the clots of blood removed by me from the uterus half an hour after delivery were the size of a fœtal head, giving me the impression that I was disengaging another body of a fœtus from the uterine cavity. Two cases of placenta prævia, one in one hundred and fifty, statistically one in five hundred and seventy-three cases, with recovery of mothers and children. One case of accidental hæmorrhage in the ninth pregnancy; one case of face presentation and one of eclampsia were the other complicating features among the multiparæ. The absenc of a prolapse of the cord among all of the cases is worthy of notice.

The use of forceps was resorted to in about ten per cent. of the multiparæ, the main cause being uterine inertia.

A very active post partum hæmorrhage was encountered in one patient in each of her consecutive deliveries by me; but the accident being anticipated was devoid of the terror of being taken unaware. In each instance the hæmorrhage was sufficient to blanch the patient and make her "air hungry." I can only account for the repeated hæmorrhages by the absence of her menstruation since marriage (seven years), for her pregnancies followed in rapid succession at the end of her lactation period. She has not seen her menstrual blood for seven years.

An eclampsia occurring in the second pregnancy resulted in leaving the mother partially blind up to the present time, three years after the incident; the child surviving rapid delivery.

The placenta required a manual delivery in fifteen patients of the whole series after waiting for forty-five minutes, and in each case an attachment somewhere to the uterine wall was the cause of it.

The fœtal mortality of four in the all of three hundred deliveries occurred from the following causes: One in the case of accidental hæmorrhage due to partial separation of the placenta, the mother in her ninth pregnancy, and having continuous hæmorrhages for three months prior to the delivery, and unduly confident of her obstetrical knowledge and experience failed to consult me up to the time when a very copious "hydrantlike" hæmorrhage put her to bed in short order. The fœtus in this case was born dead in a condition of rigor mortis showing only a recent demise. One fœtus was born dead after a breach delivery in a multipara. One in a patient who twice previously gave birth to a dead fœtus, the cause was not ascertainable. One born dead of a primipara whose husband is an epileptic.

Ophthalmia occurred in none of the children, though the instillation of silver nitrate has not been practised by me. My invariable rule is to use a two

per cent. warm boric acid solution as a wash for the eye and mouth immediately upon the birth of a child.

A retrospective view of all the cases and the apparently good results obtained in warding off puerperal fever and other complications prompts me to point out the predominating features in my handling of these cases: There should always be a painstaking effort on the part of the attending physician at reasonable asepsis, even if such is obtained with difficulty. It is well to train oneself to do part of the nurse's work if one of intelligence is not at hand, as is usual among the tenement practice. Where even the limited supply of clean sheets, cases and towels is hidden, as often is the case with ignorant poor, I resort to "rummaging" among the drawers of a side chiffonier or a corner trunk, disregarding the protestations of the bystanders that it would be a pity to soil the clean things. I do not stop to reason or convince them of the fallacy of their belief, for I consider it a waste of aseptic time! However, by insisting upon cleanliness and supervising same at each visit, you can often convert even the hopeless cases to your point of view. A very liberal use of hot water with lysol with a vigorous use of the brush for the hands is one of the prerequisites for the examination of the patient. By way of digression I always ask in suspicious tenement house cases about the uses the hand basin handed to me was previously subjected to, for they often think that any basin is too good for the doctor's hands. Minimum vaginal examination during labor and religious abstainance from introduction of fingers into the vagina as a matter of habit or to trace the cord after the delivery of the child is something I cannot too strongly insist upon. Nothing but a very urgent demand will prompt me to do so. While in about two hundred patients I invariably resorted to post partum douches, I have lately abandoned it and with the exception of a saving in time have no more to commend it for. While it has done no harm it leaves me as yet under the impression that the patient was not left thoroughly clean. Perhaps the habit of douches is still strong with me. Last but not least, I do not allow my nurses to wash off the patient but insist upon ablution of parts from a pitcher containing one teaspoonful of lysol to two quarts of warm water. I do not trust the hands of the best intentioned obstetrical nurse. As to the odds in this series cases worthy of mention are the following:

Case I.—Mrs. B. G., thirty years old, Irish, secundipara; was in labor for twelve hours prior to my arrival; the midwife in attendance departing before my coming for reasons which will be apparent later. On cursory examination by lfting the bedclothes I found a prolapsed arm, very much œdematous. Under anæsthesia I reintroduced the arm, performed version and podallic extraction of a living child after considerable difficulty in clearing the after-coming head. On the introduction of my hand to deliver the adherent placenta, I encountered a mass of scybellæ and at the same time a profound shock to my exaltation in getting over safely a very unpromising case. A complete perineal laceration through the sphincter was not a very joyful prospect and surely one not bargained for. On my next day's call when coming prepared to repair the damage I was requested by the patient to be left alone, as in her words she was like "a baby" in regards to her desire for stool since the birth of her first child two years ago and has no objection to the continuation of the same state. Completely taken by surprise, I examined her closely and found only vestiges of a sphincter, the damage having been done by the midwife then in attendance and who very wisely departed before my arrival at this second labor. Here was a human specimen with a horrible condition of being "like a baby" for two years and still refusing to be delivered of her misery for fear of an operation. Under daily antiseptic douches she made a good recovery from her second labor.

Case II.—Mrs. M. F., forty years old, Irish, had the distinction of being delivered by me three consecutive times, and each time on the kitchen floor in front of a wash tub. Each delivery occurring at night was so spontaneous that the patient could only get time to sit down on the floor and pick up the fœtus from the mass of skirts and underskirts.

Case III.—Primipara, nineteen years old, Hebrew, drank a full pitcher of ice water three hours after delivery on a hot July day, having walked into the third room in search of it. No ill effect followed it and a confession was obtained from her when the disappearance of the water could not be accounted for on her mother's return shortly after from the grocery store.

Case IV.—Two sisters, secundiparæ; nativity, United States, Hebrew; of very impressionable nervous temperament. Were both delivered by me with their first children without complications. During their second puerperium occurring at an interval of three months apart both had on the ninth day and prior to their leaving the bed a very severe uterine hæmorrhage of a sufficient nature to lay them up for another five days. As their puerperium was in all respects normal otherwise, the following questions present themselves for solution: Was there any psychological connection to account for it as it happened on the same day and under the same circumstances when I left orders to the same nurse to get them out of the bed the next day. I have no other explanation for this unusual phenomenon.

322 East Fiftieth Street.

EYESTRAIN AS A FACTOR IN HEADACHE.*

By Linn Emerson, M. D.,
Orange, N. J.

Since headache is a symptom and not a distinct entity of itself it is seldom considered in the various textbooks on medicine except when it occurs as a result of some general or local disorder. We find it under the classification of neuralgia and migraine, but seldom as headache. Osler's excellent book has no such title to its many subheadings.

When a patient is suffering from some marked obvious disorder it is not surprising to find headache accompanying the morbid process, in fact we find it present to a greater or less degree in nearly every illness. But when it occurs as the predominant symptom in the patient's malady with little or no other apparent ill health, then it becomes a disorder entitled to recognition as such.

Since its causes are so manifold and the practice of medicine divided into so many specialties, it is not surprising that we find on the one hand the faddist and the hobby rider and on the other the skeptic. The reproach of specialism is that it too frequently finds disease in the organ examined, and I am reminded of a piece of advice often given by Professor Parvin to his students: "Gentlemen, be careful or you will find what you are looking for."

* Read before the Morristown Medical Club, October 3, 1906.

As an example of the obscurity of the causes of headache thirty years ago I submit the classification given by William Henry Day in his classic monograph on *Headache*, published in 1877: I, Intracerebral headache; 1, headache of cerebral anæmia; 2, headache of cerebral hyperæmia; 3, sympathetic headache; 4, dyspeptic or bilious headache (also known as sick headache); 5, congestive headache; 6, headache from plethora; 7, nervohyperæmic headache; 8, nervous headache; 9, arthritic or gouty headache; 10, organic or structural headache; 11, headaches of advanced life. II, Extracerebral headache; 1, rheumatic headache; 2, headache from affection of the periosteum; 3, neuralgic headache. III, Headaches of childhood and early life. At that time this no doubt seemed to the writer a rational and comprehensive classification, but please note that in his monograph of nearly one hundred

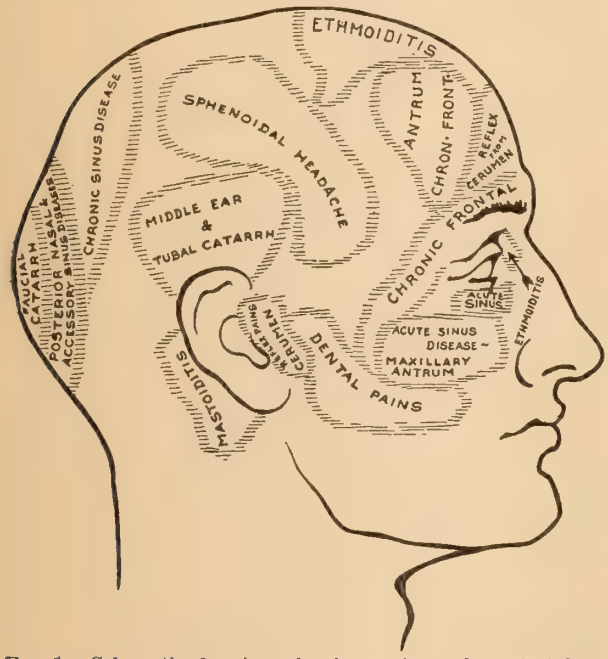

FIG. 1.—Schematic drawing, showing regions of greatest intensity of pain in headaches of nasal, aural, or oral origin.

closely printed pages not a single word appears on eyestrain as a cause of headaches.

About this same time Dr. S. Weir Mitchell published a paper, Headaches from Eyestrain (*American Journal of the Medical Sciences*, April, 1876), detailing his observations in a series of cases, and stating his conclusions as follows:

1. That there are many headaches which are due indirectly to disorders of the refractive or accommodative apparatus of the eyes. 2. That in these instances the brain symptom is often the most prominent and sometimes the sole prominent symptom of the eye troubles, so that while there may be no pain or sense of fatigue in the eye, the strain with which it is used may be interpreted, solely by occipital or frontal headache. 3. That the long continuance of eye troubles may be the unsuspected source of insomnia, vertigo, nausea, and general failure of health. 4. That in many cases the eye trouble becomes suddenly mischievous, owing to some failure of the general health or to increased sensitiveness of brain from moral or mental causes.

The importance of eyestrain as a cause of headache was brought to Dr. Mitchell's notice by a Philadelphia oculist, Dr. William Thomson, but fortunately it was brought to the notice of the profession by a neurologist instead of an oculist and as a result was received with much greater credence by the profession at large. Nevertheless, the greatest opposition developed, and strange as it may seem persists to this day. The greatest opposers are the neurologists, and a perusal of any of the standard textbooks on neurology would lead one to think that eyestrain as a cause of headache is a very remote possibility.

In Starr's *Familiar Forms of Nervous Disease*, under the title of headache, appears an analysis of 287 cases of headache, of which only seven were found to be due to eyestrain, although under anæmic, gastric, malarial, syphilitic, traumatic, plethoric, and miscellaneous, there were many who were not benefited by treatment. In

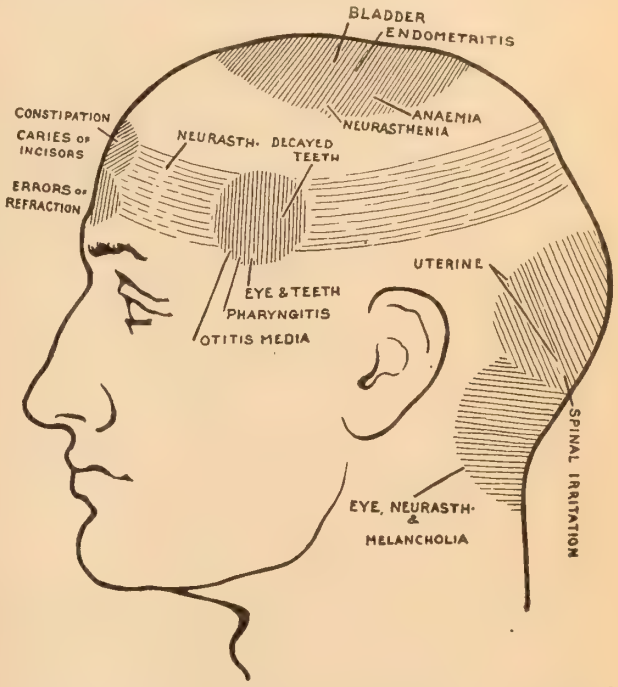

FIG. 2.—Outlines of region of pain intensity in general and nervous disease. From Dana, *Textbook of Nervous Disease*.

the chapter on neurasthenia not a word is said of the possibility of eyestrain being even a contributing cause to that condition. This same policy of ignorance or denial is maintained by practically all textbooks on neurology.

The oculist has been actively preaching the doctrine of eyestrain for the past twenty years, but since he has an ulterior motive insufficient importance has been attached to his various claims.

Then a few over enthusiastic ones have overdone the matter, and as a result a bitter feud has resulted between those who would attribute all the ills of the flesh to eyestrain and those who would almost deny its existence. That insomnia, vertigo, nausea, neuralgia, migraine, and general failure of health may be due to eyestrain is well known to every man who practises ocular medicine, yet at a recent meeting of the New York Academy of Medicine all the neurologists who participated in the discussion emphatically denied these facts. Dr. Sachs very naïvely ex-

plained that a case of migraine which was relieved by glasses was not a *true* migraine. There are many of us who are not quite clear as to exactly what constitutes a case of *true* neuralgia, migraine, chorea, or even epilepsy. In fact, I have doubts if anybody knows.

In a recent article by Kopetsky (*New York Medical Journal*, December 2, 1905) on Headaches in Diseases of the Ear, Nose, and Throat, while the subject is well reviewed, the same cursory mention of eyestrain is made as in the various textbooks, and a perusal of the article would lead one to think that eyestrain was an infrequent cause of headache. His assertion that the typical reflex headache referable to eyestrain and related conditions, from defective innervation of the ocular muscles with disturbance of the apparatus for accommodation, to imperfection in the refractive media, is always limited to the forehead, or in exceptional cases, to a small circumscribed spot in the occiput, is by no means absolutely true. While no doubt the causal relation of the frontal, ethmoidal, sphenoidal, and maxillary sinuses have been overlooked, until recently there is no reason why they should attempt to entirely supplant the ocular. However, on the whole, Kopetzky's article is an excellent one, and deals with the subject of headaches from a standpoint that has until recently been entirely overlooked. His two schematic drawings, one of which is copied from Dana's *Textbook of Nervous Disease*, are herewith submitted.

While as a rule the neurologist is as much of a skeptic as the oculist is a faddist on this subject, nevertheless it is with much satisfaction I quote as follows from Dr. Allan McLane Hamilton's monograph on *Modern Treatment of Headaches:*

The existence of headaches due to eyestrain has been recognized for years by those who have made the eyes a study, and the provision of proper glasses and treatment calculated to improve the tone of the ocular muscles has often been promptly followed by substantial relief. The location and character of pain vary greatly, but as a rule the former is either suboccipital or frontal. Some ophthalmologists ascribe the suboccipital pain to accommodation weakness and the frontal headache to refractive disturbance, but others are equally sure there is no constancy in the connection. The headache of eyestrain is of course produced by reading and aggravated by persistent use of the eyes and by bright lights. It is dull and continuous, and may be accompanied by lachrymation and photophobia.

Hypermetropic persons are those who most often suffer from headaches of this character, and with the hypermetropia there is often considerable astigmatism. Myopic persons through injudicious use of their eyes also suffer from dull, persistent vertigo and a great deal of distress. The victims of ocular headaches, as a rule, have red, swollen eyes, and when the inner surface of the lids is exposed, there will be found a low grade of inflammation with granulation. Through insufficiency of the recti, a variety of muscular asthenopia occurs with headaches. This is developed by close application to fine work, and obstinately resists ordinary treatment. After the patient's power of ocular adduction or abduction is determined by means of prisms a pair of concave glasses may be selected or prisms may be provided to overcome the weakness of the recti. In hypermetropic headaches, convex glasses are indicated, and first those of low power may be provided, which are to be afterwards increased. Some observers have noted a variety of migraine, which is due to eyestrain, and differs but little from the common forms, except perhaps, that is more localized.

It is indeed most gratifying to find a neurologist who will concede the possibility of migraine being due to eyestrain.

One of the proofs that the general practitioner has neglected and continues to neglect this causative factor in headache is the success of the advertising refracting optician. As but a small portion of refractive cases come to the oculist sent by the medical profession, the optician's clientele must be almost wholly made up of people who have tried various therapeutical measures for relief. In every community there are certain physicians who regularly send all cases of stubborn headache for ocular examination, and in many instances we are able to report that the eyes are the cause of the headache. There are also many physicians who never think of sending their patients to an oculist, and many times they come under observation through other channels. Every year we see dozens of patients who have taken an innumerable quantity of various remedies, when all that was required was a suitable pair of glasses. More than half the cases of so called bilious, or sick headache, are due to eyestrain, and many cases of neuralgia, migraine, nausea, and dizziness are due to the same cause.

Another class of cases that frequently fail to receive proper treatment are the early presbyopes. The individual with normal eyes and health goes to the age of forty-five before glasses are required for near work. But if there is moderate impairment of health or latent hyperopia present, the patient begins to have headaches at forty, or even sooner, and for various reasons the eye condition is overlooked. One of the principle reasons why the eye condition is often overlooked is because the mind of the layman associates the use of glasses for near work with oncoming senility, and as a woman is only as old as she looks and a man as old as he feels, the imputation that the patient is getting old is sharply resented. That the power of accommodation fails rapidly after the age of twenty-five is unknown to the patient, and to say that they are presbyopic or old sighted is an unpardonable breach of courtesy. There is such a condition as premature presbyopia, and in many instances we are obliged to give glasses for near work to patients even in the twenties. Among women all the head symptoms occurring between the ages of forty and fifty are generally attributed to the menopause. Many of these cases would be markedly relieved of their troublesome head symptoms by the use of proper glasses for near work.

In conclusion let me say that while I do not wish to appear over enthusiastic on the subject of eyestrain as a cause of headache nor to advocate ocular examination in all cases of headache, nevertheless I wish to say that eyestrain is more conducive to headache than any other single

known cause, and that twenty to twenty-five per cent. of the headaches of the human family are due to eyestrain. In view of this fact it would seem that any physician who fails to consider this factor in a case of persistent headache is as negligent as though he failed to make a proper uranalysis.

METROPOLITAN BUILDING.

DIVER'S PARALYSIS WITH SCARLET FEVER?

BY RICHARD ELLIS, M. D.,
New York.

H. M., age twenty-eight, civil engineer. Patient had been working in compressed air (twenty-seven pounds) for six months. He then worked out of doors for a month, and returned to tunnel work in a pressure of thirty-five pounds. Three weeks after he returned to this "high air," he was found lying helpless at the exit of the airlock. He was carried to the hospital lock and at once put under thirty-five pounds of air and slowly "decompressed." Three hours after he was carried to the hospital.

There was complete loss of sensation and motion from the nipple line down, with partial paralysis of the diaphragm and entire loss of temperature sensation. There was partial paralysis of arms and neck, so that his hands, arms, and head were not under control. There was complete paralysis of the bowels and bladder. His mental condition was normal. Two days after an expert in spinal diseases gave a bad prognosis and ordered no treatment. His temperature ranged from 99° to 102°, pulse about 90. On the fourth day scattered red points appeared about both elbows. On the fifth day there was quite intense hyperæmia of the skin of the entire body looking like scarlet fever rash. The throat was not sore, but slightly red; the tongue was coated with red edges. There never was nephritis, but cystitis developed early. There was complete desquamation. There were severe rheumatic pains in left shoulder and elbow and left knee joints. There were no other complications.

Three experts made a positive diagnosis of scarlet fever and as a result the patient, with four attendants, was isolated for six weeks in the hospital garret. It is not necessary to write about the extra suffering such an isolation caused the patient and his friends because "the other patients must be protected at any cost." No other cases developed among two hundred and fifty patients.

In the Harveian lecture on Myelitis (*Lancet*, July 7, 1906), Dr. J. S. Russell concludes his lecture by quoting a case as follows: "From a vague state of ill health, he fell into a condition of paraplegia, which was so severe that one of our best authorities on nervous disease who saw the patient gave a most unfavorable prognosis. The patient, however, subsequently, under careful treatment, made an uninterrupted recovery, and is now completely well. So that whereas at the outset he had all the evidences of an acute infective process, including a scarlatiniform rash and acute cystitis in association with paralysis of his sphincters, he made a recovery so complete that even the sphincters are normal."

In other words, here are two cases of acute myelitis with a scarlatiniform rash. It is so easy for a health officer to make a diagnosis and issue his orders, but no one knows how difficult it is to obey those orders, except those with six weeks' experience in scarlet fever isolation. Experts in the diagnosis of scarlet fever should study such cases more carefully in order to *know* whether this rash attending some cases of acute myelitis is really scarlet fever or an acute exfoliating dermatitis.

Our Readers' Discussions.

A SERIES OF PRIZE ESSAYS.

Questions for discussion in this department are announced at frequent intervals. So far as they have been decided upon, the further questions are as follows:

LVII.—How do you use mercury in syphilis? (Closed December 15, 1906.)

LVIII.—How do you treat acute synovitis? (Answers due not later than January 15, 1907.)

LIX.—How do you treat phlegmasia dolens? (Answers due not later than February 15, 1907.)

Whoever answers one of these questions in the manner most satisfactory to the editors and their advisors will receive a prize of $25. No importance whatever will be attached to literary style, but the award will be based solely on the value of the substance of the answer. It is requested (but not REQUIRED*) that the answers be short; if practicable, no one answer to contain more than six hundred words.*

All persons will be entitled to compete under the regulations laid down by the postal authorities. This prize will not be awarded to any one person more than once within one year. Every answer must be accompanied by the writer's full name and address, both of which we must be at liberty to publish. All papers contributed become the property of the JOURNAL.

The prize of $25 for the best essay submitted in answer to question LVI, has been awarded to Dr. E. S. McKee, of Cincinnati, whose article appears below.

PRIZE QUESTION NO. LVI.

THE TREATMENT OF SCIATICA.

BY E. S. MCKEE, M. D.,
Cincinnati.

The first essential to the successful cure of sciatica, the hip gout of Pliny, is a thorough knowledge of the individual patient in hand. We should in the beginning institute a most exhaustive physical examination, not only of the sciatic nerve, but also of the entire nervous system, and the patient's whole body, family history, diseases, mode and place of living, business, habits of life, and diet. If the patient is a woman, especial attention should be given to a careful rectal and vaginal examination, for the disease in women is often due to pelvic tumors. One cannot know too much about his patient, suffering from this obscure malady.

Treatment should commence with that best of all starters, a mercurial purge, followed by salines. Constitutional elimination and general therapeutical measures to relieve pain and promote sleep should be the treatment instituted as soon as the diagnosis is positively settled and the causative relations made clear. Morphine should be used with extreme caution, owing to the very great danger in these cases of forming the habit. Rheumatic cases are generally benefited by the salicylates, syphilitic cases by the iodides, and gouty cases by colchicum and the salines. One of the

best combinations of drugs in the acute stage is the following, which should be preceded by the calomel and the salines:

℞ Aspirini (acetyl salicylic acid), dr. i, or 60 grammes;
Phenacetini (ácetphenetidin), gr. L, or 3.33 grammes;
Quininæ salicylatis,.....gr. xx, or 1.33 grammes;
Codeinæ sulphatis,
gr. iiss to v, or 0.15 to 0.33 gramme.

M. Fiant capsulæ No. x. S. Take one every two or three hours.

Injection treatment. Hypodermics of very large doses of strychnine in the region of the painful parts have cured cases which were rebellious to every other plan of treatment. Injections into the region of the nerve of atropine sulphate, gr. $^1/_{150}$, three times a day, also cocaine injections as near the nerve as possible, are frequently followed by success. Deep injections of alcohol, cocaine and alcohol, stovaine (amylene hydrochloride), 80 per cent. alcohol and the incorporation of 0.01 of cocaine or amylene hydrochloride. Relief is obtained in about 90 per cent. in from two to four injections. Relapses, generally after the fourth or fifth month, occur in about one third of the cases, but yield readily after one or two injections. Betaeucaine (benzoylvinyldiacetonealkamine), 6 per cent. solution in 0.8 salt solution, should be injected in the region of the sciatic notch. When a large wheal appears under the skin the needle is pushed down till a jerking shows that a nerve has been touched, then 70 to 100 c.c. are rapidly injected. Functional and complete relief is almost instantaneous. In a portion of cases only is a second injection necessary for complete cure. The hypodermic injection of sterilized air is sometimes quite beneficial, and should be conducted as follows: After sterilizing the region where the injection is to be made a sterilized hypodermic needle is inserted under the skin, and as soon as one is sure that no blood-vessel has been punctured, a rubber tube is joined on to the needle and air from a rubber bag is injected by simple compression. To be quite safe, it is well to place a glass tube containing a little cotton between the needle and the bag. The injection should be stopped when the patient no longer complains of pain. A slight amount of massage should be used every day till crepitation disappears.

The rest cure of Weir Mitchell is beneficial in some cases, and the fixation of the limb in plaster of Paris is good treatment, especially in those cases where the vocation necessitates violent exercise of the lower extremities. Change of occupation is often necessary to the active, or vice versa. The sedentary person should sit on a soft cushion to protect the nerve from pressure or injury.

Massage along the course of the nerve, even though painful, is often of benefit in relieving adhesions. In true neuritis massage is, as a rule, not beneficial. Massage, or better, mechanical vibration, is of value in the chronic stages where atrophy has commenced.

Hydrotherapy, judiciously administered, should always be accorded consideration. It has many cures to its credit. The wet pack administered at night is a very excellent means of relieving pain, as well as for influencing, favorably, the neurotic process. For this purpose we may use the leg of a heavy pair of drawers dipped in water at 65° F. and placed in position like a stocking. A roller bandage is then applied so that the leg may be kept in perspiration all night. This is removed in the morning and followed by a warm water ablution and massage. Ten or twelve packs usually result in much improvement. The half combined bath in the subacute stage proves quite serviceable. Patient sits in a vapor bath, which comes up to the waist line only. This, while it does not exhaust the patient as much as the full vapor bath, allows a much higher temperature to be borne by the affected part; 110° can be tolerated for from ten to fifteen minutes. At the end of this time the patient sits in a bath heated to a temperature of 95° F. for eight minutes, and during the last three minutes a hot undercurrent douche at 102° to 112° F. is applied to the affected limb. The combined bath alternated with the natural swimming bath is of value. The internal bath by the ingestion of large quantities of water is advisable.

Electricity. The galvanic current should be applied to the nerve from four to eight minutes, and should not exceed from three to five milliampères. When the nerve substance has been involved gentle muscular stimulation with the uninterrupted galvanic current keeps the structures in good condition and prevents atrophy. The static spray (positive) locally is good. The apparent anodyne action of faradism in sciatica is due to its alterant action on the muscular tissue, and through the latter on the circulation. The blood supply is regenerated and the cry of the nerve for healthy blood is stilled. Painful applications of the faradic current are not proper.

Surgical treatment. In cases of long standing it is advisable to make an exploratory incision to expose the nerve trunk, incise its sheath, and free it from surrounding adhesions. Some good results of nerve stretching are reported and many bad. It is an operation which has not gained much commendation from the general medical mind. Myelitis has in a few instances followed, and nerve stretching is contraindicated when neuritis is present. There is a substitute operation called bloodless nerve stretching in which, while the patient is under ether, the thigh is forcibly flexed upon the pelvis and the leg extended at the knee, and this position maintained for some minutes.

Cure is easier in the young than in the old, and in those of fair general health than those suffering from various serious chronic diseases. The more pronounced neurotic processes are not so amenable to treatment as the milder types, and one attack predisposes to another. The reason that some patients do not recover is that they are unable to pursue a persistent or systematic plan of treatment, and the physician, or more probably the physicians, who have had the case in hand have not had opportunity, owing to the frequent changes, to sufficiently study the case. Otherwise, the failure to cure must be due to the medical man not having studied his patient thoroughly enough, having overlooked some point.

The only thing for him to do is to commence at the beginning, go it all over again, and try to ascertain wherein he has failed, for he has failed somewhere. An exact diagnosis of the conditions is one of the first and last means of cure.

Qui bene diagnoscit, bene curabit.

19 West Seventeenth Street.

Dr. Samuel Stalberg, of Philadelphia, writes:

As soon as a patient with sciatic pain comes under my care, he is placed in bed and kept there until well. The sick room should be light and airy. Three grains of calomel in ¼ grain doses every hour are given, followed by a bottle of effervescent magnesium citrate solution. The diet is light, or, if fever is present, liquid. If the patient is found to be, or to have been, suffering from rheumatism, as is very often the case, sodium salicylate, from 10 to 20 grains three times daily are ordered. If his history is gouty, either this or 15 minims of the wine of colchicum root, three times daily, and an alkaline mineral water are administered. Daily, for from two to five days, from 20 to 30 dry cups are applied over and around the sacrosciatic notch and down the thigh to the bend of the knee along the line of the nerve, and left for one half hour. A flannel bandage, four inches wide, is applied, snugly, around the limb from the hip joint to the sole, the first day. Hot water bags are placed under the painful spots and along the tract of the nerve in the thigh, and the patient allowed to rest on them, during part of the day. If the pain is not relieved markedly, hot fomentations are added. If the pain is acute, and especially if some fever is present, ice bags instead of the heat, are used, for a few days, or until the subsidence of the acute inflammation. All movements of the affected leg should be avoided.

Some patients require nothing further. But in the majority of patients the pain on moving the limb, and the tenderness are not relieved by these measures. In those cases I begin the use of the splint about a week or ten days after taking charge of the case. A well padded, light, wooden, sidesplint is applied from the axilla to the ankle. The limb is fixed in a comfortable position, usually slightly flexed at the knee and almost straight at the hip. All the precautions regarding pressure at the heel, etc., are taken. The bandage is kept on, and the splint is reapplied every day. In many cases this measure combined with those previously mentioned suffices to carry the patient through. The splint is removed in about three or four weeks, and the bandage left on, but the length of time is determined in each case.

But if with the splint pain and tenderness are sufficiently strong to be disturbing to the patient, light touches by the actual cautery or Paquelin cautery over the seats of pain are made, a few every other day. The hot fomentations and dry heat are continued, and the "Scottish douches" are given daily. Such a douche consists in a stream of warm water of gradually increasing temperature being directed on the course of the nerve until the pain subsides, when it is suddenly changed for a cold jet. During all that time the patient is kept on a light but nutritious diet, one free from red meats, starches, and sweets, but including fish, poultry, custard and plenty of milk. Constipation and renal deficiency are provided for, and the general hygienic measures observed.

Most patients get well on this treatment. If the pain during any part of the disease should be too strong to be controlled by the foregoing measures, an occasional dose of phenacetin (acetphenetidin), gr. iij, fortified by caffeine, gr. ij, can be given, not more than twice in any one day. If the pain is very severe, an injection of cocaine hydrochlorate, gr. $^1/_{10}$ in 20 minims of distilled water is made, with all aseptic precautions, into the sheath of the nerve at the most painful spot. A larger dose may be necessary—up to gr. ¼. Not all of these measures are carried on simultaneously in all cases, but every case is a law unto itself, and the measures adopted are according to the exigencies of the case. In cases in which all active signs of the disease are gone, but where are persistent areas of vague tenderness or soreness, light massage, consisting of gentle upward strokes, combined with the heat, dry and wet, is carried on.

About one week after convalescence has set in, after the pain on motion and tenderness are gone, the patient is cautiously and carefully allowed to get off the bed, on crutches at first, being ordered back to bed on the first appearance of pain on motion. When he his discharged he is cautioned against sitting on hard chair edges, against jumping, running, etc., exposure, and treatment for any underlying constitutional condition, such as rheumatism, is continued. During the latter part of the period, the patient's debilitated condition is improved by cod liver oil or a combination of the elixir of iron, quinine, and strychnine phosphates.

This treatment is for a more or less typical case. But when our treatment has been used for six or eight weeks, and the patient does not show any improvement, or during the first month if the suffering from the pain is intense, use the following procedure first carried out by Lange, with all aseptic precautions: Two or three ounces of a sterile solution containing gr. j of betaeucaine (benzoylvinyldiacetonealkamine) and gr. x of salt, is injected through the muscle into the sciatic nerve at its point of emergence from the sacrosciatic foramen. There is little pain as the muscle is pierced by the needle, but the patient jumps the minute the nerve is reached, which pain is instantaneously deadened by the injection and is often banished for good. If not, a second injection is made in a few days. Morphine is rarely used. The danger of contracting the habit is too great. But when the patient is racked with pain, and it must be stopped at once, an injection of gr. ¼ is permissible.

In cases where the patients are not cured or improved considerably after two or three months' treatment with these measures, electricity is tried. The galvanic current is employed. A small flat electrode is placed firmly over the sacrum or buttock, and with a smaller sponge electrode, firm, but not painful, pressures are made over the nerve. The current strength is regu-

lated according to the feeling of the patient. Faradism, the electric spark, and the incandescent electric light are often employed. Massage is also given.

In chronic cases, of a year or over, removal to another climate is advised. There, the change of scene, together with the really beneficial measures of mud, peat, sulphur, and hot water baths, together with the copious drinking of natural alkaline mineral waters, helps to cure the patient often very speedily.

In the intractable cases of long standing, from a half to two years, not benefited by other measures, operative procedures are advised. Under ether anæsthesia the patient is placed on his abdomen and an incision four inches long is made in the middle line of the leg, beginning below the glutæofemoral fold. As soon as the deep fascia is cut through, the belly of the biceps is seen and, at its outer border, is found the trunk of the great sciatic nerve. It is then stretched by inserting a blunt instrument under the nerve, and lifting the whole leg, which is thus suspended on the nerve. This is kept up for about five minutes. The sheath of the nerve may be incised and, analogous to this procedure in joint cavities, the sheath be flushed with normal salt solution. In rare cases when the sciatica is caused by the pressure from a too narrow foramen, the latter is chiselled to larger dimensions.

In outlining all those treatments, some attention should be paid to the morbid anatomy. Sciatica in the vast majority of cases is a neuritis, and the rest, cold and heat, counterirritation, are measures in accordance with the fundamental rules of surgery regarding the treatment of inflammation generally.

Under the term "sciatica" I did not include sciatic pain due to sciatic neuralgia, or the result of intrapelvic growths, or that found due to such constitutional states as diabetes, syphilis, lead, alcohol, and arsenical poisoning. Sciatic neuralgia can easily be differentiated from true sciatica, sciatic neuritis, by signs which I shall not stop here to discuss, and is readily controlled by correcting an underlying anæmia, and by analyesics and nervines. Syphilitic sciatica should be treated by mercury and potassium iodide; the metallic poisoning by proper eliminative measures; diabetes by dietary and hygienic measures, and intropelvic or spinal growths excised. The avoidance in the rheumatic and gouty of draughts and injury to the sciatic nerve is an important part in the proplylaxis of sciatica.

Dr. N. F. Barclay, of Pittsburgh, Pa., remarks:

I shall not describe what others have said, written and done in the treatment of sciatica, but what I do. To be brief: In recent years when I am satisfied as to the diagnosis which as a rule is not difficult, I direct rest in bed, insisting that the bed is a most important part of the care and treatment essential to prompt relief and cure of the disease. I direct five grains of quinine sulphate three times daily preferably administered in a cachet after eating meals. If the tongue is coated I direct two grains of calomel compounded with ten grains of milk sugar at bedtime. I advise a plain nutritious diet; as a tonic I prescribe the solution of gold bromide and arsenic, ten drops in a glassful of cold water three or four times a day—after eating and at bed time. I never give opiates or anodynes. As a relief to pain the external application of guaiacol with oil of sassafras, oil of birch, oil of gaultheria, in a liniment properly compounded, is useful. I find this a safe treatment that seldom fails to relieve and cure the patient in a seasonable and satisfactory manner without unpleasant results from medicine. The action of quinine is invariably curative and its unpleasant effects not observable when given in large doses in treatment of sciatica.

Therapeutical Notes.

Rapid Cure of Scabies.—The cure of itch in an hour and a half is said to be attainable by the method practised by Saboureaud (*Bulletin général de thérapeutique*, November 30, 1906). The patient is first rubbed for half an hour with black soap (green or soft soap); he then takes an alkaline bath for half an hour. After coming out of the bath the entire surface of his body is to be well rubbed with:

℞ Oil of verbena, } .....āā 1 part;
Gum tragacanth, }
Precipitated sulphur, ...100 parts;
Glycerin, ...200 parts;
To be well mixed.

A final bath is then to be taken, lasting from fifteen to twenty minutes. The clothing and body linen must be disinfected. During the fortnight succeeding this treatment four baths of starch water are given. In case there should be cutaneous irritation, local applications of ointment of zinc oxide are used.

Syphilitic Metrorrhagia.—Dalché (*Revue française de médecine et de chirurgie*, November 10, 1906, from *Le Bulletin médical*, No. 51) reports two cases of dysmenorrhœa and menorrhagia in syphilitic patients in whom the symptoms rapidly yielded to ordinary doses of biniodide of mercury without other treatment. Metrorrhagic may be caused by secondary syphilis in several ways: 1. By organic or functional diseases (ovaritis or simple ovarian congestion), or by some difficulty in ovulation; in other words, by some action on the ovaries. 2. By some general disturbance acting upon the whole organism, similar to that which occurs in diabetes and albuminuria. 3. By affecting other organs which react upon the genital apparatus, as in hepatic, renal, or nervous syphilis. 4. By producing precocious syphilitic arteritis. The diagnosis of this class of cases is difficult, but very important. It is permissible and advisable in some cases to put the patient on specific treatment in order to settle the question. The mercury is best given by hypodermic injection, and to this may be joined hot vaginal injections, and at the same time the other customary means of relieving the pains are employed.

Dietetic Treatment of Simple Ulcer of the Stomach.—In a clinical lecture reported in the *Bulletin général de thérapeutique* (November 30, 1906), Professor Albert Robin outlines his method of systematic treatment of simple ulcer of the stomach. In a series of sixty-seven cases which he had treated by this method exclusively, there were only two deaths (a mortality of only three per cent., in 97 per cent. of cures). He insists upon the importance of early treatment. As soon as the diagnosis of gastric ulcer has been made, or even if it be simply suspected, the treatment should be instituted. Should the ulcer not have been fully formed, or be only imminent, the method has a decided prophylactic value, because by suppressing the functions of the stomach it constitutes the best therapeutical means at our command to overcome the condition of the stomach which predisposes to the formation of ulcer. This condition Robin designates *hypersthenia*. At its beginning it is a purely functional disorder. Subsequently this functional disturbance, consisting in a superactivity of the entire stomach, which is at once nervous, secretory, and muscular, brings on structural modifications in the mucosa, and eventually provokes more or less marked lesions. The first step in the morphological modifications is constituted by hypertrophy of the gland cells. When this hypertrophy has atained its maximum, either there occurs degeneration of the cellular elements or hyperplasia of their conjunctive tissue, both conditions leading to chronic gastritis. Neither the functional nor the organic disorder, however, can produce gastric ulcer unless there is a coexisting hyperacidity of the gastric juice. Basing his treatment upon this view of the ætiology, Robin makes his primary and essential element "absolute rest." This is the first requirement to be observed in every case. If there has been a recent hæmorrhage, or it still continues, he orders an ice bag to be placed upon the epigastric region. This becomes useless when the bleeding stops, which can be recognized by the cessation of melæna. The giving of food and drink by the mouth, of all kinds, even a drink of water, is prohibited. In order to nourish the patient and to make up for his loss of water, he is given rectal irrigations to supply the latter and nutritive enemata for the former. To quiet the thirst, he is given every six hours an injection of 250 to 300 grammes of boiled water. One hour later, he is given the following enemata:

℞ Eggs (beaten up), ... No. 2;
Liquid peptone, ... 2 to 3 tablespoonfuls;
Solution of glucose (20%), ... 100 grammes;
Pepsin (strength 50), ... 1 gramme;
Sodium chloride, ... 0.50 gramme;
Sydenham's laudanum, ... 11 drops;
Concentrated bouillon, ... q. s. to make 250 c.c.

It is not advisable to add wine to this enema, since Metzger has shown that when wine is introduced into the rectum it notably increases the gastric secretion. The first day of this absolute rest of the stomach is rather troublesome, but generally by the second day tolerance is established. Should the rectum be very irritable, the salt may be omitted from the formula, or the peptones, which sometimes set up a little diarrhœa. It may be necessary to increase the quantity of laudanum by a few drops. This will generally overcome all difficulty on this score of intolerance. If the thirst should be so great that the quantity of water proves insufficient, then the injections may be given closer together, say, every four hours. Small pieces of ice may be sucked, or a teaspoonful of pure water containing a drop of laudanum may be given by the mouth. In order to prevent parotitis from infection through stenosis duct, the following solution is ordered:

℞ Betanaphthol, ... 0.20 gramme;
Sodium biborate, ... 15.0 grammes;
Mint water, ... 200.0 grammes;
Tincture of aconite root, ... 2 grammes;
Boiled water, sufficient to make ..... 1 litre.

This is to be warmed and applied by means of a tampon of cotton so as to thoroughly clean the walls of the mouth and the teeth. The following may be regarded as indications for suspending the absolute rest of the stomach: 1. The disappearance of all pains, either provoked or spontaneous. 2. The lowering of the blood pressure to an exaggerated degree. 3. The diminution of the daily discharge of urine below 400 c.c. 4. The too rapid or exaggerated diminution of the body weight. When at the end of six or twelve days (which constitutes the average duration of the absolute rest of the stomach), it is found that the loss amounts to three kilogrammes, it will be advisable to interrupt the treatment. 5. Decided failure of the general strength with syncopal tendencies. It is, however, very exceptional that the treatment has to be interrupted. The average duration of toal abstinence in Robin's cases was nine days. It is rarely necessary to go as long as fifteen days, and ten may be regarded usually as the limit. When cicatrization has occurred, the patient is gradually placed upon an absolute milk diet in the following way: On the first day, one nutritive enema is omitted and the patient is allowed to drink 100 grammes of milk during the day, a very little at a time. The second day, another enema is omitted and 300 grammes of milk given. This is continued each day until on the fourth day, the four enemata are replaced by 600 grammes of milk given by the mouth. The milk is given at intervals on the second day of four hours, three and a half hours on the third day, and three hours on the fourth day. After this time the milk is given in six doses of 200 grammes at three hour intervals. The dose each day is to be increased by fifty grammes until the patient is taking daily three or even four quarts of milk. It is never advisable to go beyond this quantity. The milk diet is to be continued until the patient regains his strength and weight. As a rule two months is needed at the least, and four months are required if the patient has had hæmorrhages, or he has pyloric stenosis. Following the milk diet, a mixed vegetable and milk regimen is followed. At the end of fifteen days milk is no longer given with the meals, and pure water is substituted. Then a little boiled fish or a piece of roast chicken is allowed, and gradually the patient returns to his ordinary mixed diet in the course of the following two to four weeks

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NEW YORK, SATURDAY, DECEMBER 29, 1906.

THE ÆTIOLOGY OF BERIBERI.

In the *Report of the Department of Health of the Isthmian Canal Commission* for August, 1906, five deaths were ascribed to beriberi, and in the Septer report eight deaths were recorded from this interesting form of multiple neuritis. The cause of this disease is still unknown. It has been thought to be due to many different agents, the activity of none of which, so far, is accepted as definitely proved. One theory of the occurrence of the disease is that it is due to a deficiency of nitrogen in the diet of those affected. Baron Takaki, surgeon general of the Japanese navy, still maintains this view, as may be seen in a paper published in the issue of this *Journal* for June 9th. Other observers, notably Yamagiwa, believe that the cause of the disease lurks in mouldy or diseased rice, and a paper by Gimlette attributing an outbreak of beriberi in the Sokor district of the Malay Peninsula to bad rice appeared in the *Journal of Tropical Medicine* for September 1st. In a recent admirable review of the present condition of our knowledge of beriberi, Herzog (*Philippine Journal of Science*, September) refers to the theory that the disease is a form of arsenical poisoning and summarizes the recent papers of Ross on the subject. Herzog himself, however, failed to find arsenic in the cases of ten native Filipinos suffering from various forms of beriberi.

Many observers believe it to be a bacterial disease. Manson believes that the germ resides in the soil or in the houses and surroundings of beriberi locations, and that it produces a poison which, when absorbed by man, produces a neuritis, much in the same way that alcohol does. Hamilton Wright believes that a bacterium, which he has isolated, inhabits the duodenum, and that it there produces duodenitis with the elaboration of a toxine which, when absorbed, produces the multiple neuritis characteristic of the disease. Dudgeon (*Journal of Tropical Medicine*, September 1st) has recently studied two specimens of the bacillus of Hamilton Wright, one of which was isolated from the duodenum and the other from the fæces by Wright himself. These organisms are considered by Dudgeon to be identical, the only points of difference being slight variations in morphology and the fact that one acidifies lactose, while the other does not. The organism is nonpathogenic to mice and guinea pigs. The blood serum from three cases of beriberi during various stages of the disease failed to produce any agglutinative reaction with the organism.

We have already referred in these columns to the coccus of Okata and Kokubo (*New York Medical Journal*, April 28, 1906) and to the organism discovered by Tsuzuki (*New York Medical Journal*, August 11, 1906). There are some minor variations in the published descriptions of the two organisms described by the Japanese observers, particularly the fact that one of the organisms (Okata-Kokubo) is nonpathogenic for guinea pigs, while the other, it is said, produces a disease in that animal similar to beriberi in man. Tsuzuki succeeded in obtaining agglutination reactions with the organism which he isolated.

The paper by Herzog, already referred to, gives the details of experiments made in the prisons and hospitals of Manila with the Okata and Kokubo coccus. Herzog had three strains of his organism which had been isolated by Okata, another strain which had been isolated by Kokubo, and two other strains which he had isolated himself while working in Japan under the direction of the Japanese observers. As a result of a large number of inoculation experiments, using various animals, and of the study of a number of autopsies, Herzog concludes that the Okata-Kokubo coccus bears no ætiological relation to beriberi. Furthermore, Herzog has been unable to obtain the Okata-Kokubo coccus from cases of beriberi in Manila by bacteriological examination of the blood during life or of the organs and fluids of the body after death.

So far, then, we can probably exclude the bacillus of Hamilton Wright and the Okata-Kokubo coccus as ætiological factors in beriberi. The statements of Tsuzuki as to the ætiological position of the coccus isolated by him still lack confirmation.

THE DANGEROUS ACTION OF MERCURY ON THE KIDNEY.

It is probable that certain instances of nephritis met with in cases of long standing syphilis are less the consequence of the latter than of the treatment ordinarily employed. Clinically, at least, this appears evident, as is proved by many syphilitics, who have undergone an intense and prolonged mercurial treatment, presenting renal lesions of greater intensity than those of syphilitics who have employed mercury with more discretion. The intensive treatment without doubt has its decided indications, but when once the accidents which it was intended to control have disappeared, great precaution is necessary, and it may be questioned whether mercury, no longer finding any *Spirochætæ* in the organism, does not at this time bring its action to bear on the cells themselves. According to the *Journal des praticiens* for October 27th, Fournier and Balzer are inclined to this opinion. However, the difficulty is to know when the specific organism of the disease has disappeared.

There are two dangers surrounding the treatment of syphilis, namely, giving too much mercury and giving too little, and a careful observation of the case alone allows one to avoid them. It is quite certain that the kidneys are exposed to great danger by the absorption of mercury, and the lesions set up from this drug are more frequent than is generally believed. Acute nephritis, due to mercurial poisoning, has been described, but less importance has been attached to interstitial transformations, and these, quite evident from a microscopical standpoint, are no less so from the experimental side. Progressive in development, these lesions have no other origin than the absorption of mercury. Clinically, the same may be said.

In the chronic types of nephritis it is difficult to elucidate the action of mercury on the evolution of the process. There certainly exists a syphilitic nephritis in both the secondary and the tertiary period, demonstrated by the presence of albumin in the urine. Now, secondary and tertiary syphilitic albuminuria are generally influenced favorably by a mercurial treatment, and, in its turn, the latter is quite capable of producing albuminuria; therefore, it is not easy to decide whether syphilis or mercury is the factor. There are several symptoms, however, which generally enable one to form an opinion. Syphilitic albuminuria may be accompanied by other manifestations of the pathological process, and if these are wanting, the action of the treatment will demonstrate its nature.

Urinary disturbances are usually bettered by mercury when the drug is given with prudence. In point of fact, there are very acute cases where the renal epithelium has undergone a very general degeneration, and there no longer exists enough sufficiently normal tissue to assure both the elimination of the syphilitic toxines and that of the mercury. Consequently the medicament should be administered with precaution, observing the effects produced, and if the patient improves, its use should be continued. On the contrary, if, during a mercurial treatment, the albuminuria increases, and especially if a large number of casts are eliminated and the albuminuria increases in intensity, treatment should be suspended. It is quite true that competent authorities have pointed out that mercurial albuminuria is slight in amount, a fact which distinguishes it from the albuminuria of syphilitic nephritides; and, still more, mercurial albuminuria is preceded by polyuria. All this is quite true, but not infrequently any precision in diagnosis from such indications is lacking. We do not refer to the condition of the gums, which is not sufficient, and the only proper way is a daily analysis of the urine in order to be sure of one's ground.

So far as the tertiary nephritides are concerned, we must be more reserved. Frequently the renal lesion, which is attributed to syphilis, is of an entirely different nature and merely indicates a sclerous involvement of the kidney, due to premature senility the result of syphilis. To give mercury under these circumstances is to expose one's self to disasters, and all the phenomena of renal insufficiency will arise, dyspnœa being the first to show itself. The use of mercury should be suspended at once, and theobromine, with a milk and vegetable diet deprived of salt, should be prescribed. Huchard has particularly insisted upon this point.

DIGITALIS PREPARATIONS.

It is an old experience that digitalis leaves are very variable in their activity. Withering, who did so much to encourage the use of this remedy, insisted that the leaves should be gathered only at the time of the plant's blossoming, not in moist weather, and should be dried carefully at not too high a temperature and kept in a dry place. Further observations have shown that wild plants alone are valuable, and that those which grow in sunny spots contain more active principle than those which grow in the shade, and Focke, in a most thorough investigation (*Therapie der Gegenwart*, 1902, p. 44), showed that there were regular variations in therapeutic efficiency in the leaves during the time of their development, leaves gathered early in the year being only one

fourth as active as those gathered late in the summer. The importance of many of these and other significant facts was not lost to the revisers of the last edition of the *United States Pharmacopœia*, and the progressive druggist should know the essential features of leaves which come up to the standard.

One feature of this study has been somewhat neglected, and in view of the wide use of dry preparations (tablets, etc.) of digitalis, a research of E. Wang's (Festkrift tillegnad Olof Hammarsten, *Upsala Läkareforenings Förhandlingen*, xi), is of immediate practical interest. He sought to determine what changes took place as the leaves themselves after gathering grew older, for which purpose extracts made from the leaves gathered from the years 1884 to 1906 were carefully tested on frogs, and the activity of the glucosides determined.

Focke's contention that, if good leaves were carefully dried and powdered and kept in dry and sealed containers, they lost very little of their efficiency, was confirmed by the author's researches, but he found that leaves which were kept in the ordinary manner rapidly deteriorated. Thus, those gathered in 1903 had lost one half of their strength as contrasted with those gathered in 1905. Inasmuch as the leaves of digitalis are highly hygroscopic, enzymes that break down the glucosides act very readily on those exposed to the air and its moisture. It is not at all improbable that many tablet triturates of digitalis, which are notoriously untrustworthy, deteriorate by reason of precisely the same enzyme reduction.

TWO DOCTORS' LITERARY DIVERSIONS.

We have always looked with gratification upon the ventures of our professional brethren in general literature. It is now our privilege to call attention to two creditable instances. Two noteworthy novels have lately been produced by members of the medical profession. One of them is the work of our well known New York surgeon, Dr. Carl Beck. It is published in Berlin, in the German language, under the title of *Der Schwedenkonrad*. The scene is laid in the valley of the Neckar, and the time is that of the thirty years' war. The hero is a Protestant lad, named Konrad, who studies medicine in Heidelberg and falls in love with a Catholic girl named Lyda. He is wonderfully devoted to his professional work and undertakes experimental investigations that provoke the hostility of the influential people of his native town, Neckersgmünd. If upon these experiments the author expatiates at too great length to suit the general reader, he may be sure of pleasing those of his professional brethren who read the book. Konrad finds it expedient to leave Neckersgmünd, and eventually Heidelberg also. He is supposed to have gone to India and to have died, but after years of absence he returns to his native town as one of the councillors of Gustavus Adolphus, whom he accompanies in his military operations. Encountering Lyda, he finds her a widow with a son who has committed an offense for which, having been captured by the Swedes, he is about to be executed when Konrad arrives with the news that the Swedish king has pardoned the lad. It is Konrad who has procured the pardon, and he has done it out of love for Lyda, who protests that she still loves him, though years before she had yielded to the influences that thwarted Konrad's professional career.

The other book is by Dr. F. E. Daniel, of Texas, and it is entitled *The Strange Case of Dr. Bruno*. It tells the story of an American physician, of Italian-German descent, whose life was wrecked by the erroneous statement, although made in good faith, that he had married his own sister, an adopted daughter of his father-in-law. After losing his sister-wife the doctor buries his sorrows and disappointments in scientific researches, especially referring to the mechanism of life, its causes, impulses, and arrests. By watching a wasp he finds a natural poison which suspends the manifestations of life for a certain time without injury to the vital actions. He is able to produce chemically this anæsthetic, and after experiments on lower animals, he is ready to try it on man. But, the experiment being dangerous, he is forced to use it on himself, and the result is fatal. While looking for a willing subject to experiment on, Dr. Bruno propounds the often repeated and discussed theory: Why not use judicially condemned murderers for physiological or biological experiments? The scientific theories and questions treated of in the book are presented in such a way as to be easily understood by any educated layman.

THE NAVAL MEDICAL CORPS.

It appears from the annual report of the surgeon general of the navy, recently issued, that great difficulty is still met with in keeping the medical officers up to the insufficient number authorized by Congress. We learn from the report that at the beginning of the calendar year there were fifty-five vacancies in the corps, and there were still forty-four on June 30th. During the fiscal year then ending twenty-eight new assistant surgeons had been appointed, and the service had lost ten officers, two by resignation, two by death, and six by retirement for disability.

There was a gain, then, of only eighteen men, not amounting to the additional number authorized by Congress to be made annually until the year 1908. Slowness of promotion seems to be one of the main considerations that deter qualified young physicians from seeking to enter the navy, and this appears to be due to the fact that for more than twenty years there has been no increase of the number of high grade officers. This should certainly be remedied, and we believe also that Congress should accede to the surgeon general's recommendation that a new grade be established, higher than that of a medical director, to consist of three officers.

AN AMERICAN SURGEON HONORED.

On Thursday evening of last week Dr. Thomas Addis Emmet, the distinguished gynæcologist of New York, whose name has long been identified with the Woman's Hospital, received the honorable distinction of Knight Commander of the Order of St. Gregory the Great from Pope Pius X. He was invested with the insignia of the order by the Archbishop of New York, who acted for the Pope at a reception at the Archiepiscopal Residence. The honor was conferred on Dr. Emmet as a token of recognition of his services to humanity in having saved so much suffering and in having invented methods which were destined to prove eminently suggestive for surgical progress. Dr. Emmet is still in vigorous health, though approaching his eightieth year. He well deserves the honor that has been conferred on him, for there are few surgeons now living who have done so much to make American surgery respected or to raise the standard of work among the members of the medical profession.

RECOGNITION OF THE SERVICES OF DR. JAMES CARROLL.

The Legislative Council of the American Medical Association met in the New Willard Hotel, Washington, on Thursday and Friday, December 13th and 14th. There was discussion of a bill for the relief of Dr. James Carroll, of the army, who is the sole survivor of the American Yellow Fever Commission which proved that the *Stegomyia fasciata* was the agent by which yellow fever was transmitted. The bill provides for placing Dr. Carroll on the retired list of the army with the rank of major. There is some objection to this method of rewarding Dr. Carroll. In the first place, on the side of the Medical Department of the army, Dr. Carroll's ability as an expert bacteriologist is valuable, and the department does not want to lose the services of such an officer. From the position of Dr. Carroll's friends the point is made that the passage of the bill could not be assured without the special recommendation of the President of the United States, and the objection of a single member of either house of Congress would prevent the bill from being enacted. Whatever may be the difficulty in ways and means of rewarding Dr. Carroll for the epoch making work in which he and his colleagues were engaged in Havana in 1898 and 1899, the medical profession of this country is undoubtedly in favor of making some substantial reward to him; and the laity would, if the facts were properly appreciated, be of the same opinion as the profession. We hope that some practical method of rewarding Dr. Carroll will be found, and that in whatever shape a bill is presented to Congress, it will be immediately passed without any of those objections which render a measure of this sort more or less distasteful to the person whom it is intended to benefit.

A URINARY TEST FOR HELMINTHIASIS.

A Russian physician, Dr. Iéfimov (*Vratchébnaya Gazeta*, 1906, No. 43; *Bulletin médical*, November 14th), affirms that he has discovered a sure sign of the presence of intestinal worms. From five to ten cubic centimetres of fresh urine (which need not be filtered unless it is turbid) should be boiled in a test tube, and from five to ten drops of the official solution of acid nitrate of mercury added. If the individual is free from worms, the urine becomes milky and deposits a white precipitate; if he has worms, the precipitate is grayish or blackish—darker if the parasite is a tapeworm, lighter if it is a round worm, though the difference is not decided enough to be diagnostic. It must be ascertained that the person has not recently taken an alkali, a sulphur compound, Dover's powder, certain preparations of iron, or any compound of lead, for any of these may enable the mercurial to throw down a similar precipitate. Dr. Iéfimov supposes that the reaction is due to a toxine elaborated by the parasite, absorbed into the blood, and finally eliminated in the urine.

SARCOMA AND COPULATION.

About twenty-five years ago the late Dr. T. Gaillard Thomas and the late Dr. Paul F. Mundé expressed their divergent views as to the communicability of malignant disease of the genital organs in copulation. Of some apparent importance in connection with the question is a communication recently made to the Berlin Medical Society by Dr. Sticker (*Semaine médicale*, November 14th). Sticker caused four dogs to copulate with a bitch that had sarcoma of the vagina. At

the end of three months two of the male dogs were found to have sarcoma of the penis, and in one of them the situation of the tumor, which was as large as a mulberry, corresponded exactly to that of the disease in the female. In the other infected dog there were seven tumors, each as large as a lentil.

News Items.

NEW YORK CITY AND STATE.

The Alumni Association of the German Hospital in the City of New York will hold its tenth annual banquet at the Café Martin, on Saturday evening, December 29, 1906.

The Brooklyn Medical Journal ceases publication with its December issue. It is also announced in that issue that the transactions of the Associated Physicians of Long Island will hereafter appear in the form of a monthly journal. Papers other than those read at the association's meetings will find a place in this publication. Dr. Paul Pilcher will have editorial charge of the new journal.

The Section in Pædiatrics of the Medical Society of the County of Kings.—The programme for a meeting of this Section, held on Wednesday evening, December 26th, consisted of a symposium on a Review of Pædiatric Literature of 1906. The English Section, by Dr. William H. Woglom; The German Section, by Dr. Archibald D. Smith; The French Section, by Dr. Louis C. Ager.

The Rochester, N. Y., Academy of Medicine.—The following programme was furnished by the *Section in Obstetrics, Gynæcology, and Pædiatrics,* at a meeting, held on Wednesday, December 19th: Microscopical Diagnosis in Gynæcology, by Dr. Michael L. Carey (by invitation); A Few Remarks on Toxæmias of Pregnancy, with cases, by Dr. William M. Brown; discussion introduced by Dr. William S. Ely.

The Medical Society of the County of Montgomery, N. Y.—The annual meeting of this society was held at Fonda, on Wednesday, December 12th. A paper on Ectopic Gestation was read by Dr. T. G. Dixon, of Troy. Officers were elected as follows: President, Dr. H. M. Hicks, of Amsterdam; vice-president, Dr. O. Z. Bouton, of Fultonville; secretary, Dr. W. R. Pierce, of Amsterdam; treasurer, Dr. E. F. Bronk, of Amsterdam; delegate to State society, Dr. Douglas Ayres, of Fort Plain; censors, Dr. Charles Stover, of Amsterdam; Dr. Frederic D. Vickers, of Canajoharie; and W. J. Peddie, of Fultonville.

The Medical Society of the County of Wayne, N. Y., held its annual meeting at Lyons, on Tuesday, December 11th. After the annual address by the retiring president, Dr. F. L. Wilson, a paper on Personal Health was read by Dr. H. L. Chase, of Palmyra, and Dr. John F. Myers, of Sodus, delivered an extemporaneous address on Tuberculosis. The election of officers resulted as follows: President, Dr. Lacey B. Darling, of Palmyra; vice-president, Dr. George D. York, of Newark; secretary, Dr. William J. Bott, of Palmyra; treasurer, Dr. Major A. Veeder, of Lyons; censors, Dr. Andrew F. Sheldon, of Lyons; Dr. Robert S. Carr, of Williamson; and Dr. Herman L. Chase, of Palmyra.

The Late Dr. William P. Brandegee.—The following resolutions on the death of Dr. William P. Brandegee were passed at an executive meeting of the Otological Section of the New York Academy of Medicine, on Thursday, December 13, 1906:

Whereas, Death has suddenly taken from us, in the prime of his life, our colleague, Dr. William P. Brandegee, a member of this Section, and one of its most faithful and enthusiastic supporters; and,

Whereas, By his unselfish devotion to duty and his professional ability he had won the respect and admiration of all who were privileged to know him; therefore be it

Resolved, That in the death of Dr. Brandegee this Section has sustained the loss of one of its most valued members, whose personal character and professional career must remain a lasting stimulus to the highest and best aims of his colleagues;

Resolved, That our profound sympathy and condolence be, and hereby are, offered to the bereaved widow and family, and that a copy of these resolutions be presented to them;

Resolved, That these resolutions be inscribed in the minutes of this section and that a copy be sent to the *Medical Record* and the NEW YORK MEDICAL JOURNAL for publication.

Signed: Dr. James F. McKernon, Dr. John D. Richards, Dr. Joseph A. Kenefick, Committee. Dr. Emil Gruening, Chairman.

Infectious Diseases in New York:

We are indebted to the Bureau of Records of the Health Department for the following statement of new cases and deaths reported for the two weeks ending December 22, 1906:

	December 22.		December 15.	
	Cases.	Deaths.	Cases.	Deaths.
Typhoid fever	62	10	51	15
Smallpox	6	..	5	..
Varicella	110	..	140	..
Measles	154	6	163	8
Scarlet fever	184	13	185	11
Whooping cough	101	11	71	9
Diphtheria	280	36	289	42
Tuberculosis pulmonalis	320	171	354	179
Cerebrospinal meningitis	6	10	3	13
Totals	1,223	257	1,261	277

Society Meetings for the Coming Week:

TUESDAY, *January 1st.*—New York Neurological Society (annual); Brooklyn German Medical Society (annual); Buffalo Academy of Medicine (Section in Surgery); Elmira, N. Y., Academy of Medicine; Ogdensburgh, N. Y., Medical Association; Syracuse, N. Y., Academy of Medicine; Medical Association of Troy and Vicinity; Hornellsville, N. Y., Medical and Surgical Association; Long Island, N. Y., Medical Society; Hudson, N. J., County Medical Society (Jersey City); Androscoggin, Me., County Medical Association (Lewiston—annual); Baltimore Academy of Medicine; Medical Society of the University of Maryland (Baltimore).

WEDNESDAY, *January 2nd.*—Society of Alumni of Bellevue Hospital; Harlem Medical Association of the City of New York; New York Genitourinary Society (private); Psychiatrical Society of New York (private); Elmira, N. Y., Academy of Medicine; Medical Microscopical Society of Brooklyn; Medical Society of the County of Richmond, N. Y. (New Brighton—annual); Penobscot, Me., County Medical Society (Bangor); New Haven, Conn., Medical Association.

THURSDAY, *January 3rd.*—New York Academy of Medicine; Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua, N. Y. (annual); Boston Medicopsychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington); Medical Society of City Hospital Alumni, St. Louis; Atlanta Society of Medicine.

FRIDAY, *January 4th.*—New York Academy of Medicine (Section in Surgery); New York Microscopical Society; Gynæcological Society, Boston; Manhattan Clinical Society (private); Practitioners' Society of New York (private); Baltimore Clinical Society.

SATURDAY, *January 5th.*—Manhattan Medical and Surgical Society, New York (private); Miller's River, Mass., Medical Society.

PHILADELPHIA AND THE MIDDLE STATES.

The W. L. Rodman Surgical Society of the Medicochirurgical College of Philadelphia gave a luncheon smoker at the University Club, on the evening of December 18th.

The Section in Ophthalmology of the College of Physicians of Philadelphia, at a meeting held on Tuesday, December 18th, listened to an address by Dr. Frederick Cheney, of Boston, on The Treatment of Glaucoma Simplex. The discussion was opened by Dr. William Campbell Posey and continued by Dr. George C. Harlan, Dr. S. D. Risley, Dr. H. F. Hansell, Dr. William Zentmayer, and Dr. George E. de Schweinitz.

The Annual Dinner of the Ex-Resident Physicians of the Philadelphia General Hospital was held at the Bellevue-Stratford Hotel, on Friday, December 14th. Dr. William M. L. Coplin, director of the department of public health and charities, was the guest of honor and one of the speakers. Dr. Edward L. Duer, the president of the so-

ciety, presided as toastmaster. About sixty ex-resident physicians of the hospital were present.

The Pennsylvania State Board of Medical Examiners.—As the result of the December examinations held by the Pennsylvania State Board of Medical Examiners, ninety-three physicians will receive the license of the board to practise within the limits of the State. Twenty-six candidates who presented themselves for the examination failed to receive the required average of 75 per cent., which would allow them to practise in Pennsylvania.

Epidemic of Typhoid Fever in Scranton.—One hundred and eighty-five cases of typhoid fever have been reported in Scranton within the last few days. In one twenty-four hours forty-nine new cases and four deaths were reported. It is believed that the water supply is responsible for the epidemic. Dr. A. B. Moulton and Mr. F. W. Wetherell, of the Department of Health of the State of Pennsylvania, are engaged in examining the public water supply of Scranton.

Training School for Nurses of the Kensington Hospital for Women.—The annual commencement of the Training School for Nurses of the Kensington Hospital for Women was held on the evening of Friday, December 14th. Dr. William E. Parke made the address. Seven young women received the diploma of the institution: Miss Mary R. Hoban, Miss Margaret V. Partridge, Miss Mary E. Simpson, Miss Helen V. Scahill, Miss May C. Bennett, Miss Sommerville W. Tilp, and Miss Louisa P. McKenzie.

An Industrial Exhibit was held in Horticultural Hall, Philadelphia, from December 7th to December 15th, inclusive, in which was shown, as nearly as possible, the conditions under which numbers of people work throughout the State of Pennsylvania. The Pennsylvania Society for the Prevention of Tuberculosis, the Consumers' League, the Pennsylvania Society to Protect Children from Cruelty, and other similar bodies, took part in the preparation and management of the exhibit. During the eight days on which the exhibition was open over 25,000 persons attended.

Philadelphia Personals.—Dr. John V. Shoemaker, professor of materia medica and therapeutics in the Medico-chirurgical College of Philadelphia, was given a banquet by the Mecklenburg County (Va.) Medical Society, at Chase City, Va., during the week of December 9th. Dr. Shoemaker delivered an address on the Mineral Water Successes and Climatology of Virginia and North Carolina.

Dr. F. E. Wiedemann, of Terre Haute, Ind., is registered at the Philadelphia Polyclinic and College for Graduates in Medicine.

Scientific Society Meetings in Philadelphia for the Week Ending January 5, 1906.—*Tuesday, January 1st,* Academy of Natural Sciences; Philadelphia Medical Examiners' Association. *Wednesday, January 2nd,* College of Physicians; Association of Clinical Assistants of Wills Hospital. *Thursday, January 3rd,* Obstetrical Society; Medical Society of ahe Southern Dispensary; Section Meeting, Franklin Institute; Northwest Branch, Philadelphia County Medical Society. *Friday January 4th,* American Philosophical Society; Kensington Branch, Philadelphia County Medical Society. *Saturday, January 5th,* Executive Committee of the Medical Club.

The Philadelphia Neurological Society held its regular monthly meeting on the evening of December 21st. Dr. G. E. Price presented a case of incomplete Brown-Sequard paralysis following a knife wound of the neck. Dr. A. A. Eshner showed a case of hysteria presenting symptoms of cerebellar disease, and a case presenting symptoms of cerebral tumor, with recovery. Dr. Wharton Sinkler exhibited a patient with spinal syphilis. Dr. David Riesman reported a case of myasthenia gravis in a boy aged eight years. Dr. Joseph Sailer reported a case of paralysis agitans developing in the unparalyzed side of a hemiplegic. Dr. W. W. Hawke exhibited two cases of cyclical passive apperception.

Free Antitoxine Distribution in Pennsylvania.—At the regular meeting of the Delaware County Medical Society, held on December 6, 1906, the secretary was instructed to communicate with Dr. Samuel G. Dixon, Commissioner of Health of Pennsylvania, and to express to him the thanks and congratulations of the Delaware County Medical Society on the good effects attained by the free distribution of diphtheria antitoxine. The secretary was further directed to state that in every case in which immunizing doses of antitoxine had been used in Chester, in a recent epidemic, the spread of diphtheria was entirely stopped in the affected families.

The Condition of the Indigent Insane of Pennsylvania.—The first open session of the special legislative commission to inquire into the condition of the insane poor of Pennsylvania was held in Philadelphia on Monday, December 10th. Statements were made by Dr. J. Nicholas Mitchell, the secretary of the State Lunacy Committee; Dr. Mary E. Wolf, physician in charge of the women's department of the Norristown Asylum; and Dr. William W. Richardson, physician in charge of the men's department of the Norristown Asylum. A second session of the committee was held on Monday, December 17th, at the State Asylum at Harrisburg. The committee intends to hold other meetings at the other insane asylums throughout the State.

Philadelphia Branch of the American Pharmaceutical Association.—The regular stated meeting of this branch will be held in the lower hall of the College of Physicians, northeast corner Thirteenth and Locust streets, on the evening of Friday, January 4, 1907, at 8 o'clock. The discussion on The Debasing Influences of Fraudulent Nostrums will be opened by: Dr. Solomon Solis-Cohen, Secrecy and Fraud as Deterring Factors to the Progress of the Science of Medicine; Dr. Henry Leffman, Known and Unknown Changes in the Composition of Well Known Nostrums; Dr. Henry Beates, Jr., Criminal Responsibility in the Sale of Abortifacients. The subject will be further discussed by Dr. John B. Roberts, Dr. Henry W. Cattell, Dr. F. E. Stewart, Professor I. V. S. Stanislaus, Professor Charles H. LaWall, and others, and will be followed by the presentation of evidence that some physicians at least are directly interested in the financial success of nostrums.

Special Hospital for Dipsomaniacs and Drug Habitues.—The committee appointed at the last annual meeting of the Medical Society of the State of Pennsylvania to draft a bill asking for an appropriation for the establishment of a State hospital for habitual drunkards, dipsomaniacs, and drug habitues, met in Philadelphia on Friday, December 7th. The committee consists of Dr. Theodore Diller, of Pittsburgh; Dr. J. W. Ellenberg, of Harrisburg; Dr. Charles K. Mills, of Philadelphia; Dr. John B. Carrell, of Hatboro; Dr. Fremont W. Frankhauser, of Reading; Dr. George E. Holtzappel, of York; Dr. George E. Nutt, of Williamsport; Dr. John G. Wilson, of Montrose; and Dr. Thomas D. Davis, of Pittsburgh. Dr. Robert H. Chase, of the Friends' Asylum, Frankford; Dr. W. W. Hawke, of the Insane Department of the Philadelphia Hospital; Dr. John B. Chapin, of the Pennsylvania Hospital for the Insane; Dr. Francis X. Dercum; Mr. Esworthy, of the Wayfarers' Lodge; Dr. Hobart A. Hare, of the Jefferson Medical College; Dr. W. M. L. Coplin, director of the department of public health and charities of Philadelphia; and Mr. Henry K. Walton, Speaker of the House of Representatives, were also present. A special committee of five was appointed to draft the necessary bill, determine its constitutionality, and appear before the State lunacy commission. The committee is composed of Dr. John B. Carrell, of Hatboro; Dr. Charles K. Mills, Dr. Alfred M. Eaton, and Dr. Henry Beates, Jr., of Philadelphia; and Mr. B. F. Marsh, of the Society for the Prevention of Cruelty to Children.

The Health of Philadelphia.—During the week ending December 15, 1906, the following cases of transmissible diseases were reported to the bureau of health:

	Cases.	Deaths.
Malarial fever	1	0
Typhoid fever	196	24
Scarlet fever	24	0
Chickenpox	76	0
Diphtheria	52	6
Measles	31	2
Whooping cough	32	3
Tuberculosis of the lungs	81	59
Pneumonia	59	44
Erysipelas	13	0
German measles	1	0
Septicæmia	2	0
Tetanus	1	0
Cancer	17	30
Mumps	3	0

The following deaths were reported from other transmissible diseases: Tuberculosis, other than tuberculosis of the lungs, 10; cerebrospinal meningitis, 1; puerperal fever, 4; diarrhœa and enteritis, under two years of age, 9. The total mortality was 500 in an estimated population of 1,469,126, corresponding to an annual death rate of 17.02 in a thousand population. The total infant mortality was

72; under one year of age, 59; from one to two years of age, 13. There were 37 still births, 18 males and 19 females. The total precipitation was 0.55 inch. The temperatures were seasonable, except on the 15th, when a maximum of 62 degrees was recorded.

BOSTON AND NEW ENGLAND.

The Farmington, New Hampshire, Medical Society was organized on December 15th and the following officers were elected: President, Dr. G. W. Ellison; vice-president, Dr. R. J. P. Goodwin; secretary, Dr. P. H. Greeley; treasurer, Dr. H. P. Wheatley. One of the first results of this organization was the issuing of a fee table, so called, to take effect January 1, 1907, establishing a minimum fee for services, advice, or medicine, and an arbitrary rate for all calls between 9 p. m. and 7 a. m.

BALTIMORE AND THE SOUTH.

The Chatham County, Georgia, Medical Society.—At the annual meeting of this society, held on Wednesday, December 12th, officers were elected as follows: President, Dr. Thomas J. Charlton; vice-president, Dr. Joseph G. Jarrell; secretary, Dr. John M. Sigman; treasurer, Dr. R. M. Thomson; censor, for three years, Dr. J. L. Farmer. Dr. Farmer replaces Dr. J. C. LeHardy on the board of three censors.

The Spartanburg County, South Carolina, Medical Association.—A meeting of this association was held at Spartanburg, on Friday, December 14th. The election of officers resulted as follows: President, Dr. W. J. Chapman, of Inman; vice-president, Dr. J. L. Jeffries, of Spartanburg; secretary, Dr. A. R. Fike, of Spartanburg; treasurer, Dr. J. H. Allen, of Spartanburg; delegates to the State association, Dr. G. R. Dean and Dr. F. L. Potts, of Spartanburg.

The Lonoke County, Arkansas, Medical Society.—At a meeting of this society, held recently at England, Ark., officers were elected as follows: President, Dr. W. S. Turner; vice-president, Dr. S. S. Beaty; secretary and treasurer, Dr. O. D. Ward. Dr. Southall, of Lonoke, was elected delegate to the Arkansas Medical Society, which meets in Little Rock in May. Dr. Reed, of McGregor, was elected a member of the board of censors.

The Richmond (Va.) Academy of Medicine and Surgery.—At a meeting of this academy, held on Tuesday evening, December 11th, officers were elected as follows: President, Dr. Ennion G. Williams; first vice-president, Dr. J. Shelton Horsley; second vice-president, Dr. McGuire Newton; third vice-president, Dr. R. Bowman; treasurer, Dr. L. K. Shepherd; executive committee, Dr. Stuart McGuire, Dr. W. S. Gordon, Dr. D. J. Coleman, and Dr. Ramon Garcin. Dr. Garcin is the only new man on the executive committee.

The Seaboard Medical Association of Virginia and North Carolina.—At a meeting of this association, held at Wilson, N. C., on December 13th officers were elected as follows: President, Dr. R. L. Payne, of Norfolk; vice-presidents, Dr. C. J. Riddick, of Suffolk; Dr. J. W. Hunter, of Norfolk; Dr. E. T. Dickinson, of Wilson; secretary, Dr. J. R. Bagby, of Newport News, and treasurer, Dr. Isaac Brown, of Norfolk. The association will meet at Norfolk in November, 1907.

The Newton County, Mississippi, Medical Association held a meeting at Newton on Thursday, December 13th. The name of the association was changed from *Newton County* to the *Newton-Neshoba Medical Association*, a number of the Neshoba county physicians being members. Officers for the ensuing year were elected as follows: President, Dr. J. B. Bailey, Conehatta; vice-president, Newton county, Dr. S. B. Henton; vice-president, Neshoba county, Dr. D. J. Rush; secretary and treasurer, Dr. W. J. Chapman, Newton; censors, Dr. G. H. McNeill, Newton, and Dr. S. A. Majure, Dixon. Dr. W. G. Allen, of Newton, was elected as delegate to the State association, with Dr. C. V. Gilmore, of Hickory, as alternate. The next meeting will be held at Philadelphia, Miss., on the second Tuesday in March, 1907.

The Mortality of Baltimore.—The report of the Health Department for the week ending December 15th showed a total of 187 deaths, as compared with 195 the corresponding week of last year; 206 in 1904; and 199 in 1903. The annual death rate in 1,000 of population was: Whole, 16.31; white, 13.06; colored, 33.68. The principal causes of death were: Whooping cough, 1; diphtheria, 1; consumption, 43; cancer, 13; apoplexy, 8; organic heart diseases, 15; bronchitis, 10; pneumonia, 20; Bright's disease, 12; congenital debility, 4; lack of care, 2; old age, 5; accidents, etc., 18. The following number of cases of infectious diseases was reported, as compared with the corresponding week of last year:

	1905.	1906.
Smallpox	1	0
Diphtheria	26	22
Pseudomembranous croup	2	0
Scarlet fever	13	7
Typhoid fever	9	20
Measles	7	15
Mumps	0	7
Whooping cough	10	0
Chickenpox	3	6
Consumption	9	14

CHICAGO AND THE WEST.

The Northern Tri State Medical Association will hold its thirty-fourth semiannual meeting at Elkhart, Ind., on Tuesday, January 8, 1907. The association embraces the States of Indiana, Michigan, and Ohio, and the officers are: President, Dr. Charles D. Aaron, Detroit; vice-president, Dr. Theodore F. Wood, Angola, Ind.; secretary, Dr. William F. Schumaker, Butler, Ind., and treasurer, Dr. J. A. Weitz, Montpelier, Ohio.

The Marion County, Ohio, Medical Society.—At the December meeting of this society, held at Marion, officers were elected as follows: President, Dr. Henry L. Uhler, of Marion; vice-president, Dr. A. Melville Crane, of Marion; secretary, Dr. J. W. Adair, of Marion; treasurer, Dr. J. M. Hoskins, of Marion; member of board of censors, for three years, Dr. S. W. Mattox, of Marion; delegate to the Ohio State Medical Association, 1907, Dr. Elmer O. Richardson, of Marion; alternate delegate, Dr. R. C. M. Lewis, of Marion.

Statement of Mortality of Chicago for the Week Ending December 15, 1906, compared with the preceding week and with the corresponding week of 1905. Death rates computed on United States Census Bureau's figures of mid-year populations—2,049,185 for 1906, and 1,990,715 for 1905:

	Dec. 15, 1906.	Dec. 8 1906.	Dec. 16, 1905.
Total deaths, all causes	598	584	489
Annual death rate in 1,000	15.22	14.86	12.80
By sexes—			
Males	330	324	288
Females	268	260	201
By ages—			
Under 1 year of age	120	105	81
Between 1 and 5 years of age	60	52	32
Between 5 and 20 years of age	57	47	29
Between 20 and 60 years of age	230	252	236
Over 60 years of age	131	128	111
Important causes of death—			
Apoplexy	8	6	14
Bright's disease	55	49	35
Bronchitis	26	22	18
Consumption	55	64	60
Cancer	25	26	32
Convulsions	17	6	2
Diphtheria	25	19	11
Heart diseases	49	43	40
Influenza	2	4	2
Intestinal diseases, acute	23	28	15
Measles	3	4	5
Nervous diseases	26	32	13
Pneumonia	88	87	81
Scarlet fever	12	12	1
Suicide	7	10	9
Typhoid fever	7	6	4
Violence (other than suicide)	41	25	24
Whooping cough	5	2	0
All other causes	124	139	123

GENERAL.

The Influence of Station Upon the Health of Troops.—Discussing the influence of station upon health conditions among troops, the Surgeon General of the Army states that all rates last year except for deaths were highest in the department of the lakes; the discharge for disability rate was particularly high, more than twice as great as that of the United States total, says the *Army and Navy Journal*, for December 8, 1906, and nearly six times as great as for the department of Texas. The high rates in the department of the lakes may be partly accounted for by the fact that it includes the large recruiting depot at Columbus barracks, where many recruits are held on sick report for long periods to determine their fitness for service, and many are discharged. The lowest admission rates are found in the department of the Columbia, the lowest discharge rate in the department of Texas, the lowest death rate in the department of the gulf, and the lowest non-effective rate in the department of Dakota. Excluding injuries, venereal diseases, and alcoholism, the highest death rate occurred in the department of Texas.

Pith of Current Literature.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

December 22, 1906.

1. Treatment of Tuberculosis of the Kidney and Bladder by Nephrectomy, By LEONARD FREEMAN.
2. Keratosis Obturans, By G. STERLING RYERSON.
3. Acute and Chronic Suppuration of the Ear and Nose the Direct Cause of Facial Erysipelas, By CULLEN F. WELTY.
4. Influence of a Tuberculosis Sanatorium on the Value of Surrounding Property, By WILLIAM H. BALDWIN.
5. The Pharmacology of Digitalis, By ROBERT A. HATCHER.
6. Pharmacology of Veratrum, By HORATIO C. WOOD.
7. Fibroid Tumors of the Uterus (*Concluded*), By CHARLES P. NOBLE.
8. The Prostitution Problem in Its Relation to Law and Medicine, By LUDWIG WEISS.
9. Ætiology of the Social Evil, By CHARLES CHASSAIGNAC.
10. A Practical Lesson in Reglementation, By W. E. HARWOOD.
11. Retroperitoneal Cysts Developing from the Wolffian Body—Parapancreatic Cysts, By FRANCIS D. DONOGHUE.
12. Tetanus Neonatorum. A Second Report of a Statistical Study, By JAMES M. ANDERS and ARTHUR C. MORGAN.

1. Treatment of Tuberculosis of the Kidney and Bladder by Nephrectomy.—Freeman says that tuberculosis of the urinary tract very often begins in the kidney, attacking the bladder secondarily, being usually at first unilateral. As medical or climatic treatment is unsatisfactory in most cases, the ideal treatment would be early nephrectomy, provided there is one sound kidney, as tuberculosis elsewhere, unless far advanced, is not a contraindication to operation. Tuberculosis of the bladder derived from one kidney is positively benefited by nephrectomy and can seldom be cured without it. The demonstration of tubercle bacilli in the urine often fails. The removal of the ureter is not ordinarily indicated. If sinuses result, they nearly always heal in time.

3. Acute and Chronic Suppuration of the Ear and Nose the Direct Cause of Facial Erysipelas.—Welty is of the opinion that facial erysipelas is dependent on pathological conditions of the nose. He asks six theoretical questions which he answers: 1. Why should we have erysipelas especially confined to the face? *a,* Because it is nearest the seat of infection; *b,* because the secretion of pus produces an abrasion of the mucous membrane or skin and then an inoculation follows; *c,* the inoculation is also made by the handkerchief or the finger. 2. Why should we have more than one attack of facial erysipelas? *a,* Because the source of infection is practically never eliminated without operation; *b,* the reason erysipelas follows operations is explained by the fact that you open a field for direct infection. 3. Why do we usually find erysipelas associated with suppurative processes of the ear and nose? Because the source of infection is nearly always present. 4. Why should this not be accepted as a fact when streptococci can be demonstrated in the secretion, or is it absolutely necessary to demonstrate the presence or absence of the same? When streptococci can be demonstrated in the secretion of the air or the nose in mixed or pure infections, he thinks it should be considered an established fact that the erysipelas is dependent on the same. 5. Why is it that 82 per cent. of facial erysipelas starts from the angle of the nose? *a,* Because the secretion produces an excoriation which leaves a direct course for inoculation; *b,* through repeated cleansing of the nose with the handkerchief or otherwise an abrasion is produced which leaves a point of inoculation; *c,* because this streptococcus is the most virulent of germ infections and will propagate where others would have perished. 6. Why is it that every case of streptococcus infection of the ear and nose is not followed by erysipelas? Here immunity plays an important rôle.

11. Retroperitoneal Cysts.—Donoghue gives the following diagnostic points for retroperitoneal cysts: A cyst developing from Wolffian body remains develops back of the retroperitonæum and may push the stomach in any direction or may develop behind and push forward the aorta and vena cava. True cysts of the pancreas would not be likely to do this on account of its relations. The greater the amount of substance secreted and the greater the amount and the number of products from the displaced ectodermal or mesodermal cells the larger the cyst. Lateral mobility has been considered diagnostic of mesenteric cysts, but mobility is also characteristic of most tumors of the upper abdomen, which do not develop directly from a glandular organ. A ferment which converted starch into sugar has been found absent from undoubted pancreatic cysts, and has been found in abdominal cysts not connected with the pancreas. Slowly developing obstruction to the pancreatic duct or from interstitial changes may cause cystic degeneration of that organ. Pancreatic cysts are finely fixed and do not attain large size. It may be considered that there have been, under the head of pancreatic cysts, three forms described: 1. The small, true, firmly fixed cyst of the pancreas, which is accompanied by glandular destruction, and rarely presents as a tumor in the living. 2. The thin walled, friable pseudocysts which are full of pigmented material. Efforts to remove these have been generally unsuccessful, so they have been treated by drainage. They present below stomach, with areas of tympany above and below. 3. A thin, fibrous walled cyst of large size, containing, as a rule, cholesterin fluid; freely movable, and can be enucleated; resembles closely a parovarian cyst and develops in close relationship to the pancreas. The first are true pancreatic cysts; the second, pseudocysts or omental bursitis; the third are Wolffian body cysts, and stand in the same relation to the pancreas as do parovarian cysts to the ovary; or if another descriptive name is needed, these might be called parapancreatic cysts. Aspiration should never be performed on account of danger of infection, either from puncture of some hollow viscus, or from disseminating cyst contents. The clinical picture of a cyst developing behind the peritonæum, from embryological remains, depends on the relations it finally assumes. Cysts from the Wolffian body are not uncommon in women. Movable cysts presenting in the epigastrium have usually been called pancreatic, although true cysts of the pancreas are rare (especially in women) and are rarely movable. Developing in the region of the kidney, they may be mistaken for hydronephrosis or may extend so low as to be considered ovarian. Retroperitoneal cysts are usually benign, unaccompanied by symptoms other than those of a mechanical nature.

12. Tetanus Neonatorum.—Anders and Morgan have studied tetanus neonatorum. They have found from statistics that the mortality of this disease for the census years from 1870 to 1890 are 1,307 deaths in the United States. Under the heading causation the authors say that former theories as to the cause of tetanus neonatorum have been entirely disproved, since the demonstration of the tetanus bacillus of Nicolaier, in 1884. Many subsequent experiments, which prove this disease to be specific in origin, have also been made. The months of March, July, September, January, and June, give the largest number of cases, the five months showing a total of 60 per cent. That the appellation "nine days' fits" is not a misnomer is proved by the fact that the greatest number of cases to occur on or before the ninth day, corresponding to the time of the dropping off of the cord, thus leaving an open wound to favor infection; the susceptibility then rapidly de-

creases. Tetanus neonatorum has been terribly fatal in various parts of the world. For years it was endemic to the island of Heimac, Iceland, to such an extent as almost to depopulate that section. It was very fatal in the island of St. Kilda, off the coast of Scotland, up to within a few years ago, when by no other measures than simple aseptic dressing of the umbilical cord, the cases were reduced to almost *nil*. G. Miron states that in Bucharest, 233 children die of tetanus neonatorum every year, and in the entire district of Roumania 14,807 succumb to this disease annually. An emulsion prepared from the umbilical cords and injected into mice after the culture method of Wright showed the presence of tetanus bacilli and spores. The authors conclude their article in saying: "In the light of our accurate, scientific knowledge of this disease, the education of persons, directly or indirectly concerned with the care of confinement cases, should be insisted on, especially as to the necessity for rigid, aseptic, hygienic care of the umbilical stump, and its treatment along the same rigid lines as any other surgical wound. To this end, a law in every State requiring registration of midwives should be enacted. Our medical colleges should teach this phase of the matter with greater earnestness than is now being done. The subject of the tetanus bacillus, which at present is dismissed in a line or two, should be more fully presented. State boards of health should issue circulars of information for the guidance and direction of midwives and others who attend these cases. Charity societies and other philanthropic institutions should also take up the question and thus cause a widespread dissemination of the simple measures necessary for the prevention of this dread disease.

MEDICAL RECORD.

December 22, 1906.

1. Some Notes on the Diagnosis and the Result of Surgical Treatment of Cerebellar Tumors, By B. SACHS.
2. Chronic Urethritis and an Improved Method of Applying Medication to the Urethra, By JAMES A. GARDNER.
3. The Gelatin Method of Preserving Specimens, By W. H. WATTERS.
4. The Treatment of La Grippe, By CHARLES E. NAMMACK.
5. The Value of the Differential Leucocyte Count in Gynæcology and Abdominal Surgery, By FREDERIC E. SONDERN.
6. The Psychiatric Clinic at Munich, with Notes on Some Clinical Psychological Methods, By G. H. KIRBY.
7. Pruritus Ani, By T. CHITTENDEN HILL.

1. Some Notes on the Diagnosis and the Result of Surgical Treatment of Cerebellar Tumors.—Sachs, from his own observations and from the literature, comes to the conclusion that, while he firmly believes that the cure of cerebellar tumors is difficult to attain, except in a very small proportion of the cases, he is of the opinion that when the diagnosis of cerebellar tumor is made, and when there is a fair degree of certainty as to the special part of the cerebellum which is involved, a large trephine opening should be made over the suspected area; and, even if at the first or at the second stage of the operation the neoplasm is not found, much good will be done by the relief of pressure, the headaches will disappear, or will at least be diminished in severity, and blindness, the greatest of all scourges in these cases, may thereby be prevented or considerably deferred. From his twenty-one patients not a single one has been cured. Several have, however, been much relieved by operative interference, and, above all, impending blindness has in several instances been avoided by prompt surgical measures. In view of the alleviation which has been obtained, he does not frown upon all surgical endeavors, but he does not, on the other hand, concede that the removal of tumors of the cerebellum is a task upon which one can enter with a light heart and with any great hope of ultimate success. The results recorded by Horsley, Frazier, and others, will tempt every one of us again and again to advise operation in order to procure equally good results, but the author insists once more that if we are to judge of the matter fairly we must have complete statistics of successes and failures; otherwise we are bound to overrate the one and to underrate the others.

2. Chronic Urethritis and an Improved Method of Applying Medication to the Urethra.—Gardner describes his method of applying medication to the urethra, by which he forestalls a stricture following chronic urethritis. The medication consists of ichthyol, one drachm; resorcin, forty grains; balsam Peru, three drachms; castor oil, q. s. to four ounces—or lymol, one drachm; balsam copaiba, one drachm; castor oil, one ounce; olive oil, q. s. to four ounces. He selects a tube as he would select a sound, and a cord which is inserted in the handle end of the tube and forced through the tube by the obturator. As much of the cord is now pulled out at the distal end as is intended for use. The cord and tube are placed in the medication until the cord is thoroughly saturated. The cord at the handle end is now pulled out until but an inch or so of the saturated part remains in the tube. The cord is then cut at the junction of the medicated with the nonmedicated portion. In pulling the cord through the tube it has acted somewhat as a piston and has drawn some of the medication with it. The tube is inserted and passed down the urethra beyond the area to be medicated. The obturator is then inserted into the cord near the distal end and pushed down the full length of the tube, carrying the cord with it, and at the same time forcing ahead into the urethra such medication with it. The tube and obturator are now withdrawn, leaving the cord in position.

3. The Gelatin Method of Preserving Specimens.—Watters uses the following method: All free blood adherent to the surfaces, due to the surgical or post mortem operation, should be gently washed away, and the tissue placed in a relatively large amount of the following solution: Potassium nitrate, 15 grammes; potassium acetate, 30 grammes; formalin, 200 cubic centimetres; water, 1,000 cubic centimetres. The length of time essential for complete fixation of color varies with the size and variety of specimen. About twelve hours will usually prove sufficient for the majority. Brains, blood clots, and very large specimens require from one to two days. At the end of this time the object, which should now be comparatively firm, is removed from the liquid, immersed for a few minutes in water, and then placed in alcohol. When the colors return, whatever excess of alcohol is present is washed away by water, or the specimen may be placed without washing into potassium acetate, 100 grammes; glycerin, 200 cubic centimetres; water, 1,000 cubic centimetres. Here it may remain for days or months as a permanent mount (Kaiserling), or it may be continued to the final step. The sooner this last step is taken, however, the better will be the preservation, subjecting the specimen for less than one hour to the same solution, to which is added 200 grammes of gelatin, and heated immediately. When a temperature of about 55° C. has been reached, and the gelatin is nearly all melted, the white of one egg is added for every litre present, and the entire solution is rendered strongly acid by acetic acid. The coagulated white of egg helps to clarify, as does also the acetic acid. In addition, the acid probably renders the medium a better color conserver. As soon as boiling becomes active, the hot preparation is poured into a filter with two thicknesses of paper, and the clear solution is collected in the stock jar. After solidification, a crystal of thymol placed on the top of the stock solution will effectually prevent the appearance of fungi. The thymol is now removed from the stock solution of gelatin,

and the bottle is placed in a steam sterilizer for liquefaction. When completely liquid, and at a temperature of about 45° or 50° C., a thin layer is poured into a Petri dish, and to it is added about one drop of formalin to each 20 c.c. of the solution. Into this is placed the specimen, face downwards, where it is allowed to stay till the gelatin has become solid. More of the formalin-gelatin solution is now added, sufficient to almost, but not quite, fill the dish. This should be allowed to solidify thoroughly for ten or twelve hours in the ordinary room temperature. More of the same preparation is finally added, till a slight convexity is formed above the edge. A wet plate glass is now quickly placed on the liquid gelatin in such a way as to force out all the air bubbles and rest evenly upon the upper edge of the dish. A cement of Canada balsam, with twenty per cent. clove oil, is applied around the entire circumference. The next day the glass is carefully washed, another coat of balsam is applied, and the specimen is permanently mounted.

BRITISH MEDICAL JOURNAL.

December 8, 1906.

1. Lectures on the Borderland of Epilepsy; Migraine, By Sir W. R. Gowers.
2. Remarks on the Therapeutical Value of Complete Vocal Rest During the Sanatorium Treatment of Laryngeal Tuberculosis, By Sir F. Semon.
3. Present Views on Diseases of the Joints, By H. Marsh.
4. On Sprains and their Consequences, Mainly in Relation to Treatment, By Sir W. Bennett.
5. Errors of Vision as a Factor in Motor Car Accidents, By C. Clements.

1. **Migraine and Epilepsy.**—Gowers states that migraine comes into the borderland of epilepsy in many ways. The two affections may alternate in the same patient, or sometimes epileptic attacks and headaches continue together, but in such cases the latter is seldom definitely hemicranial, unless the epilepsy is only the minor form. The most frequent prodroma of migraine is visual, and is so characteristic as not to lead to confusion with epilepsy. The most frequent form is that of a small star near the fixing point; it enlarges on one side, its rays expanding into zigzags, often colored —the "fortification spectrum"—within which vision is dimmed. It lasts a quarter of an hour or more, and as it ceases the headache comes on, usually on the opposite side of the head. Another premonitory symptom is a sensation of tingling ("pins and needles") which is felt in the hand and slowly ascends the arm as a zone, leaving behind it numbness and diminished sensibility. This also lasts a quarter of an hour and is followed by headache on the opposite side of the head. It resembles the aura of epileptiform fits, which are caused by organic disease of the cortex, tumor, or an old stationary lesion in "organic epilepsy." But the aura of epilepsy occupies only a few seconds. When the right arm is affected there may be some degree of transient aphasia in both affections. The sensory disturbance in migraine may affect both hands, but never in Jacksonian epilepsy. The aura of migraine never begins in the foot. It must be remembered that the sensory prodroma of migraine may occur alone without succeeding headache to emphasize its nature, and be erroneously taken for minor epilepsy. Vertigo may be met with as a premonitory symptom of headache, and give rise to confusion. Lateral hemionopia, which often accompanies migraine, is unknown as the aura of an epileptic attack. The pain of migraine is accompanied by over sensitiveness to sensory impressions; it is increased by light and sounds, so that darkness and silence are needful for the endurance of the suffering. A very rare and merciful effect of the pain is sleep; it makes the diagnosis between migraine and epilepsy very difficult. The intolerance of sensory impressions caused by the pain may pass into a state of stupor, during which the pain is apparently felt, but is not afterwards remembered. The condition is often attended by quiet delirium. In conclusion, the author holds that while there is some relation between migraine and epilepsy, yet the evidence is very slight. All we can say is that in each malady a state of nervous tension seems slowly to develop, which is at last relieved by a violent functional disturbance. The differences between the two conditions are definite and distinctive. The brief warning of epilepsy is not met with before migraine; severe pain of long duration does not follow epilepsy, nor is it one sided. Vomiting in epilepsy occurs soon after the fit, and not after the headache has lasted some hours, as in migraine. Bromide, so often efficient in epilepsy, has much less value in migraine, in which nitroglycerin is of service, especially if combined with strychnia.

2. **Vocal Rest in Laryngeal Tuberculosis.**—Semon considers complete vocal rest particularly indicated in cases of inflammatory irritation of the larynx in pulmonary tuberculosis, especially in obstinate catarrh of the larynx, congestion of the vocal cords, relaxation of the ventricular bands, and (in more advanced cases) in circumscribed ulceration of the vocal cords, ulceration in the interarytenoid fold, general infiltration, and in impeded movements of the cricoarytenoid articulation. It cannot be denied that the method is very irksome for the patient during his stay at the sanatorium; much depends upon the temperament of the patients. In conclusion the author reports in detail seven cases in which complete vocal rest was carried out with most satisfactory results to the patients.

4. **Sprains.**—Bennett discusses sprains and their consequences. He divides them into three classes: 1. Simple sprains, involving the soft parts only. 2. Sprains complicated with fracture, the symptoms of which are so slight as to make it undiagnosable under ordinary circumstances, the symptoms of sprain being predominant. 3. Sprains with gross nerve injury. Speaking generally, a sprain may be considered as a subcutaneous laceration. The first essential in all cases is to determine whether fracture coexists; this can readily be done by means of the x rays if they are available. The view that absence of crepitus means absence of fracture is a sadly mistaken one, and often leads to disastrous consequences. The next desideratum is to eliminate the existence of gross nerve lesion. Should the pain be referred to a distant part, definite nerve lesion is indicated. In every case the distal parts should be examined for numbness. In sprains without swelling (so called "strains") the pain may be intense. Rest of the part, combined with firm compression, is usually effectual; such compression is best applied by means of strapping. In sprains with immediate swelling (from blood) the indications are: (a) Arrest of bleeding; (b) promotion of absorption of extravasated material; and (c) prevention of adhesions and muscle waste. As regards bleeding, rest is the only form of local treatment that has any effect. Heat and cold, while promoting the comfort of the patient, do not check swelling. Absorption is best promoted by pressure, such as that provided by a firm porous bandage, followed by massage, which latter in conjunction with passive movements, also prevents adhesions and muscle waste. In cases with fracture, voluntary movements must be postponed. In cases with nerve injury, and pain along the nerve, rest and rest only will bring about complete and permanent cure. When numbness is the result of the nerve injury, massage and galvanic electricity are indicated, and exercise encouraged. The later consequences of sprains are: 1. Preventable; (a) persistent pain; (b) stiff joints; (c) wasting of muscles (apart from gross nerve lesion); (d) general relaxation of joints; and (e) deformity. 2. Unavoidable in certain cases; (a) osteoarthritis; (b) local paresis; and (c) myositis ossificans.

LANCET.

December 8, 1906.

1. A Case of Lingual Goitre, By G. B. MAKINS.
2. Further Observations on Endemic Goitre, By R. McCARRISON.
3. Water Gas, Carburetted Water Gas, and Carbon Monoxide Poisoning, By J. GLAISTER.
4. On a New Synthesis of Tyrosine, By P. W. LATHAM.
5. A Case of Epileptic Idiocy Associated with Tuberose Sclerosis of the Brain, By M. B. DOBSON.
6. A Case in Which Acute Appendicitis and a Twisted Ovarian Pedicle Existed at the Same Time, By J. CAHILL and Sir W. H. BENNETT.
7. The Influence of an Excessive Meat Diet on the Osseous System, By D. C. WATSON.

1. Lingual Goitre.—Makins reports a case of lingual goître occurring in a woman, aged thirty-one years. There was a hemispherical swelling of about the size of a walnut at the base of the tongue and projecting upwards into the faucial aperture. It gave rise to acute dyspnœa and dysphagia. It was removed by operation and the patient made an uncomplicated recovery. The condition is comparatively rare; it may be met with at any age, but is commonly discovered at about the age of puberty. In an overwhelming majority of cases the patients are females. When the tumors come under the notice of the surgeon, they have usually assumed the characteristics of one of the forms of goître commonly found in the neck. Degenerative changes in the lingual thyreoid probably account for the sudden occurrence of symptoms after a period of latency. Surface ulceration has been noted in some cases. Accessory lingual thyreoid glands at the base of the tongue are probably of frequent occurrence, but usually remain unnoticed. When they enlarge the tumor is usually central. Occasionally the gland in the tongue is the only representative of the normal thyreoid gland. There is a latent period in most cases, the patients being aware of a swelling for years before any trouble arises. The first sign is usually a sensation of faucial obstruction; there is sometimes alteration in the character of the voice, and free respiration is interfered with. Ulceration of the surface may lead to considerable hæmorrhage. The swelling itself is situated immediately behind and in intimate relation with the foramen cæcum; its surface is smooth, pale, and provided with numerous ramifying bloodvessels. It is firm in consistence, and nonfluctuating. Dermoids are usually yellow, nonvascular, and enlarge more rapidly; enlarged lingual tonsils are white, show the yellow openings of crypts, and are accompanied by the presence of adenoids in the nasopharynx; papillomata are irregular and pedunculated; angeiomata are softer and dark blue or black in color; and, finally, malignant growths are more rapid in development, and are accompanied by obvious infiltration of the surrounding area. While the removal of these lingual goitres is easy and safe, yet the operation may lead to the development of postoperative myxœdema. If the normal thyreoid gland is palpably present, no such trouble will result. If dysphagia and dyspnœa are prominent, the growth must be removed. Removal through the mouth is the best method; preliminary tracheotomy is rarely necessary; and the suprahyoid incision, which is sometimes used, is neither convenient nor easy, and it leaves an unnecessary and disfiguring scar.

2. Endemic Goitre.—McCarrison regards goître as a general disease of an infectious nature in which the seat of infection is most probably the intestinal tract and of which the enlargement of the thyreoid is the dominant symptom. These conclusions are based on the following facts: Goître is caused by an organism invading the body of man. All the evidence so far accumulated points to the intestine as the seat of infection. In nature it lives in the soil of infected localities, and is very limited in its distribution. It is conveyed to man in the drinking water, by contact with soil, or by other means yet undetermined. It requires a calcareous soil to enable it to flourish and produce goître. It can be conveyed by man to places where the disease has not hitherto prevailed and, if the conditions are favorable there, it can produce the disease. The virus is, therefore, given off by persons suffering from the disease, in some way as yet undetermined, but not unlikely by means of the fæces. The fact that it requires peculiar conditions of soil, etc., suggests a stage of development outside the body of man. There is reason to believe that it is destroyed by admixture with pure water. The organism flourishes best where there is a certain degree of moisture, and requires a certain temperature, in all probability, to favor its development. Where it gives rise to epidemic the most susceptible individuals suffer most and first, namely, the children. There is reason to believe that where the disease has prevailed for years a natural immunity is developed. Those who come into close contact with the soil in their daily occupations suffer most. Newcomers to a district acquire the disease very rapidly, from three weeks to one month being the minimum incubation period of this disease, twenty per cent. of newcomers suffer. Goître shows a marked seasonal prevalence. It disappears when the patient leaves the infected area and cannot arise in the new area to which the patient goes, unless the previously mentioned conditions for the growth of the organism are present, calcareous soil, moisture, virus of the disease, and susceptible individuals. The duration of life of the organism in the body of man is not great, as shown by the diminution in size of the gland when the patient leaves the infected area. An organically impure water may favor the spread of the disease. All races suffer, women more than men. Certain conditions, such as emotional disturbances, attacks of fever, etc., act as predisposing or favoring causes. Boiling or filtering the water alone does not prevent or cure the disease as long as people live on the infected site. Large communities living on the infected site often escape, however; groups of houses also escape the disease. Certain blood changes occur which suggest from analogy with other diseases, a parasitic or bacterial invasion of the intestine. Goître is rapidly cured by the administration of intestinal antiseptics. In conclusion the author describes an organism found in the fæces of goîtrous patients, which may possibly cause the disease.

7. Excessive Meat Diet.—Watson states that the bones of animals fed on an excessive meat diet present an appearance of delayed and imperfect ossification with increased vascularity, and an increase in the number of red blood corpuscles. Associated with this there is in a number of cases the presence in the bony ribs of nodules of cartilage developed from the periosteum, with direct transformation of these cartilage cells into bone.

LA PRESSE MEDICALE.

December 1, 1906.

1. Opening Lecture at the New Pavilion For Infantile Surgery, By E. KIRMISSON.
2. Perborate of Soda in Surgery, By H. CHAPUT.

2. Perborate of Soda in Surgery.—Chaput says that the perborate of soda does not present any marked advantages in the treatment of fresh wounds which are not threatened with gangrene or infection, or of chronic, noninfected ulcers, but that it is of considerable service in badly infected, fœtid, or gangrenous wounds, in cases of traumatic gangrene, in wounds which have been contaminated with earth and exposed to tetanus, and in cases of fœtid suppuration. It can replace with advantage oxygenated water for antiseptic lavages and injections. Gauze impregnated with it is useful for vaginal dressings.

December 5, 1906.

1. The Liver and Iron, By J. Castaigne.
2. The Protective Rôle of the Lymphatic Glands, By Marcel Labbe.
3. General Anæsthesia per Rectum, By E. Vidal.
4. The Retrograde Infection of the Pharynx and Lungs by Intestinal Microbes, By R. Romme.

1. The Liver and Iron.—Castaigne deals first with the pathological augmentation of the hepatic iron which is presented in two different conditions, one a pigmentary siderosis due to an increased destruction of the red blood globules, the other a pigmentary cirrhosis. He then deals with the pathological diminution of the hepatic iron and the symptoms produced experimentally.

2. The Protective Role of the Lymphatic Glands.—Labbe is opposed to the view recently advocated by Noetzel, and asserts that experimental, clinical, and histological investigation, all go to show that the lymphatic glands play no part in the defense of the system against local and general infections.

3. General Anæsthesia Per Rectum.—Vidal has devised an ingenious apparatus for the rectal administration of ether to induce general anæsthesia. He considers this method indicated in all operations in which asepsis is endangered by the proximity of the anæsthetist when the anæsthesia is induced in the usual way, and when there is disease of the respiratory organs. It is contraindicated by the presence of intestinal disease, such as tumors, chronic inflammation, or hæmorrhoids.

LA SEMAINE MEDICALE

November 28, 1906.

Review of the Question of Aphasia. Aphasia from 1861 to 1866. Critical Historical Essay in Regard to the Genesis of the Doctrine of Broca. By Pierre Marie.

Aphasia.—Marie says that the theory that the third left frontal convolution is the centre of articulate speech is based upon the findings at two autopsies made by Broca, and he seeks to show that the interpretation given by this author to his findings is inexact.

December 5, 1906.

The Actual Status of Antituberculous Vaccination, By Professor C. Moussu.

Antituberculous Vaccination.—Moussu discusses antituberculous vaccination of cattle by Behring's method, and refers to the studies carried on in various countries. He does not seem to be perfectly convinced of the efficacy of this method, but we may conclude with him to let time do its work, wait patiently and hope.

MUENCHENER MEDIZINISCHE WOCHENSCHRIFT

November 27, 1906.

1. Concerning the Statistics of Gonorrhœa in Men and of Its Consequences in Their Wives, By Erb.
2. Nervous Diseases of the Heart and the Idea of Cardiac Weakness, By von Krehl.
3. Experiments Regarding the Action of Bier's Stasis on Infectious Processes, By von Baumgarten.
4. Experimental Tabes in Dogs (Trypanosoma Tabes), By Spielmeyer.
5. Conservative Myoma Operations, By Fehling.
6. The Extent Upward of Spinal Analgesia, By Dönitz.
7. The Tuberculin Treatment of Pulmonary Tuberculosis, By Hammer.
8. The Consequences of the Opium-Bromide Treatment of Epilepsy, By Kellner.
9. Backward Passage of the Urine to the Pelvis of the Kidney, By Geigel.
10. Myositis Ossificans Progressiva Cured with Thiosinamine, By Boseck.
11. Suggestions Regarding Aid to the Injured Which Will Not Retard the Healing Process, By Hackländer.
12. Terms Used in the Modern Theory of Immunity, By Professor Dieudonné.

1. Statistics of Gonorrhœa in Men and of Its Consequences in Their Wives.—Erb found, from investigation of 2,000 of his private male patients, that nearly one half of them (48.5 per cent.) had had one or more attacks of gonorrhœa. In 84.7 per cent. of these patients the disease had been acquired between the ages of sixteen and twenty-five, in 11.4 per cent. between twenty-six and thirty, in 3.2 per cent. between thirty-one and forty, and in 0.5 per cent. when over that age. Investigation of 400 wives of men who had had gonorrhœa some time before marriage showed that 375 (93.75 per cent.) were either healthy, or were suffering from diseases not due to gonorrhœa, seventeen (4.25 per cent.) were suffering from diseases which was either certainly or most probably of gonorrhœal nature, while eight (2 per cent.) were suffering from diseases, the gonorrhœal nature of which was uncertain or improbable. In regard to child bearing, ninety-four of the 375 unaffected wives had borne four or more children, sixty-nine had borne three, and eighty-nine had borne two. It should be borne in mind that many had been married but a few years, the number of children was normal, and would naturally be expected to increase in time. Of the diseased wives eleven had borne no children, ten had one, two had two, and one three.

3. Action of Bier's Stasis.—Von Baumgarten's experiments were made on rabbits. Venous stasis was induced by a rubber tube bound about the groin, and then tubercle bacilli, staphylococci, and anthrax bacilli were injected, some subcutaneously, some into the knee joint. In the experiments with tubercle bacilli the stasis was maintained an hour or two daily for several weeks, in those with staphylococci for twelve to twenty-four hours, with intervals of twenty-four hours, in those with anthrax for twenty-four to forty-eight hours once only. The most favorable results were obtained in the experiments with anthrax bacilli. After the stasis had been maintained from thirty-six to forty-eight hours the inoculated bacilli were found to be reduced to slight degenerated traces, and the animals remained well after the rubber band had been removed. Less favorable results were obtained in the experiments with staphylococci and in those with the tubercle bacilli the stasis treatment was almost without effect. The author ascribes the beneficial effect of Bier's stasis in acute infectious diseases to the bactericide action of the fluid collected in the tissues, to restriction of resorption, to thinning of the toxines, and to the pathological changes induced in the tissue metabolism.

4. Experimental Tabes in Dogs.—Spielmeyer found as the result of his experiments that degenerative changes take place in the central nervous system of dogs from trypanosoma infection, which resemble those ordinarily found in post syphilitic tabes in man.

7. The Tuberculin Treatment of Pulmonary Tuberculosis.—Hammer believes that tuberculin is of essential service in the treatment of pulmonary tuberculosis, particularly when given in combination with appropriate hygienic and dietetic treatment, and deals at some length with the dosage and its gradual and careful increase to obtain the best results.

8. Opium-Bromide Treatment of Epilepsy.—Kellner states that after fifteen years of observation he is of the opinion that the method most certain to bring about improvement or recovery from epilepsy is the combination of baths with the opium-bromide treatment.

10. Myositis Ossificans Progressiva Cured with Thiosinamine.—Boseck reports a case of this disease which occurred in a woman, twenty-two years of age, who recovered under treatment with thiosinamine; 0.1 of the drug in glycerin and water was injected daily.

12. Terms Used in the Modern Theory of Immunity.—Dieudonné presents the definitions of nearly one hundred medical terms arranged alphabetically, a very valuable contribution to medical lexicography.

Proceedings of Societies.

AMERICAN SOCIETY OF TROPICAL MEDICINE, PHILADELPHIA.

Meeting of December 7, 1906.

The President, Dr. ROLAND G. CURTIN, in the Chair.

The General Economic Importance of Mosquitoes.—Professor JOHN B. SMITH, of Rutgers College, New Brunswick, N. J., thought no one should be better qualified than a Jerseyman to speak upon this subject, since no State in the Union had suffered more in reputation and in arrested prosperity from mosquitoes than New Jersey. He regarded the mosquitoes as of great economic importance and as serious drawbacks to any community from three points of view: 1. Their influence, direct and indirect, upon the health and well being of the inhabitants. 2. Their influence upon the development of the agricultural resources, preventing or limiting the profitable use of infested territory for certain purposes. 3. Their influence upon land values, due to the drawbacks mentioned under points 1 and 2.

He maintained that the elimination of the mosquito would add ten millions to the taxable value of real estate in two years. Instances were quoted in which sections of the salt marshes had been drained in the manner advocated by him, and with results of unparalleled prosperity. It had been decided to establish two industrial concerns on the marsh area, which were expected to employ, respectively, four and six thousand men. In determining whether, in any stage, any species of mosquito was of any value to man, directly or indirectly, it seemed to the speaker that the answer must be against the insects, for there was absolutely no evidence that they were of any use or benefit whatever to the human race, directly or indirectly, as larva or adult. It was stated that the legislature and governor of New Jersey were sufficiently convinced of the injurious effects of the mosquito upon the development of the State to venture an investment of $350,000 in the effort to secure the practical elimination of the pest.

The Mosquitoes of Pennsylvania.—Mr. H. L. VIERECK, of the Pennsylvania Department of Health, spoke of his investigation of mosquitoes in Pennsylvania during the past summer. It was found that mosquitoes bred only in slow running or stagnant water that was devoid of the natural enemies of the mosquito; for example, no breeding was detected in reservoirs adequately stocked with fishes, or in waters tinctured with sulphur water from the coal mines, or in water covered with a film of oil from oil wells. In one instance a standing body of water polluted with waste from a glue factory produced culex (the nonmalaria bearing mosquito) in myriads, but no anopheles (the malaria bearing mosquito). In Braddock and McKeesport, where there were no depressed areas, there was no mosquito breeding. In the investigation all the principal cities and other communities had their mosquito problem inspected by the officers of the State Department of Health. A report based upon this field work was expected to appear in the early part of 1907.

The Life History of the Malarial Parasite.—Dr. JOSEPH MCFARLAND gave a brief description of the life history of the malarial parasite, first showing a temperature chart of tertian malarial fever and explaining it by the changes through which the developing parasites passed in the human body. Each ascent of temperature characterizing a paroxysm marked the growth of a generation of parasites which sporulated at that time, forming many small embryos which entered the corpuscles and began the process all over again. This cycle within man was complete and progressive in itself, causing constantly increasing damage to the patient, but provided no means for the transmission of the disease from man to man. Such transmission was accomplished by the mosquito—anopheles. When the insect sucked blood containing malarial parasites, it became infected by the parasites, which passed through regular developmental stages in its body before being transmissible to other men, the duration of the cycle varying from eight to twelve days, according to the temperature, and probably taking place only during summer.

The adult parasites known as gametocytes appeared in the blood as rounded bodies of the size of red corpuscles in the benign forms, and as crescentic or falciform bodies in the malignant forms of malarial disease. The smaller of these, the microgametocyte, broke up into long filiform bodies, or spermatozooids, which fertilized the larger (female) parasites, or macrogametocytes, in the stomach of the mosquito. The fertilized parasite was then known as a zygocyte. It elongated, bored its way through the stomach, and took up its position on the outer surface of the insect's stomach, where it grew into a large rounded body known as a blastomere, which later broke up into an immense number of small falciform or filiform bodies known as sporozooids, which were embryo parasites. These migrated to the salivary glands of the mosquito to be discharged from its body by the saliva. There were so many of these sporozooids that the probability was that they were not all discharged before the insect dies, which, including the period of hibernation, might be several months. During all the time between their formation and the death of the mosquito, the insect was infective, as each time it bit, the sporozooids passed into the proboscis wound in the saliva. Only the female mosquitoes bit; therefore only the females transmitted the disease. In order that the mosquito might transmit the disease, it was necessary that she should bite a human being at a time when there were gametocytes in the blood, that she should subsequently live at least eight or ten days, and that she should then bite some human being. All the evidence went to show that the human cycle took place only in human beings, not in any other warm blooded animal, and that the mosquito cycle took place only in the mosquito, not in other insects. As the malarial parasite was only one of many parasites affecting man, so it was only one of many affecting mosquitoes.

Book Notices.

The Schott Methods of the Treatment of Chronic Diseases of the Heart, with an Account of the Nauheim Baths and of the Therapeutic Exercises. Illustrated. By W. BEZLY THORNE, M. D., M. R. C. P. Fifth Edition. Philadelphia: P. Blakiston's Son & Co., 1906. Pp. 140. (Price, $2.)

While it is quite obvious that, apart from the few specifics we have in the materia medica, the results obtained from physical methods of treatment, the regulation of the patient's mode of life, diet, baths, exercise, rest, and good hygiene, are generally better and more lasting than can be obtained from the administration of drugs alone; yet it will be difficult to admit the extravagant contentions which are here set up for the Nauheim baths and Schott exercises. Not only is it alleged, on what seems to us insufficient evidence, that cases of long standing cardiac dilatation and hypertrophy are permanently cured by a few weeks' treatment, with rapid diminution in the size of the heart and disappearance of murmurs and valvular incompetence, but the enthusiastic author finds the Schott system to be also a panacea efficient in such widely different conditions as aneurysm, simple anæmia, asthma, dilated stomach, headache, dysmenorrhœa, Raynaud's disease, exophthalmic goitre, and minor epilepsy of "circulatory

origin." The statement that by this method of treatment "patency may be restored to occluded arterioles and capillaries" will tax the credulity alike of the pathologist and of the conservative clinician. The exercises are treated of in considerable detail, but the description of the bath technique is inadequate. The case histories are illustrated by several nebulous x ray pictures, which are meaningless, and by diagrams showing rapid and marvelous results in the diminution of the area of cardiac dulness. These are somehow not very convincing, and we have a lurking suspicion that they may be more or less "schematic." The text is disfigured by such expressions as "general soakage" for œdema, such hybrids as "abilious," and the unusual "atrophous" for atrophic.

BOOKS, PAMPHLETS, ETC., RECEIVED.

Animal Micrology. Practical Exercises in Microscopical Methods. By Michael F. Guyer, Ph. D., Professor of Zoology in the University of Cincinnati. Chicago: The University of Chicago Press, 1906.

Transactions of the Third and Fourth Annual Conferences of State and Territorial Officers with the United States Public Health and Marine Hospital Service, 1905 and 1906. Washington: Government Printing Office.

The Diagnosis of Nervous Diseases. By Purves Stewart, M. A., M. D., F. R. C. P., Physician to Out-Patients at the Westminster Hospital; Physician to the Royal National Orthopædic Hospital, etc. London: Edwin Arnold, 1906.

Miscellany.

The Death of Dr. William K. Otis.—At the regular meeting of the Second Section of the American Urological Association, held in New York on Wednesday, October 24, 1906, the following resolutions were presented and adopted:

William Kelly Otis's earthly career ended on September 22, 1906.

To the members of the American Urological Association, his death is a threefold blow.

Most of us knew him intimately from his childhood; by his decease we lose a consistent friend, a charming companion, a most estimable colleague.

To the science of urology his death means an irreparable loss. Cut off in the midst of his career, his inventive genius is stopped; the new and useful instruments he was continually devising must now be perfectly by other hands. The advances in our work he can longer aid in developing.

The American Urological Association loses one of its founders, one of its most active coadjutors, one of its truest adherents.

Our association shares with the family of William K. Otis, with the profession at large, and with that world in which true manhood is understood and appreciated, that deep grief which the death of so noble a character inspires.

(Signed) Ramón Guiteras, A. Ernest Gallant, Ferd. C. Valentine, } Committee.

The Diagnosis of Late Hereditary Syphilis in the School Child.—De Santos Saxe remarks, in the *Archives of Pædiatrics,* December, 1906, that among 2,500 school children who were subjected to a thorough physical examination, he found but twelve in whom physical signs justified a presumptive diagnosis of heredosyphilis. Owing to the peculiar conditions of the investigation no family histories could be obtained. The children examined ranged from six to sixteen years, and about equal numbers of boys and girls were studied. The heredosyphilitic children ranged from six to fourteen years of age. Five were boys, and seven girls. All save one were deficient mentally; eight children showed Hutchinson's teeth, four showed the remains of syphilitic eye lesions, and one showed an active keratitis. Three of the twelve cases had hydrocephalic heads. All showed retarded physical development, and seven of the total number showed associated rickety changes in the bones. Nine showed scars about the mouth; all had enlarged glands; two had lesions of the nose and none in the throat. Chorea was present in two. While heredosyphilis does not seem to be common in the children of the New York public schools, it constitutes an affection which must be looked for by the school examiner; and if sufficiently characteristic signs are found, he is justified in calling the family physician's attention to these signs as indicating a possible specific taint. The duty of the family physician in such cases is obvious.

Tulase, Behring's New Remedy for Tuberculosis.—Tulase, the new tuberculosis remedy of Behring, in a pure state is a clear liquid resembling thin honey, which contains all the constituents of the Koch bacillus. Behring (*Pharmazeutische Zeitung,* 1906, page 966) divides these constituents into three principal groups: (1) Lipoid substances such as neutral fats and waxes soluble in alcohol, ether, acetone, chloroform, etc., including also all the substances insoluble in acids; (2) those protein compounds which are extracted from the defatted tubercle bacilli with distilled water and with 10 per cent. sodium chloride solution and which consist partly of nucleoalbumins and partly of globulins; (3) the proteids which form the principal constituents of the tubercle bacilli which have been freed from fats and from protein. The preparation of tulase, which is a very complicated process, embraces the treatment of the bacilli with chloral, by which the TC (an active constituent of the bacilli, so called by Behring) of the bacilli is so changed that when the tulase is administered either by way of the stomach or by subcutaneous or intravenous injection the cells of the TC are decomposed and converted into a hypothetical substance TX. This confers immunity against tuberculosis and against hypersensitiveness to Koch's tuberculin. Tulase is furnished only to such clinics as have physicians who are well grounded in bacteriology and who have studied for at least three months in the Marburg Institute for Experimental Therapy with a view to experimental work in the immunizing therapy of tuberculosis. Since the dosage of the tulase, the best method of application, the indications for its use, etc., are not yet definitely determined, the remedy is furnished without cost to such clinics as come within the above category. The physicians studying at Marburg are required to follow closely the methods laid down at Marburg as to registration of observations, the dosage, the method of application, the selection of the patients to be treated and the furnishing of regular reports. In the treatment of animals which have already been infected intravenous or subcutaneous application is recommended. The dose is given by Behring as 0.01 Cc., which may be doubled at the second administration after a lapse of four days. After a lapse of two to four weeks the dose is again repeated, the same quantities being given with an interval of four days between. Tulase is put up in glass tubes, each containing 5 Cc. of either 1 or 10 per cent. solution. It is stated that tulase can be used as a substitute for tuberculin in the diagnosis of suspected cases of tuberculosis. In view of the extravagant expectations which are entertained of the results which may be achieved from the use of tulase, Behring has in several addresses particularly warned his hearers against a tendency to expect too much of the preparation. He has said that the most that could be hoped for as a remedy is that by its early use young individuals may be protected from pulmonary tuberculosis. It is not to be expected that it will heal in cases where the lung tissues have already been destroyed by the ravages of the bacillus.—Through the *American Druggist and Pharmaceutical Record,* December 10, 1906.

Official News.

Public Health and Marine Hospital Service Health Reports:

The following cases of smallpox, yellow fever, cholera, and plague, have been reported to the Surgeon General, Public Health and Marine Hospital Service, during the week ending December 21, 1906:

Smallpox—United States.

Places.	Date.	Cases.	Deaths.
Georgia—Augusta	Nov. 27-Dec. 10	16	
Illinois—Chicago	Dec. 9-15	1	
Illinois—Galesburg	Dec. 2-8	13	
Indiana—Indianapolis	Dec. 3-9	1	
Indiana—South Bend	Dec. 2-8	3	
Kansas—Topeka	Dec. 2-8	1	
Louisiana—New Orleans	Dec. 2-8	1	
Minnesota—Fourteen counties	Nov. 12-Dec. 10	56	
Montana—Two counties	Nov. 1-30	2	
Missouri—St. Joseph	Oct. 26-Dec. 8	3	
Missouri—St. Louis	Dec. 1-8	1	
Nebraska—Omaha	Nov. 15-21	1	
New York—New York	Nov. 2-Dec. 15	18	
North Carolina—Three counties	Oct. 1-31	29	
Ohio—Toledo	Dec. 2-8	3	
Washington—Spokane	Dec. 4-10	2	
Wisconsin—Milwaukee	Oct. 2-8	63	
Smallpox—Foreign.			
Africa—Cape Town	Oct. 27-Nov. 3	5	
Brazil—Bahia	Oct. 28-Nov. 10	15	
Brazil—Pernambuco	Oct. 16-30		15
Brazil—Rio de Janeiro	Nov. 6-10	3	
Chile—Iquique	Nov. 6-10		Present.
Great Britain—Hull	Nov. 18-24	3	
Great Britain—Manchester	Nov. 18-24	1	
India—Calcutta	Oct. 28-Nov. 3	1	
Russia—Odessa	Nov. 18-24	2	1
Russia—St. Petersburg	Nov. 17-23	20	1
Turkey—Beirut	Nov. 24		Present.
Cholera—Insular.			
Philippine Islands—Manila	Oct. 13-Nov. 17	349	145
Philippine Islands—Provinces	Oct. 13-Nov. 17	1,0[illegible]	730
Cholera—Foreign.			
India—Bombay	Nov. 14-20		17
India—Calcutta	Oct. 28-Nov. 10		104
Yellow Fever—Foreign.			
Cuba—Marianao	Dec. 15	1	
Mexico—Vera Cruz	Nov. 17-Dec. 1	3	2
Plague—Foreign.			

Public Health and Marine Hospital Service:

Brazil—Bahia	Oct. 28-Nov. 10	5	1
Brazil—Pernambuco	Oct. 16-31		4
Brazil—Rio de Janeiro	Nov. [illegible]-10	34	12
Peru—Catacaos	Nov. 3	1	
Peru—Mollendo	Nov. 3	1	
Peru—Trujillo	Nov. 1-6	1	

List of Changes of Station and Duties of Commissioned and Noncommissioned Officers of the Public Health and Marine Hospital Service, for the seven days ending December 19, 1906:

AMESSE, J. W., Passed Assistant Surgeon. Granted leave of absence for seven days, from December 10, 1906.

COFER, L. E., Passed Assistant Surgeon. Leave of absence granted Passed Assistant Surgeon Cofer for one month and three days, from November 21, 1906, amended to read eighteen days.

GRUBBS, S. B., Passed Assistant Surgeon. Granted leave of absence for three days, from December 26, 1906.

OAKLEY, J. H., Passed Assistant Surgeon. Granted leave of absence for three days.

RANSOM, S. A., Acting Assistant Surgeon. Granted twenty-two days' extension of annual leave, on account of sickness, from November 20, 1906.

ROSENAU, M. J., Passed Assistant Surgeon. Granted leave of absence for nine days, from December 21, 1906.

TROXLER, R. F., Pharmacist. Leave of absence granted Pharmacist Troxler for twenty-two days, from December 10th, amended to read for eighteen days.

Promotions.

Pharmacist G. R. McBride promoted from pharmacist of the third class to pharmacist of the second class, effective August 15, 1906.

Pharmacist George Neves promoted from pharmacist of the third class to pharmacist of the second class, effective November 17, 1906.

Army Intelligence:

Official List of Changes in the Stations and Duties of Officers serving in the Medical Department of the United States Army, for the week ending December 22, 1906:

BLOOMBERGH, H. D., First Lieutenant and Assistant Surgeon. Granted leave of absence for one month.

BROWN, O. G., First Lieutenant and Assistant Surgeon. Granted leave of absence for twenty days.

COWPER, H. W., First Lieutenant and Assistant Surgeon. Relieved from further observation and treatment at the General Hospital, Washington Barracks, D. C., and ordered to accompany detachment from Company C to Company B, Hospital Corps, to San Francisco, Cal., and then report in person to medical superintendent, Army Transport Service, for duty, relieving First Lieutenant Howard A. Reed, assistant surgeon.

LAMSON, THEODORE, First Lieutenant and Assistant Surgeon. Granted leave of absence for twenty days.

NEWGARDEN, GEORGE J., Major and Surgeon. Now at Newport News, Va., ordered to proceed to Fort D. A. Russell, Wyo., for duty; reported on fifteen days' leave of absence *en route* to station.

REED, HOWARD A., First Lieutenant and Assistant Surgeon. Upon being relieved from duty in the Army Transport Service will proceed to Manilla on the first available transport sailing from San Francisco, and will report in person to the commanding general of the Philippines Division for assignment to duty.

RHOADS, THOMAS L., Captain and Assistant Surgeon. Granted twelve days' leave of absence.

RUTHERFORD, HENRY H., Captain and Assistant Surgeon. Granted ten days' leave of absence.

SHIMER, IRA, Captain and Assistant Surgeon. Reported for duty as attending surgeon, New York, N. Y.

WILSON, JAMES S., Captain and Assistant Surgeon. Granted seventeen days' leave of absence.

Navy Intelligence:

Official List of Changes in the Medical Corps of the United States Navy, for the week ending December 22, 1906:

BARBER, G. H., Surgeon. Detached from the Naval Station, Olongapo, P. I., and ordered to the *Baltimore*.

KINDLEBERGER, C. P., Surgeon. Detached from the *Baltimore* and ordered to the Naval Station, Olongapo, P. I.

LUMSDEN, G. P., Surgeon. Ordered to duty with the Marine Recruiting Party, Dallas, Texas.

MCLEAN, N. T., Assistant Surgeon. Detached from the Naval Station, Olongapo, P. I., and ordered home.

SEAR, R., Surgeon. Detached from the Naval Station, Chacao, P. I., and ordered to the Naval Hospital.

Births, Marriages, and Deaths.

Married.

HUGHES—VON FRITSCH.—In Omaha, Nebraska, on Friday, November 23rd, Dr. Leonard S. Hughes, United States Army, and Miss Marguerite von Fritsch.

KUEHN—MILLER.—In Philadelphia, on Monday, October 15th, Dr. Rolando Kuehn and Miss Ida May Miller.

Died.

BLOOMBERG.—In Switzerland, on Wednesday, November 28th, Dr. Horace D. Bloomberg, United States Army.

CHERRY.—In Marlborough, Maryland, on Saturday, December 15th, Dr. Edward D. Cherry, aged eighty-three years.

EMRICH.—In Chicago, on Wednesday, December 12th, Dr. George Monroe Emrich, aged fifty-three years.

FRAZEE.—In Lexington, Kentucky, on Monday, December 17th, Dr. Lewis J. Frazee, aged fifty-seven years.

HERDMAN.—In Baltimore, on Friday, December 14th, Dr. William James Herdman, aged fifty-eight years.

JENKINS.—In Tecumseh, Michigan, on Friday, October 12th, Dr. John F. Jenkins, aged seventy-two years.

LEIGH.—In Clarksville, Virginia, on Sunday, December 9th, Dr. J. R. Leigh, aged eighty years.

LEVAN.—In Philadelphia, on Sunday, December 9th, Dr. J. R. Leven.

MCCLEARY.—In Brooklyn, on Saturday, December 15th, Dr. Thomas F. McCleary, aged thirty-six years.

MONTMARQUET.—In Cohoes, N. Y., on Monday, December 17th, Dr. J. D. Montmarquet.

ODLIN.—In Melrose, Massachusetts, on Wednesday, December 19th, Dr. Charles Cushing Odlin, aged sixty years.

SHERMAN.—In Mahanoy City, Pennsylvania, on Tuesday, December 11th, Dr. A. B. Sherman, aged seventy-eight years.

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